Field Operations and Preliminary Results Report (ISO Part 1)

Arklow Bank Wind Park – Geotechnical Borehole Survey 2022 | Arklow Bank Wind Park, Irish Sea

F186642-1 03 | 28 October 2022

Final

Sure Partners Limited

Document Control

Document Information

Project Title	Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Document Title	Field Operations and Preliminary Results Report (ISO Part 1)
Fugro Project No.	F186642
Fugro Document No.	F186642-1
Issue Number	03
Issue Status	Final
Fugro Legal Entity	Fugro GeoServices Limited
Issuing Office Address	Fugro House, Hithercroft Road, Wallingford, Oxfordshire, OX10 9FY, UK

Client Information

Client	Sure Partners Limited
Client Address	Red Oak South, South County Business Park, Leopardstown, Dublin 18, Ireland
Client Contact	John Davidson

Revision History

Issue	Date	Status	Comments on Content	Prepared By	Checked By	Approved By
01	05/08/22	Draft	For comment	BM, DG	JPD, SAF	JPD
02	02/09/22	Final	Reissue in response to client comments	BM, DG	JPD, SAF	JPD
03	28/10/22	Final	Reissue as ISO Part 1	BM	CK	SAF

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28 October 2022

Arklow Bank Wind Park – Geotechnical Borehole Survey 2022 - ISO Part 1 Report

Attention: John Davidson

Dear Sir,

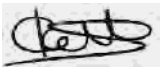
This ISO Part 1 report presents the Field Operations and Preliminary Results for the Arklow Bank Wind Park – Geotechnical Borehole Survey 2022.

This report has been revised from and supersedes the previously issued Fugro Report F186642-C NORSOK Part C Field Operations Report. It was prepared by Ben Marsden under the supervision of Colleen Kelly.

The results described here should be treated as provisional; final results and conclusions will be published in the forthcoming ISO Part 2 - Measured and Derived Geotechnical Parameters and Final Results report. If you have any questions in the meantime, please do not hesitate to contact me.

Yours sincerely

Ben Marsden
Project Engineer



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Senior Engineer

Distribution: One electronic copy to be uploaded to Fugro GAIA Books

Reporting Structure

Geotechnical Report
Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Arklow Wind Park, Irish Sea

Field Operations and Preliminary Results **ISO Part 1**	**Measured and Derived Geotechnical Parameters and Final Results** **ISO Part 2**	**Data Interpretation and Evaluation of Representative Geotechnical Parameters** **ISO Part 3 – Not Required**
Document No. F186642-1 Date 26 October 2022 Issue 03 Status Final	Document No. F186642-2 Date TBC Issue 01 Status Draft	
Executive Summary 1. Project Information 2. Drilling Data 3. In Situ Test Data 4. Sampling Data 5. Laboratory Test Data 6. Geotechnical Descriptions and Profiles 7. Digital Data Deliverables and Previous Reports 8. Log of Activities 9. Contractual Agreements 10. Health, Safety, Security and Environment 11. References 12. Symbols and Terms List of Plates Appendices	TBC	Not Required

Quality Assurance Record

Section		Prepared By	Checked By	Approved By
Executive Summary		BM	JPD/SAF	JPD
1	Project Information	BM	JPD/SAF	JPD
2	Drilling Data	BM	JPD/SAF	JPD
3	In Situ Test Data	DG/BM	BR/JPD	JPD
4	Sampling Data	BM	JPD/SAF	JPD
5	Laboratory Test Data	BM	JPD/SAF	JPD
6	Geotechnical Descriptions and Profiles	BM	JPD/SAF	JPD
7	Digital Data Deliverables and Previous Reports	BM	JPD/SAF	JPD
8	Log of Activities	BM	JPD/SAF	JPD
9	Contractual Agreements	BM	JPD/SAF	JPD
10	Health, Safety, Security and Environment	BM	JPD/SAF	JPD
11	References	Fugro	Fugro	Fugro
12	Symbols and Terms	Fugro	Fugro	Fugro
List of Plates		BM	JPD	JPD
Appendices		BM	JPD	JPD

Notes
The personnel stated above were responsible for checking and approving this report
The PDF document held in Fugro's archive represents Fugro's formal deliverable to the Client. It is designed for viewing with Adobe® Reader® Version 8.0 or above in Windows®

Executive Summary

Introduction

Sure Partners Limited is developing the Arklow Bank Wind Park. The Arklow Bank Wind Park is located between three and seven nautical miles off the coast of County Wicklow, Ireland.

Sure Partners Limited contracted Fugro GeoServices Limited to carry out a geotechnical site investigation to provide geotechnical information that will be used to;

- Inform the ground model;
- Inform the Front End Engineering Design (FEED) and provide information for detailed design locally;
- Inform the scoping and design of further ground investigation phases.

The fieldwork was performed from the jack up barge DEME Neptune from 20 May to 19 July 2022.

This report details the field operations for the investigated locations in accordance with ISO Part 1. It presents:

- A description of the geotechnical site investigation;
- A description of the methods employed for drilling, in situ testing and sampling;
- The results of the in situ testing and field laboratory testing;
- Preliminary geotechnical logs and descriptions of the soil strata;
- Information on recovered soil samples;
- Brief details of the parties involved in the site investigation;
- Preliminary positioning and water depth measurements;
- Equipment sheets and calibration certificates for the equipment used during the offshore fieldwork.

This report will be superseded by the ISO Part 2 - Measured and Derived Geotechnical Parameters, which will be issued when the onshore laboratory testing programme is complete.

Fieldwork

Table S.1 summarised the number of investigated locations.

Table S.1: Summary of test locations

Exploratory Position Reference	Easting [m]	Northing [m]	Elevation [m LAT]	Final Depth [m BSL]
BH01	303547.62	5866922.76	-24.80	75.00
BH08	301523.68	5856887.61	-19.40	57.80
BH09	300261.50	5853958.52	-30.50	55.50
BH10	301945.77	5852228.48	-32.50	62.50
BH12	299352.92	5847931.47	-20.40	53.50
BH13	300820.59	5847130.59	-38.10	51.50

Exploratory Position Reference	Easting [m]	Northing [m]	Elevation [m LAT]	Final Depth [m BSL]
BH20	303136.14	5857856.82	-38.40	60.10
BH26	297804.74	5842066.43	-27.80	59.30
BH28	302479.91	5863159	-28.70	69.50

Notes:
Coordinate System: UTM Zone 30 N.
LAT = Lowest Astronomical Tide.
BSL = Below seabed level

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1. Project Information

1.1 Introduction

Sure Partners Limited (the Client) are developing Phase 2 of the Arklow Bank Wind Park. The Arklow Bank Wind Park is located between three and seven nautical miles off the coast of County Wicklow, Ireland.

The Client contracted Fugro GeoServices Limited (Fugro) to perform a geotechnical site investigation to obtain information to assist in foundation selection and front-end engineering design. The fieldwork was performed from the jack-up barge DEME Neptune from 20 May to 19 July 2022.

A vicinity map showing the general location of the investigated area is presented in Figure 1.1. A detailed plan of the investigated locations is presented on Plate 1.1.

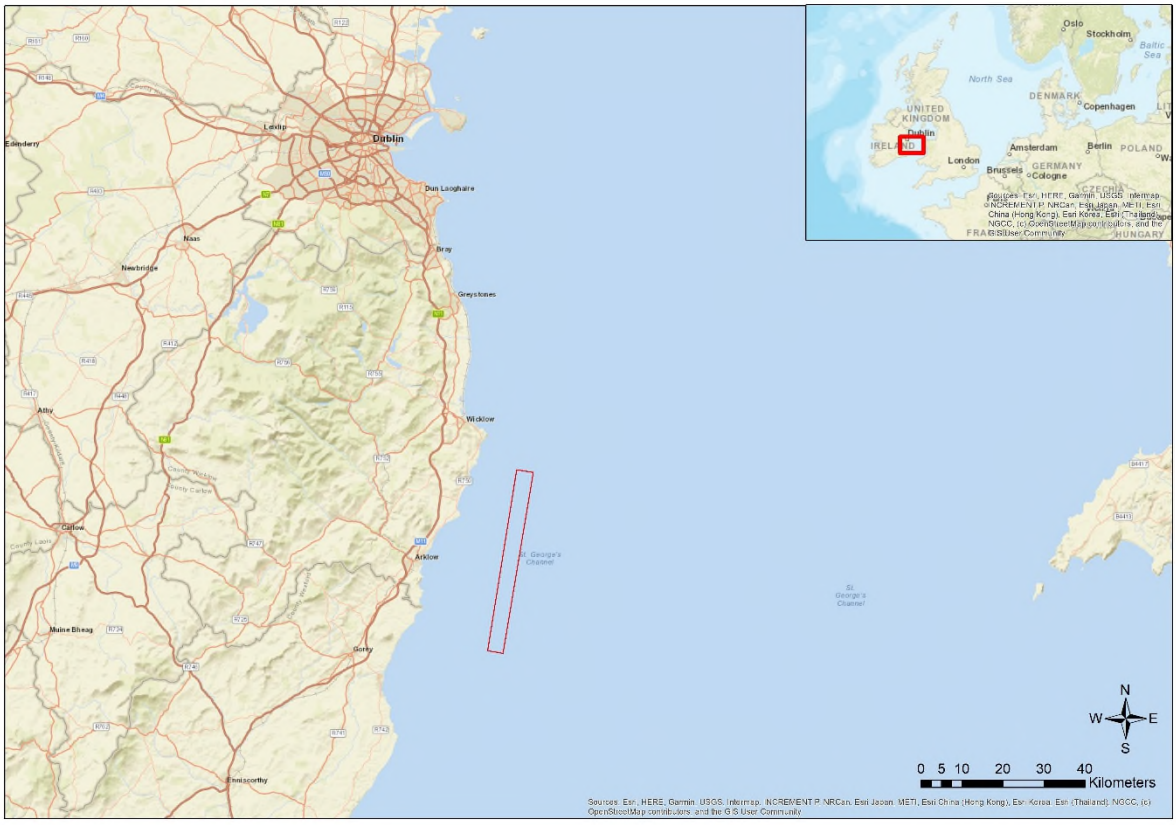

Figure 1.1: General location plan of the site investigation area.

1.2 Scope of Report

This ISO Part 1 report presents:

1. A description of the geotechnical site investigation;
2. A log of activities performed during the fieldwork;

3. Brief details of the parties involved in the geotechnical site investigation;
4. A description of the methods employed for drilling, in situ testing and sampling;
5. Equipment sheets and calibration certificates for the equipment used during the fieldwork;
6. Information on recovered samples;
7. The results of the in situ testing, downhole geophysical logging and site laboratory testing;
8. Preliminary geotechnical logs and descriptions of the strata;
9. A summary of available digital data;
10. Preliminary positioning and water depth measurements;
11. A description of health, safety and environment statistics and events.

This report will be superseded by the report presenting measured and derived geotechnical parameters, which will be issued when the laboratory testing programme is complete.

1.3 Summary of Fieldwork

The fieldwork was performed from 20 May to 19 July 2022. The proposed scope of the geotechnical site investigation was determined by the Client. The scope of works comprised rotary cored boreholes with cone penetration testing and wireline geophysical logging at eight locations advanced to a maximum depth of 75.00 m BSL (below seabed level). This was later expanded to nine rotary cored boreholes.

A schedule of exploratory holes is presented below in Table 1.1 and Table 1.2 summarises the fieldwork carried out during the site investigation and the types of samples taken and in situ testing performed during the works.

Table 1.1: Schedule of exploratory positions

Exploratory Position Reference	Easting [m]	Northing [m]	Elevation [m LAT]	Final Depth [m BSL]
BH01	303547.62	5866922.76	-24.80	75.00
BH08	301523.68	5856887.61	-19.40	57.80
BH09	300261.50	5853958.52	-30.50	55.50
BH10	301945.77	5852228.48	-32.50	62.50
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BH26	297804.74	5842066.43	-27.80	59.30
BH28	302479.91	5863159	-28.70	69.50

Notes:
Coordinate System: UTM Zone 30 N.
LAT = Lowest Astronomical Tide.
BSL = Below seabed level

Table 1.2: Summary of fieldwork

Exploratory Position Reference	Final Depth [m BSL]	No. of Bulk Samples	No. of Small Disturbed Samples	Number of Core Samples	No. of PP Tests	No. of TV Tests	No. of MC Tests	No. of BD Tests	No. of UU Tests	No. of PL Test	No. of TR Tests	No. of CPT Pushes	ABI Testing	No. of CAL3 tests	No. of NGR tests	No of PSSL tests
BH01	75.00	185	50	50	121	33	227	94	8	0	0	1	Y	Y	Y	Y
BH08	57.80	88	15	33	50	33	111	57	4	0	3	24	N	Y	Y	Y
BH09	55.50	94	33	62	24	0	71	56	2	72	0	14	Y	Y	Y	Y
BH10	62.50	108	13	56	36	15	97	71	5	34	0	18	Y	Y	Y	Y
BH12	53.50	92	15	48	44	27	94	58	4	41	0	18	Y	Y	Y	Y
BH13	51.50	76	12	57	35	26	64	62	2	40	0	11	Y	Y	Y	Y
BH20	60.10	87	6	17	25	21	101	44	3	0	2	27	Y	Y	Y	Y
BH26	59.30	89	12	49	27	17	84	51	2	56	0	16	Y	Y	Y	Y
BH28	69.50	136	51	79	89	4	188	100	5	18	0	0	Y	Y	Y	Y

Notes:
BSL = Below Seabed Level
PP = Pocket Penetrometer
TV = Torvane
MC = Moisture Content
BD = Bulk and Dry Density
UU = Unconsolidated Undrained Triaxial Test
PL = Point Load Test
TR = Thermal Resistivity Test
CPT = Cone Penetrometer Test
ABI = Acoustic Borehole Imager
CAL3 = Three Arm Caliper
NGR = Natural Gamma Ray Logging
PSSL = PS Logging
Y = Testing Performed
N = Testing Not Performed

1.4 Data Sources

The geotechnical data used in this report were obtained from fieldwork performed from the jack-up barge DEME Neptune from 20 May to 19 July 2022.

Appendix F presents datasheets on the equipment used during the fieldwork.

1.5 Geodetic Data

The coordinates presented in the positioning and data report are the calculated location coordinates.

Appendix E summarises the coordinates and water depths of the investigated locations.

Table 1.3 provides details of the geodetic datum and map projection adopted for the project.

Table 1.3: Project geodetic and projection parameters

Parameter	
Project Geodetic Datum	
Geodetic Datum	World Geodetic System 1984
Ellipsoid	WGS 84
Semi major axis	a = 6 378 137.00 m
Inverse Flattening	1/f = 298.257223563
Project Projection Parameters	
Projection	Transverse Mercator
Grid System	UTM Zone 30N
Latitude of Origin	00° 00′ 00.000″ N
Central Meridian	003° 00′ 00.000″ W
Scale Factor on Central Meridian	0.9996
False Easting	500 000 m
False Northing	0 m
Project Vertical Parameters	
Vertical Coordinate Reference System	VORF LAT Height
Datum	VORF LAT Datum
Transformation	ETRS89 to VORF LAT

The user must consider the accuracy of all measurements, particularly where use may differ from original intentions. For example, water depths presented are indicative only and should not be used for design purposes, such as estimating current or wave forces on structures.

1.6 Guidelines on Use of Report

Appendix A outlines the limitations of this report in terms of a range of considerations including, but not limited to, its purpose, its scope, the data on which it is based, its use by third parties, possible future changes in design procedures and possible changes in the conditions at the site with time. It represents a clear exposition of the constraints which apply to all reports issued by Fugro. It should be noted that these guidelines do not in any way supersede the terms and conditions of the contract between Fugro and Sure Partners Limited.

2. Drilling Data

2.1 Introduction

Nine boreholes were drilled during the site investigation. Cable percussive drilling operations were performed using a Pilcon winch and cantilever frame. The rotary coring operations were performed using a Comacchio MC1200 drill rig. Rotary coring was performed using the Geobor-S wireline triple barrel rotary coring system with a polycrystalline diamond (PCD) bit to recover runs up to 1.50 m in length and 102 mm diameter.

The water depth and mudline were determined at the beginning of each borehole by measuring the depth in relation to deck.

A combination of seawater and drilling mud (Pure bore) aided the drilling process and drilling fluids were returned to the platform where a fluid tank system was used to allow recirculation of the fluid.

The drilling system only allowed inspection of the soil and rock at the depths at which the samples were taken. In the intervening zones soil parameters can be estimated from the in situ test data, and the Jean Lutz drilling parameters can be used to indicate a change in material or confirm no change in material between samples and in situ tests where open hole drilling techniques have been used.

On completion of drilling and testing at each exploratory position the borehole was left to collapse naturally.

Table 1.2 lists the final recovery depth of each borehole and the number of successful CPTs and samples recovered. Drilling logs, based on the records kept by the drillers are presented on Plates 2.1 to 2.221.

Datasheets for the equipment used during the geotechnical site investigation can be found in Appendix F.

2.2 Operational Constraints

The fieldwork was performed successfully without any significant drilling challenges. The test equipment sometimes failed to latch due to soil cuttings at the bottom of the hole. Where this occurred, the drill string was lifted slightly, and the bottom of the hole flushed. Tests were re-attempted from the same depths.

On 27 June after setting up on position BH16 there was an unexpected movement of the 20 inch conductor casing, it was considered that this was due to suspected scour to 2.00 m BSL. The suspected scour occurred in a short period of time which was considered unusual by Fugro and the Client and due to concerns about lateral stability the borehole was abandoned.

Table 2.1: Summary of operational constraints: cone penetration test data

Exploratory Position Reference	Test Number	Description
BH01	CPT_01	Issues with CPT, fault finding and repair. Remove CPT beam due to fault, CPT discontinued until issue resolved, continue operations with continuous sampling. Testing repairs made to winch
BH09	CPT_07	Oversample of CPT at 15.00 m BSL not required on client instruction
BH13	CPT_06	CPT_06, not latching, pull out clean off small amount of clay, zero tool and relatch
BH20	CPT_01	CPT_01, CPT not latching, sand piped in S-Geobor, pull tool
BH20	CPT_10	CPT_10, tool de-latched twice
BH20	CPT_11	CPT_11, tool de-latched once
BH26	NA	Checking and testing repairs made to CPT winch wire
Notes CPT = Cone penetration test BSL = Below seafloor level NA = Not applicable		

2.3 Practice for Geotechnical Drilling

The fieldwork was conducted using the DEME Neptune which was specifically developed for performing nearshore, high quality geotechnical site investigations and construction works. The barge includes a four-leg jack-up system allowing works in the intertidal zone in up to 80 m water depth.

Drilling operations were performed off the side of the JUB from a cantilevered platform. At the start of each exploratory location the conductor casing was installed into the seabed using the vibrohammer to ensure sufficient embedment of the casing into the seabed. The 7" casing and Geobor-S casing were run through the conductor casing.

Table 2.2 presents general drilling information.

Table 2.2: Practice for geotechnical drilling

Working Platform	DEME Neptune Offshore Heavy Lift DP2 Jack-Up Vessel (2000 m^2)
Drilling Method	Cable Percussive (CP) and Rotary Cored (RC)
Type and Make of Drill Rig	Pilcon Wayfarer and Comacchio MCS1200
Drill Support	Cantilever frame
Drill Pipe	Terracore Geobor-S
Drill Bit	Polycrystalline Diamond (PCD)
Core Barrel	Geobor-S
Drill Fluid	Pure Bore and Water
Initial Borehole Orientation	Vertical

2.4 Measurements During Drilling

Drilling parameters were recorded during the construction of each rotary cored borehole using the Jean Lutz system. The following parameters were recorded:

- Depth;
- Drilling rate;
- Thrust pressure;
- Mud pressure;
- Torque;
- Rotation speed;
- Retaining pressure.

The results are presented graphically on Plates 2.222 to 2.250.

3. In Situ Test Data

3.1 Cone Penetration Tests

3.1.1 Introduction

Cone penetration tests (CPTs) were performed at eight locations using the deck mounted top push CPT equipment and downhole CPT equipment on board the JUB. For both the top push CPT and downhole wireline CPT, cones with a projected area of 10 cm^2 were used for testing.

3.1.1.1 Downhole Wireline Cone Penetration Tests

Following the attachment of a 1.50 m length of Geobor-S, the pushing head crossover and all ancillary equipment required to start the test (depth encoder, depth switch), the CPT tool can be lowered to the bottom of the drill string. At this point the push can begin. For the test to be classed as complete any of the following criteria must be met:

- An increase in inclination of the cone tip by more than 3 degrees;
- Exceeding cone tip resistance of 100 MPa for a 10 cm^2 cone;
- Exceeding a combined tip resistance and Sleeve friction of 100 MPa;
- Exceeding the maximum thrust of the equipment (10 Tonnes);
- Exceeding the maximum capacity of the latching mechanism of 10 tonnes;
- A combination of the above factors;
- Operators' discretion.

3.1.1.2 Practice for Cone Penetration Testing

Cones used in this project were calibrated prior to mobilisation in the Fugro onshore laboratory located in Nootdorp, the Netherlands. Table 3.1 summarises the test numbers, depth ranges and cone used for the tests; Plates 3.1 to 3.40 present the cone calibration certificates.

Further information discussion of the CPT how it works and how it is interpreted is presented in Appendix B.

Table 3.1: Summary of cones used

Exploratory Position Reference	Depth [m BSL]	Cones Used
BH01	4.50	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2663
BH08	56.55	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2662
BH09	9.00 33.71	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2663 CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2658
BH10	50.78	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2658
BH12	42.50	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2658
BH13	30.92	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2663
BH20	59.4	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2663
BH26	36.96	CP10-CF100PB10SN2-P1E1M1-V1-S1 1706-2663
Notes: BSL = Below seabed level		

Table 3.2 summarises the specifications of the CPT equipment used.

Table 3.2: Practice for cone penetration testing

Test Control	
General Procedure	According to ISO 19901-8:2014 (ISO, 2014) Refer to guidance presented in Appendix B
Target Application Class	Class 1 in accordance with ISO 19901-8:2014
Test Termination	Refer to guidance presented in Appendix B
Downhole CPT Apparatus	
Thrust Machine	Nearshore top push CPT unit ID GB20
Reaction Equipment	Drilling Derrick mounted
Push Rod	36 mm diameter
Penetrometer Type	10 cm^2 piezocone
Test Results	
Data Processing and Management	GeoVisual
Water Depth Reference	Lowest Astronomical Tide
Depth Reference Level	Seabed
Depth Correction for Penetrometer Inclination	Yes

3.1.1.3 Test Results

Plates 3.41 to 3.125 show the results of the CPTs. The following plots are presented for CPTs:

- The first plot presents the measured data obtained during the test (q_c, f_s, R_f and u);
- The second plot presents the derived data; total cone resistance (q_t), friction ratio (R_f); pore-water pressure ratio (B_q), and the soil behaviour type;

- The third plot presents parameters derived from the measured data: cone resistance (qc), friction ratio (R_f), undrained shear strength (Cu) and relative density (I_D);
- A summary table presents the zero loads of the cone before and after each test, and the subsequent amount of drift.

3.1.1.4 Discussion of CPT Results

The CPT results obtained during the geotechnical site investigation were generally of good quality and characterised the in situ soil conditions when compared with recovered samples. The hydrostatic offsets measured before the start of each test were monitored to ensure that the measured value was within acceptable limits of the theoretical value.

The on-deck offsets taken before and after each test were monitored to ensure that the cone channels did not drift beyond acceptable limits during the test. Good results were observed at all tested locations. Of the 129 pushes performed 95 satisfied the requirements for Class 1 with 28 Class 2, 2 Class 3 and 4 Not Classified based on the test classifications outlined by ISO 19901-8:2014 (ISO, 2014). A soil behaviour type was produced automatically while processing the data and this was used to aid classification of the data when integrating this information on to the borehole logs.

3.2 Borehole Geophysical Logging

3.2.1 Introduction

Wireline geophysical logging fieldworks were carried out in nine boreholes. The following methods were utilised during the project:

- Acoustic Borehole Imager (ABI) and Natural Gamma (NGR);
- Three Arm Caliper (CAL3);
- P&S-Wave Suspension Logger (PSSL).

For activity details please refer to Table 3.4 and Table 3.11. The equipment was calibrated prior to mobilisation and the certificates are presented on Plates 3.126 to 3.140. The results of the wireline geophysical logging are referenced by type on the plots and presented on Plates 3.141 to 3.277. All data was processed in WellCAD 5.5 software. The data processing steps applied for the different logging methods, are summarised in the appropriate section. Data commentary is provided in Section 3.2.7.

Table 3.3: Practice for wireline logging

Tool: GeoVista CAL3	
Logging Speed	4 metre/minute
Borehole Completion	Open
Resolution	0.01m
ALT ABI-GR	
Logging Speed	1 metre/minute
Borehole Completion	Open (ABI) or Open and cased (NGR)
Resolution	1° radial (ABI), 0.002 m vertical
GeoVista P- & S-Wave Suspension Logger	
Logging Speed	3-4 minutes/station
Borehole Completion	Open
Resolution	1 m (station interval)

Table 3.4: Wireline borehole logging locations

Exploratory Position Reference	Elevation [m LAT]	Logging Date	Casing Shoe S1	Casing Shoe S2	Casing Shoe S3	Casing Shoe S4
BH01	-24.80	10 June 2022	49.80	43.90	32.00	20.00
BH08	-19.40	13 July 2022	56.00	18.30	-	-
BH09	-30.50	19 June 2022	35.30	12.80	3.10	-
BH10	-32.50	02 July 2022	42.90	12.90	5.50	-
BH12	-20.40	23 June 2022	35.60	-	-	-
BH13	-38.10	05 July 2022	35.50	31.00	-	-
BH20	-28.40	09 July 2022	50.10	35.10	20.10	-
BH26	-27.80	04 June 2022	40.00	6.15	-	-
BH28	-28.70	15 July 2022	49.50	38.90	16.30	-
Notes: "-" denotes casing shoe not required						

Table 3.5: Summary of wireline testing

Exploratory Position Reference	ABI Depth From [m]	ABI Depth To [m]	CAL3 Depth From [m]	CAL3 Depth To [m]	NGR Depth From [m]	NGR Depth To [m]	PSSL Depth From [m]	PSSL Depth To [m]
BH01	71.66	43.81	71.93	20.00	70.57	0.00	67.00	21.00
BH08	-	-	33.00	18.00	53.73	0.00	32.00	19.00
BH09	53.73	13.01	54.96	3.21	53.53	0.00	52.00	14.00
BH10	61.60	42.99	61.60	3.84	61.23	0.00	59.00	6.00
BH12	52.20	35.62	52.00	36.10	51.11	0.00	50.00	37.00
BH13	50.60	30.84	50.99	31.50	50.04	0.00	46.00	32.00
BH20	59.25	49.98	59.35	20.60	58.42	0.00	56.00	23.00
BH26	59.10	39.86	58.87	40.50	58.02	37.24	56.00	39.00
BH28	-	-	22.00	16.30	68.20	0.00	-	-
	69.00	49.61	69.00	39.50	-	-	66.00	40.00

Notes: "-" denotes testing not undertaken. ABI = Acoustic Borehole Imager. CAL3= Three Arm Caliper. NGR = Natural Gamma. PSSL = P&S-wave Suspension Logger

Table 3.6: Wireline geophysics logging parameter table and glossary

Logging Method	Tool Mnemonic	Parameter	Unit	Abbreviation on Log
Acoustic Borehole Imager	ABI	Borehole Tilt	deg	Tilt
		Borehole Azimuth	deg	Azimuth
		Easting	m	Easting
		Northing	m	Northing
		Total Vertical Depth	m	TVD
		ABI Amplitude		Amplitude
		ABI Travel Time	µs	Travel Time
		Borehole Radius calculated from ABI Travel Time	mm	Borehole Radius, Radius
		3D ABI log	deg	ABI 3D
		Discontinuity picking	deg	Structure Log
		Fracture Density, depth +-0.5 m interval	counts/m	Fractures
		Corrected discontinuity data (dip and azimuth of structures corrected by borehole tilt and azimuth) - True Structure Log	deg	Tadpole Log
		Natural Gamma	API	Natural Gamma
Three Arm Caliper	CAL3	Borehole Diameter	mm	3 Arm Caliper
	PSSL	P-wave velocity	m/s	Vp (PSL)
		S-wave Velocity	m/s	Vs (PSL)

Logging Method	Tool Mnemonic	Parameter	Unit	Abbreviation on Log
P&S Suspension Logger		Poisson`s Ratio	None	Poisson`s Ratio,

3.2.2 Acoustic Borehole Imaging

Borehole imaging tools provide a scan of the borehole wall which is presented as a 360° unrolled image oriented to Magnetic North or the borehole's high side. A plane intersecting the borehole appear as sinusoidal curves on the unrolled image. The position of the highest or lowest point of the sinus defines the dip direction whilst the amplitude of the sinus is proportional to the dip angle. To calculate true dip and strike of planes, the deviation and diameter of the borehole must be known. This is presented diagrammatically in Figure 3.1.

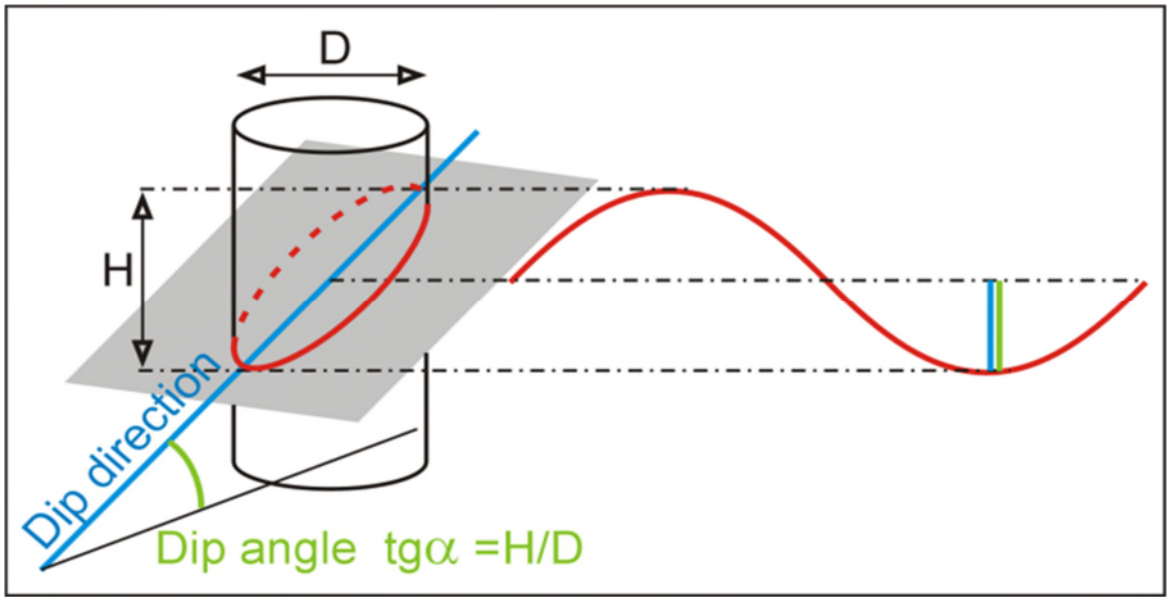

Figure 3.1: Intersecting planes produce ellipses (left) and appear as sinusoidal curves on the unrolled borehole image

Borehole deviation is calculated by the borehole imaging tool's internal orientation units (magnetometer / accelerometer), therefore orientation data in the vicinity of steel casing is biased, azimuth data is interpolated for the cased section. These units measure the borehole orientation with reference to magnetic north; a correction for magnetic declination can be applied during processing.

The core of the ABI is a 1.2 MHz ultrasonic transmitter-receiver head (as shown in Figure 3.2) which rotates at ~10 rps. Travelling up or down hole, the borehole wall is scanned in a spiral which is put together to an unrolled and oriented image. The tool records both amplitude and travel time of the ultrasonic signal reflected by the borehole wall. Contrasts in the amplitude image are the result of differences in acoustic impedance between the borehole fluid (usually drilling mud or water) and the different formations (borehole wall). The travel

time shows differences depending on borehole fluid velocity (usually constant) and borehole diameter. The ABI tool only works in fluid filled boreholes. With known fluid velocity the signal travel time can be converted into distance and therefore an oriented, high resolution 360° borehole caliper can be processed.



Figure 3.2: Acoustic Borehole Imager (ABI).

Open borehole solutions:

- Determination of true dip and strike of discontinuity planes;
- Classification of geological discontinuity planes (bedding, fractures, joints, cleavage, etc.);
- Measurement of true joint apertures;
- Borehole deviation logging;
- High resolution 3D caliper.

Cased borehole solutions:

- Can aid lithological profiling and borehole correlation;
- Clay content (pore space of sediments or fracture zones of hard rock);
- Identification of aquifers and water barriers in clastic succession;
- Identification of potassium-rich rocks (e.g. pegmatites, heavy mineral sands).

3.2.2.1 Data Processing

The following steps were undertaken:

1. Interpolation of bad traces if any were detected;
2. Depth correction and merging of separately measured sections;
3. Processing of image log data (centralisation and normalisation) if necessary;
4. Consistency check with other logs (caliper);
5. Manual discontinuity picking (see Table 3.8);
6. Correcting picked structures for borehole deviation;
7. Fracture density calculation;

8. Water velocity (borehole fluid velocity) calculation using centralised travel time image and mechanical caliper data in casing and unfractured rock;
9. Borehole radius calculation using water velocity and centralised travel time image;
10. Creating 3D borehole view with discontinuity planes;
11. Data visualisation (log, discontinuity table, polar and rose plots).

Table 3.7: Optical (OBI) and Acoustic (ABI) Borehole Imager Discontinuity Classification - Types

Colour	Structure	Description
Red	Major Fracture / Joint - Open	Major fractures are identified by a clearly visible low amplitude sinus in the amplitude image and by a corresponding high value pattern (compared to the surrounding) in the travel time or borehole radius image. The sinus covers the whole borehole circumference with a significant more or less constant vertical aperture. Usually visible on the mechanical caliper logs
Yellow	Minor Fracture / Joint - Open	This type of fracture is visible both on amplitude and travel time image similar to major ones.
Light Blue	Fracture/joint – not further evaluable	Different to major open features the sinuses do not offer the same significant vertical aperture and/or continuity over the whole borehole circumference but show areas with higher amplitude/lower travel time respectively.
Light Green	Bedding / Banding / Foliation / Lamination	These fractures are clearly visible on the amplitude Image over the majority of borehole circumference (low amplitude compared to the surrounding) without producing any significant pattern on the Travel Time/Borehole Radius log.
Grey	Fracture / Joint – infilled	Usually visible on core images or optical images if available. Without core images this classification is used for structures that show similar dip direction and dip on a small vertical scale (distances between the structures of mm to several cm) or to boundaries between two different acoustic amplitude medium (change in acoustic impedance usually means change in lithology)
Magenta	Unclassified	Usually visible on core photos or the optical Image if available. Used when a sinus is filled with different material (different colour on optical image), then the surrounding rock. These features are often not detectable on the acoustic images (no acoustic impedance contrast between the rock and the vein/fracture filling material meaning in a mechanical point of view it is not a discontinuity). Aperture is used.
Dark Blue	Lithological Boundary	Used for structures that cover only parts of the circumference, for sinuses with parts that show small vertical or horizontal displacements between each other and for structures that cannot clearly be differentiated from artificial structures caused by the drilling process.

3.2.3 Three Arm Caliper

Borehole diameter was measured by a 3-Arm mechanical caliper tool (CAL3). Mechanical caliper instruments have spring-loaded arms which are opened at bottom hole depth and read the shape of the borehole as the tool is pulled to surface.

CAL3 consists of 3 arms 120° degrees apart which are connected to each other; it provides one average curve of the borehole diameter and does not work well in inclined boreholes.

Open borehole solutions:

- Presentation of borehole shape;
- Calculation of borehole volume;
- Orientation breakout analysis.

Cased borehole solutions:

- Identification of casing joints.

3.2.3.1 Data Processing

The following steps were undertaken:

1. Interpolation of bad data values if necessary;
2. Depth correction and merging of separately measured sections;
3. Check for consistency with imager data;
4. Data visualisation (log).

3.2.4 PS Logging

The microseismic P & S wave log (Figure 3.3) has a solenoid hammer source at the bottom of the tool which generates a p-wave and a flexural wave within the borehole. The flexural wave is dispersive by nature but the low frequency component of it can be used to estimate shear wave velocity. The incoming signals are recorded by two P & S wave receivers which are separated from the transmitter and from each other by a rubber isolator tube. The tool is operated at defined depths in stationary mode. Each record includes three different elastic waves at both receivers:

- P wave;
- S wave - left sense;
- S wave – right sense.

Additional features:

- The left and right sense S wave records show a 180° phase shift which aids identification;
- The method provides S wave velocities also in soils and “slow” formations (Vs <<1500m/s);
- S waves arrivals may not be identifiable depending on borehole conditions, mainly borehole rugosity.

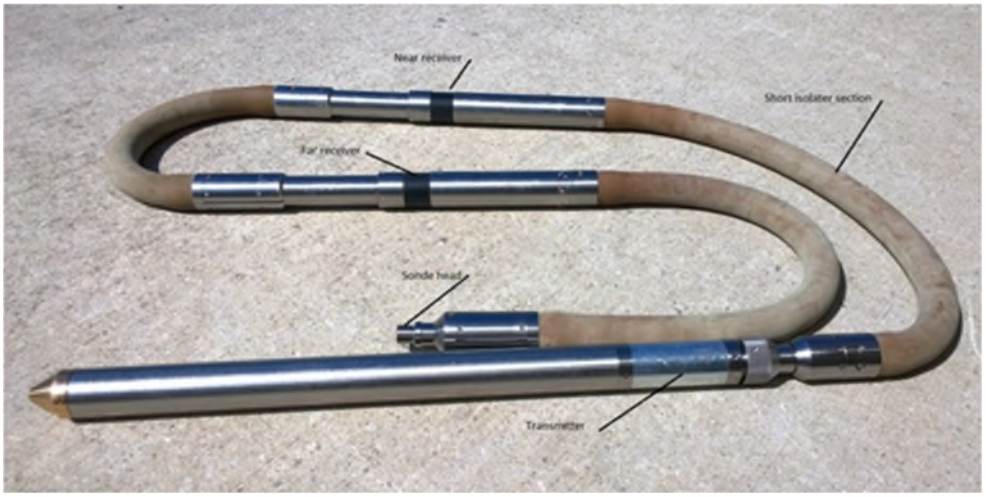

Figure 3.3: PS Logging Tool

Open borehole solutions:

- Velocity of compressional and shear waves;
- Identification of poorly consolidated or fractured zones;
- Calculation of Interval Velocities;
- Calculation of Poisson's Ratio.

PS Logger data processing is time intensive therefore velocities are generally provided with the Draft Report. Tool bottom is 3.5 m deeper than measurement point (midpoint of receiver section), therefore tool requires 3.5 m rathole (1st data point will be 3.5 m above borehole bottom).

3.2.4.1 Data Processing

The following steps were undertaken:

1. Frequency filtering data if necessary;
2. Manual picking of P-wave arrival on near and far receiver wavetrain;
3. Manual picking of S-Wave arrivals on near and far receiver wavetrain;
4. Velocity calculation, data reduction, averaging for each depth point;
5. Consistency check, Quality Control;
6. Data visualisation (log and velocity table).

3.2.5 Natural Gamma Ray Logging

The Natural Gamma Ray Log (NGR) is a passive method that reads the integral gamma radiation of the formation in an energy window of 0.3 to 3.0 MeV. It is registered with a NaJ-crystal and a photo-multiplier, readings are converted from counts per second (cps) into calibrated API units (American Petroleum Institute).

The sources of natural gamma radiation are 40K, 232Th and 238U. Clay shows relatively high gamma readings resulting from 40K in the clay-minerals compared to sand and gravel. Therefore, in sediments aquifers can be distinguished from aquicludes.

Igneous and crystalline rocks with a high content of K-Feldspar (granite, gneiss, etc.) may have extremely high NGR-values.

NGR can be measured in open or cased holes. Logging in casing attenuates the curve, but the shape still gives an indication of lithology. Therefore, the method can be used for lithological correlation between new boreholes and existing wells.

Open borehole solutions:

- Can aid Lithological profiling and borehole correlation;
- Clay content (pore space of sediments or fracture zones of hard rock);
- Identification of aquifers and water barriers in clastic succession;
- Identification of potassium-rich rocks (e.g. pegmatites, heavy mineral sands).

Cased borehole solutions (qualitative only)

- Can aid lithological profiling and borehole correlation;
- Clay content (pore space of sediments or fracture zones of hard rock);
- Identification of aquifers and water barriers in clastic succession;
- Identification of potassium-rich rocks (e.g. pegmatites, heavy mineral sands).

3.2.5.1 Data Processing

The following steps were undertaken:

1. Application of 5 points moving average filter (depending on sampling rate);
2. Depth correction and merging of separately measured sections;
3. Data visualisation (log).

3.2.6 Data Presentation

Depth reference level is mud level. ABI data are presented 1:10 scale, all other data are delivered on a 1:100 scale plot.

3.2.6.1 Acoustic Borehole Imaging Plot

Processed images and picked discontinuities are presented together with verticality data. Borehole radius image has been calculated from the travel time Image using borehole fluid velocity derived from travel times of known caliper depth intervals (using mechanical caliper/radii data in casing and unfractured zones). All image logs are aligned to North as 0°, East as 90°, South as 180° and West as 270°. Discontinuities corrected to borehole deviation are presented as a tadpole plot, 3 Arm caliper data used at each depth point in the calculations. Position of tadpole head on the 0° to 90° scale marks dip angle, tail shows dip direction. Colour of tadpole head represents discontinuity category. Orientation data is

biased in the vicinity of the steel casing as tool uses a three axis magnetometer, discontinuities within 1.50 m of the casing have not been included in the tadpole log, polar and rose plots or the discontinuity table.

3D "wrapped logs" of the acoustic amplitude and the optical image are also presented on the plot. 3 Arm caliper data was used as borehole diameter component. ABI 3D log shows acoustic image as a core from a 0° viewpoint. Observer faces the northern side of the ABI core, having the eastern side on the left, western side on the right hand. A fracture count rate has also been calculated in every 0.1 m, showing the fracture count of a 1 m long depth interval with the displayed depth in the middle (x-0.50 m – x+0.50 m). Bedding/Banding/Foliation/Lineation and Filled Fractures/Joints have not been included.

Discontinuity aperture values should be handled with caution, as according to previous results aperture visible on Travel Time Image is significantly higher than real aperture of the fracture. Reason has not yet been clarified, possibly because acoustic waves are sensitive to level of compactness of rock. Therefore, the damaged zone in close vicinity of an open fault will also show as "aperture" feature in an acoustic point of view.

3.2.6.2 Polar Plot

Directional statistics of borehole deviation corrected discontinuities are presented on a polar plot for the whole borehole. The polar plot contains the southern (lower) hemisphere, equal area (Schmidt) projection of the poles of the discontinuity planes. Colour of the poles represents discontinuity category. A circular grid shows the dip angle of the plane. As poles are perpendicular to planes, radial position of the poles shows the opposite to the discontinuity dip direction.

A counting circle comprising one percent of the total area is used to make density estimates at the nodes of a regular grid. The grid is contoured in units of percent per one percent area. Contours represent standard deviations away from the expected density of a random sample drawn from a standard distribution.

3.2.6.3 Rose Plot

Distribution of azimuth directions of borehole deviation corrected discontinuities are also shown independently on a rose plot.

3.2.6.4 CAL3-NGR-PS Logger Plot

3 Arm caliper (CAL3) and Natural Gamma are presented with the PS Logger data on a 1:100 scale plot.

3.2.7 Data Commentary

Borehole rugosity is low in the bedrock and the structured chalk, usually really high in sand and structureless chalk; both >300 mm cavities and strictures are common, and almost all boreholes collapsed at least once. Borehole deviation is generally around or below 1°, in

BH01 it moves around 2°. Acoustic Image quality is poor in the unconsolidated formations: reflected amplitude is very low due to the weak impedance contrast between the loose sediment and the borehole fluid, and barely any structures are visible. Accordingly client decided not to run ABI tool in top sections in most of the holes. Image quality is good in bedrock. Due to the huge contrast between bedrock and overlying sediment normalized acoustic amplitude image is presented on the plots.

Table 3.8 shows the summary of the directional statistics (polar and rose plots). Plots mainly represent bedrock. Low angle, close to horizontal structures are abundant in half of the holes (BH09, BH10, BH13 and BH26) and a major population of W-NW dipping, 15 to 40° fractures is detectable in 3 holes (BH10, BH12 and BH26).

Table 3.8: Summary of discontinuity directional statistics

Borehole	Dominant Population		Secondary Population		Tertiary Population	
	Direction	Angle [°]	Direction	Angle [°]	Direction	Angle [°]
BH01	NE	10 - 25	SW	30 - 40		
BH09	W - SW	15 – 35	-	0 – 10		
BH10	NE - NW	0 – 15	W - NW	25 – 40		
BH12	NW	15 – 40	SE	35 – 55		
BH13	E - NE	0 – 20	N - NW	40 - 55		
BH20	SE	30 – 40				
BH26	-	0 – 10	W - NW	15 – 25		
BH28	SE	45 - 60	S - SE	20 - 30	E	60 - 80

Average total Natural Gamma response lies in a range of 0-40 API in top section, in some boreholes close to bottom it goes up to 70 API in bedrock.

P&S Logger data is good quality in slow formations (vp<2500 m/s, vs<1200 m/s), moderately good in faster rocks. P-wave velocity moves between 1600-2200 m/s in the loose, unconsolidated sediments and can rise up to 3700 m/s in consolidated rocks, shear velocity moves in the 200-500 m/s range in loose sands and clays but can reaches up to 1900 m/s in fast formations. Poisson`s ratio moves 0.47-0.48 in the top section of the boreholes but decreases to 0.3 in the deeper section in some boreholes.

An upward decreasing trend of velocities and an upward increasing trend of Poisson`s ratio is observable. Table 3.9 summarises the major changes in velocity trends observed in the boreholes.

Table 3.9: Summary changes in velocity trends

Exploratory Position Reference	Above				Depth of trend change	Below			
	NGR [API]	Vp [m/s]	Vs [m/s]	Poisson's Ratio [ν]	[m]	NGR [API]	Vp [m/s]	Vs [m/s]	Poisson's Ratio [ν]
BH01	0 - 30	1600 - 2200	250 - 450	0.47 - 0.50	43.50	20-45	1600-2200	300-600	0.44-0.48
BH08	0 - 30	1600 - 1900	200 - 350	0.48 - 0.50	29.50	0-30	2000-2200	1000-1200	0.44-0.47
BH09	0 - 40	1600 - 2000	200 - 450	0.47 - 0.50	35.00	0-20	1800-2500	450-1000	0.38-0.47
BH10	0 - 45	1600 - 1800	150 - 400	0.49 - 0.50	17.80	0-45	1900-2300	250-650	0.45-0.48
	0 - 45	1900 - 2300	250 - 650	0.45 - 0.48	51.50	0-25	1900-2200	650-1000	0.37-0.45
BH12	0 - 35	1800 - 2000	300 - 450	0.46 - 0.49	42.50	25-70	2200-3500	600-1700	0.38-0.47
BH13	0 - 70	2200 - 2700	350 - 800	0.43 - 0.49	40.00	20-60	3300-3700	1400-1700	0.33-0.40
BH20	0 - 30	1600 - 1800	150 - 500	0.46 - 0.50	50.20	0-20	1600-1800	450-550	0.44-0.46
BH26	35 - 65	2800 - 4000	1200 - 1900	0.24 - 0.40	-	-	-	-	-
BH28	0 - 45	1600 - 1800	250 - 400	0.47 - 0.50	43.00	15-45	1900-2800	450-800	0.43-0.47

3.3 Operational Constraints

3.3.1 Cone Penetration Testing

The in situ testing operations were completed successfully without any significant challenges. However, the tool failed to latch on a number of occasions due to soil cuttings at the bottom of the hole. Where this occurred, the drill string was lifted slightly, and the bottom of the hole flushed. In situ tests were reattempted from the same depths.

Possible cobbles and/or gravel were often encountered downhole, preventing the deployment of CPT equipment in these instances.

During CPT operations at location BH01 there was an electrical fault with the CPT winch; only one CPT push was performed at this location.

Table 3.10 details the operational constraints in chronological order.

Table 3.10: Summary of operational constraints: cone penetration test data

Exploratory Position Reference	Test Number	Description
BH01	CPT_01	Issues with CPT, fault finding and repair. Remove CPT beam due to fault, CPT discontinued until issue resolved, continue operations with continuous sampling. Testing repairs made to winch.
BH09	CPT_07	Oversample of CPT at 15.00 m BSL not required on client instruction.
BH13	CPT_06	CPT_06, not latching, pull out clean off small amount of clay, zero tool and relatch
BH20	CPT_01	CPT_01, CPT not latching, sand piped in S-Geobor, pull tool
BH20	CPT_10	CPT_10, tool de-latched twice.
BH20	CPT_11	CPT_11, tool de-latched once.
BH26	NA	Checking and testing repairs made to CPT winch wire

Notes
CPT = Cone penetration test
BSL = Below seafloor level
NA = Not applicable

3.3.2 Wireline Geophysical Logging

Wireline geophysics operations were completed successfully, although the logging plan had to be adjusted in all boreholes due to numerous borehole collapses and therefore concerns about borehole stability Table 3.11 presents a detailed description of the operational constraints.

A PS Logger was lost in BH20, as the borehole collapsed on the tool and recovery attempts were unsuccessful. Since there was a lot of clay and unconsolidated sands in the boreholes, the general ABI quality is poor in loose sediments due to acoustic energy attenuation, as visible on images recorded in unconsolidated sand and clay. Multiple casing pull backs were required for most of the boreholes due to the risk of borehole collapse. Despite this the

borehole still collapsed multiple times in different boreholes as the casing was pulled back, due to the soft sedimentary rock/soils. The incident report for this event is presented on Plates 10.14 to 10.18.

Table 3.11: Detailed description of operational constraints: wireline geophysical logging

Exploratory Position Reference	Description
BH01	Borehole logged in four sections (casing depths at 49.80 m, 43.90 m, 32.00 m and 20.00 m). ABI acquisition was aborted in top section by client request due to borehole stability concerns and low expected data quality in unconsolidated sediments. Borehole collapsed at 35.70 m when pulling the casing for the third time to log from 43.80 m to 31.90 m (no PSL shots taken at this section).
BH08	Client requested ABI not to be run in the structureless clay, only for it to be run within the casing from 54.00 m to 0.00 m to capture natural gamma data. Casing pulled back to 18.30 m in order to run the PSL in clay section from 33.00 m to 17.00 m. No tools were run above 17.00 m due to risk of borehole collapse in the sand.
BH09	Borehole logged in three sections (casing depths at 35.30 m, 12.80 m and 3.10 m). Borehole collapsed at around 32.80 m after pulling the casing to 12.80 m . Only the caliper was run in the third section (casing depth at 3.10 m) due to borehole collapse
BH10	Borehole logged in four sections (casing depths at 42.90 m, 12.90 m, 5.50 m and 3.30 m). Borehole collapsed at 28.40 m after pulling back the casing to 12.90 m. When pulling back the casing to 5.50 m, the borehole collapsed at 17.00 m.
BH12	Borehole logged in one section (casing depth at 35.60 m). Rig move was prioritised, hence only the one casing pull.
BH13	Borehole logged in two sections (casing depths at 35.50 m and 31.00 m). When pulling back the casing to 28.00 m, the borehole collapsed just below the casing. The casing was then pulled back further to 4.30 m however the borehole collapsed again just below the casing. The borehole was therefore re-drilled and cased to 31.00 m, only cased hole data was acquired above.
BH20	Borehole logged in three sections (casing depths at 50.10 m, 35.10 m and 20.10 m). The borehole collapsed onto the PS logger at 22.50 m when logging the third section. Retrieval attempts were unsuccessful, tool lost.
BH26	Borehole logged in one section (casing depth at 40.00 m). The casing was pulled back to 10m to log the second section however the borehole collapsed at 11.00 m, so wireline logging was aborted on the top section.
BH28	Borehole logged in three sections (casing depths at 49.50 m, 38.90 m and 16.30 m). ABI logging of top 2 sections was aborted by client request due to the expectable low quality in unconsolidated sediments. Borehole collapsed at 22.46 m in section 3 (casing shoe at 16.30 m) after the caliper run.

4. Sampling Data

4.1 Overview

A summary of the samples and sub-samples taken is presented in Table 4.1. It should be noted that some core sub-samples were taken from the thin and/or thick-walled Shelby tubes after extrusion.

All subsamples are detailed on the Plates 4.1 to 4.39. Photography is presented on Plates 4.40 to 4.1 and on Gaia.Books. Proposed laboratory testing programmes are presented on Gaia.Books as part of the digital data deliverables (see Section 7).

Table 4.1: Fieldwork sampling quantities

Sample Type	Quantity
Thin walled (Shelby) samples	31
Thick walled (Shelby) samples	36
Hammer samples	52
Sub-sample Type	
Bulk disturbed samples	955
Small disturbed samples	207
Core samples	451

4.2 Downhole Samples

4.2.1 Thin and Thick walled (Shelby) Push Samples

Thin-walled 3" tubes, were used for sampling where low to medium strength fine-grained soils were expected. In harder soils, thick-walled 3" tubes were used to prevent buckling during sampling.

A core catcher was used with the Shelby tubes in coarse-grained material, to prevent the sample from slipping out of the tube during recovery to deck.

4.2.2 Hammer Samples

Fugro utilised a downhole hammer sampler with a 450mm split spoon sampler when ground conditions were not suitable for Shelby push samples.

The Pilcon Wayfarer winch was utilised to drop the downhole hammer sampler on the winch cable at height to advance the borehole and obtain a sample.

4.2.3 S Geobor Core Samples

A modified version of the Comacchio MC1200 was used to drill core runs using the Geobor-S wireline triple barrel system. For this project core run lengths started with 1m in weathered rock until recovery was above 90%. At 90% recovery core run lengths increased to 1.50 m.

4.3 Operational Constraints

The fieldwork was performed successfully without any major sampling operational issues. The seabed equipment sometimes failed to sample sufficient materials due to the soil conditions being harder than those for which it was designed. Where this occurred, the seabed sampler was lifted and redeployed. Sampling operations were reattempted from specified locations agreed with the Client representative.

Table 4.2 details the operational constraints in respect of the sampling tests in chronological order.

Table 4.2: Summary of operational constraints: sampling

Date	Exploratory Position Reference	Delay Duration [hh:mm]	Description
03 June 2022	BH26	01:42	Core run 23.50 m to 24.50 m, 0.60 m of core slipped. Three attempts to recover core.
04 June 2022	BH26	01:25	Core run from 38.30 m to 39.50 m, core slipped and lodged in the bottom-hole assembly. Two attempts to recover 0.20 m of core run.
07 June 2022	BH01	-	Thick walled Shelby tube push at 13.50 m BSL unable to achieve penetration.
08 June 2022	BH01	-	Thin walled Shelby tube push at 29.00 m BSL damage to shoe
08 June 2022	BH01	-	Thick wall Shelby tube push at 36.50 m BSL, no recovery. Second attempt made with core catcher, no recovery.
09 June 2022	BH01	01:35	Thin walled Shelby tube push at 42.00 m BSL. Unable to delatch tool. Heavy lift winch used to attempt recovery; overshoe parted from tool.
09 June 2022	BH01	01:50	Core run at 52.00 m BSL, core slipped and lodged in casing. Multiple attempts to recover 0.75 m of sample, NCD to clear remaining material.
10 June 2022	BH01	00:40	Core run at 71.50 m BSL, core slipped.
12 June 2022	BH28	-	Thick walled Shelby tube with core catcher push at 4.50 m BSL unable to achieve penetration.
12 June 2022	BH28	-	Thick walled Shelby tube with core catcher push at 5.00 m BSL unable to achieve penetration.

Date	Exploratory Position Reference	Delay Duration [hh:mm]	Description
12 June 2022	BH28	-	Thick walled Shelby tube push at 6.00 m BSL, no recovery. Attempt hammer sample.
13 June 2022	BH28	-	Hammer sample at 6.00 m BSL, no recovery. NCD to clear remaining material.
13 June 2022	BH28	-	Thick walled Shelby tube push at 7.10 m BSL, no recovery. Attempt hammer sample.
13 June 2022	BH28	-	Hammer sample at 7.10 m BSL, no recovery. NCD to clear remaining material.
13 June 2022	BH28	-	Thick wall Shelby tube push at 14.50 m BSL, unable to achieve penetration.
13 June 2022	BH28	-	Hammer sample at 16.50 m BSL, no recovery. Core catcher fingers detached.
13 June 2022	BH28	-	Thin walled Shelby tube push at 21.50 m BSL, damage to shoe.
14 June 2022	BH28	-	Core run from 33.90 m, no recovery
14 June 2022	BH28	-	Thick walled Shelby tube push at 37.00 m BSL, sample was lost during retrieval. Recovered using thick wall with core catcher.
18 June 2022	BH09	-	Thin walled Shelby tube push at 26.50 m BSL, damage to shoe
19 June 2022	BH09	-	Core run from 33.50 m to 34.50 m BSL, core slipped. Second attempt made to recover material, unsuccessful. NCD to clear remaining material.
19 June 2022	BH09	-	Core run from 36.00 m to 37.50 m BSL, 0.40 m of core slipped. Second attempt made to recover material.
19 June 2022	BH09	-	Core run from 39.50 m to 40.50 m BSL, core slipped. Second attempt to recover material.
20 June 2022	BH12	00:30	Continue drilling and sampling ops from 1.00 m. Thick wall with catcher (no recovery).
01 July 2022	BH10	00:20	Thick walled Pushed 0.10 m, cobble in end. Tube damaged. Engineer instructs 1.50 m core run, agreed by Client Rep.
01 July 2022	BH10	-	Thin walled sample. No recovery, damaged tube.
04 July 2022	BH13	00:40	Thick walled sample with catcher, hole collapsing, pump geo back down to depth, shoot push sampler, wait to land then pull back, latch then push

Notes:
NCD = Non-coring device
BSL = Below seabed level

4.4 Practice for Sample Handling

Where cable percussion samples were taken, immediately after recovery, disturbed sub samples were taken and placed in bags for photography, visual description, and subsampling.

Where hammer samples were taken, immediately after recovery, the split spoon was opened to allow photography, visual description, and subsampling.

Where Shelby tube samples were taken, immediately after recovery, were extruded for photography, visual description, and sampling.

Full visual descriptions of recovered samples were made in accordance with BS 5930:2015+A1:2020 (BSI, 2020) and BS EN ISO 14688-1:2018 (BSI, 2018).

Based on the visual description basic index tests were performed, including moisture content determination and bulk and dry density determination, thermal conductivity testing and shear strength by torvane and pocket penetrometer.

Where suitable, undisturbed core sub samples were also taken. Core samples were preserved by wrapping in cling film, aluminium foil, and cling film again, before being hermetically sealed in paraffin wax. The sealed samples were then wrapped in bubble wrap and placed in wooden core boxes with foam packing to mitigate against damage during transport. The boxes were stored between 5°- 15°C while awaiting transport to Fugro's Consett laboratory.

Where Geobor-S core runs were taken, once recovered to deck, the core barrel was opened, the sample removed, and the liner split longitudinally to expose the soil or rock core for cleaning, photography, visual description, and sampling.

Where rock was encountered, based on the visual description basic index tests were performed, including point load index strength determination and bulk density determination. Full visual descriptions of recovered core were made in accordance with BS 5930:2015+A1:2020 (BSI, 2020) and BS EN ISO 14689-1:2018 (BSI, 2018).

Rock core sub samples were wrapped in cling film, aluminium foil, and cling film, before being hermetically sealed in wax. The sealed samples were then wrapped in bubble wrap and placed in wooden core boxes with foam packing to mitigate against damage during transport. The boxes were stored between 5° and 15°C while awaiting transport to Fugro's Consett laboratory.

Table 4.3 summarises the procedures for sample handling.

Table 4.3: Practice for sample handling

Stage	Process	Description
Initial sample handling	Push samples	■ Detachment of sample tube from thin walled (Shelby) sampler, thick walled sampler ■ Transfer to site laboratory
	Rock core samples	■ Remove liner from core barrel

Stage	Process	Description
		■ Transfer to site laboratory
Site geotechnical laboratory	Push samples	■ Extrusion of sample from sample tube ■ Measurement of recovery ■ Photograph of the sample ■ Visual geotechnical description of the sample ■ Soil testing where appropriate (e.g. water content, unit weight, pocket penetrometer, torvane, reaction to 10 % hydrochloric acid and unconsolidated undrained triaxial)
	Rock core samples	■ Measurement of recovery ■ Photograph of the sample ■ Visual geotechnical description of the sample ■ Rock testing where appropriate (e.g. point load index and density determination)
Sample protection	Packaging of disturbed material (bag subsamples)	■ Disturbed material packed in double bulk bags ■ Label added to each bag
	Packaging of undisturbed material (wax subsamples)	■ Wrapped in cling film (label added) ■ Wrapped in aluminium foil ■ Wrapped in second layer of cling film ■ Inserted in cardboard tube (label added) ■ Wax added to seal the sample in the tube
	Packaging of unsampled core	■ Returned to Geobor-S core liner ■ Foam tubing added between unsampled sections to prevent movement ■ Wrapped in layflat and end caps added ■ Sealed with duct tape ■ Returned to wooden core box
Sample transport	NA	■ Samples packed into plastic crates and strapped to a pallet ■ Wooden core boxes strapped to a pallet
Notes NA = Not applicable		

5. Laboratory Test Data

5.1 Introduction

Laboratory tests were generally carried out in accordance with the standards listed in Appendix D. The results relate only to the samples tested and are considered to be representative of those samples. The proposed laboratory testing schedules for each borehole are provided digitally on Gaia.Books.

5.2 Index Laboratory Tests

Basic index laboratory tests performed offshore on soils obtained during the site investigation included soil and rock description, water content, bulk and dry density, pocket penetrometer (PP), torvane (TV) and point load test.

5.3 Water Content and Wet and Dry Density Determination

Water content (w) and bulk density (ρ) were measured on representative samples from the investigated locations. The dry density (ρ_d) was then inferred from the measured ρ and w content values. The summary of laboratory test results sheets (Plates 5.1 to 2.293) present tables showing the individual test results. The results are also presented on the borehole logs in Section 6.

5.4 Index Soil Strength

Pocket penetrometer (PP) and Torvane (TV) tests were performed on selected clay samples. The geotechnical logs (Plates 6.2 to 6.412) present the individual test results graphically.

Index s_u for cohesive soil samples was measured using PP and TV tests. The results shows good agreement with s_u derived from CPT data using cone factor values (N_{kt}) of 15 and 20. There is some variation in the PP and TV results, it is thought this is due to the presence of gravel and/or sand pockets within the samples.

5.5 Unconsolidated Undrained Triaxial Tests

Unconsolidated undrained triaxial (UU) tests were performed offshore. Plates 5.175 to 5.240 present the individual results.

Failure was taken at 20 % axial strain unless the deviator stress peaked at a lower strain. The UU results are generally considered representative of the soils tested and agree well with the full range of index (PP and TV) tests, and with the s_u inferred from CPT data using cone factor values (N_{kt}) of 15 and 20.

5.6 Rock Density Determination Test

Density determinations were measured on were measured on representative samples from the investigated locations. The summary of laboratory test results sheets (Plates 5.241 to 5.267) present tables showing the individual test results.

5.7 Point Load Test

Point load tests were performed on selected rock samples. The summary of laboratory test results sheets (Plates 5.268 to 5.292) present tables showing the individual test results. Values of Is_{50} are also plotted on the BH log, after the onshore laboratory testing is complete the Is_{50} values will be correlated to a UCS strength. This will be detailed in the Part B report.

5.8 Thermal Resistivity

Thermal resistivity tests were performed on selected samples recovered within three metres of seabed level or three metres below mobile sand if mobile sands present in the area. The summary of laboratory test results sheet (Plate 5.293) present a table showing the individual test results.

6. Geotechnical Descriptions and Profiles

6.1 Introduction

Geotechnical logs based on laboratory test results and in situ test data are presented in this section. The logs indicate measured and inferred:

- Soil and rock layering, including classifications of undrained shear strength (s_u) in fine-grained cohesive soils;
- Measured and derived parameters including undrained shear strength (s_u) values, unit weight (γ), water content, cone resistance (q_t), friction ratio (R_f), pore pressure ratio (B_q) and the soil behaviour type; cone resistance (q_c), friction ratio (R_f), undrained shear strength (C_u) and relative density (I_D);
- Sample and in situ test depths.

Plate 6.1 explains the symbols and terms used in the geotechnical logs. The symbology for the sampling and testing is presented on the borehole logs.

6.2 Interpretation of Undrained Shear Strength from Cone Penetration Tests

In fine-grained cohesive (clay) soils, s_u was interpreted from CPT data using the relationship in Equation 6.1.

$$s_u = q_n / N_{kt}$$

Equation 6.1

Where:

s_u = Inferred undrained shear strength [kPa]
q_n = Net cone resistance [kPa]
N_{kt} = Empirical factor relating cone resistance to undrained shear strength [-]

6.3 Interpretation of Relative Density from Cone Penetration Tests

The D_r of coarse-grained cohesionless (sand) soils was estimated using the relationship proposed by Jamiolkowski et al. (2003) and presented in Equations 6.2 and 6.3.

$$I_D(dry) = \frac{1}{0.0296} \cdot ln\left[q_c \Big/ 2.494 \cdot \left[\frac{\sigma'_{v0} \cdot \left[\frac{1 + 2 \cdot K_0}{3}\right]}{100} \right]^{0.46} \right]$$

Equation 6.2

$$I_D(saturated) = \left[\frac{-1.87 + 2.32 \cdot ln \frac{1000 \cdot q_c}{[100 \cdot \sigma'_{v0}]^{0.5}}}{100} + 1 \right] \cdot I_D(dry)$$

Equation 6.3

Where:

$D_r(dry)$ = Estimated dry relative density [%]
$D_r(saturated)$ = Estimated saturated relative density [%]
q_c = Measured cone resistance [MPa]
σ'_{v0} = Vertical effective overburden stress [kPa]
K_0 = Coefficient of lateral earth pressure

The sensitivity of inferred relative density to changes in estimated horizontal stress can be evaluated using Jamiolkowski et al.'s (2003) chart, which presents a relationship between D_r, q_c and mean effective stress. Values of K_0 of [0.5] and [2.0] were used to estimate the saturated D_r presented in the borehole logs

6.4 Discussion of Results

Plates 6.2 to 6.412 present geotechnical logs for the investigated locations. The soil profiles shown are based on analysed CPT data, visual descriptions of recovered samples, and the results from the offshore laboratory testing.

Soil and rock descriptions in this report are based on BS 5930:2015+A1:2020 (BSI, 2020), BS EN ISO 14688-1:2018 (BSI, 2018) and BS EN ISO 14689-1:2018 (BSI, 2018). The limits of consistency adopted in predominantly cohesive soils are based on the recommendations of BS 5930:2015+A1:2020 (BSI, 2020), and in predominantly coarse-grained soils on those of Lambe and Whitman (1969).

Consistency was assessed in the field in accordance with BS EN ISO 14688-1:2018 (BSI, 2018) and BS 5930:2015+A1:2020 (BSI, 2020). Consistency and s_u of the soil are not directly comparable; large differences between the two can be due to multiple factors, including soil fabric, sample quality, and moisture content.

6.5 Summary of Geological Conditions

Table 6.1 summarises the geological strata encountered. Further discussion of this will be discussed in the ISO Part 2 report following the completion of the laboratory testing programme..

The British Geological Survey (BGS) describe the encountered site geology as the following:

The Surface Sands Formation as dominantly sands, with subordinate mud, peat and some basal lag gravel, together with a rich fossil assemblage of present day species (BGS 1990).

The Western Irish Sea Formation is described as a laterally variable sand and gravel formation which is up to 25 m thick and overlies either the Cardigan Bay Formation or bedrock (BGS 1990).

The Cardigan Bay Formation is described as a laterally extensive formation up to 55 m thick comprising structureless glacial till with evidence of reworking (BGS 1990).

The Lower Palaeozoic Rocks (Undifferentiated) are described as a range of lithologies such as a grey feldspathic sandstone, a grey and purple siltstone and black silty mudstone (BGS 1982).

Table 6.1: Summary of geological strata encountered.

Formation	Minimum Top Depth [m BSL]	Maximum Base Depth [m BSL]
Surface Sands Formation	0.00	27.00
Western Irish Sea Formation	0.00	17.05
Cardigan Bay Formation	0.00	75.00
Lower Palaeozoic Rocks (Undifferentiated)	28.40	69.50

7. Digital Data Deliverables and Previous Reports

7.1 Introduction

Digital data to accompany the information presented within this report are listed in Table 7.1.

Table 7.1: Summary of digital data

Digital Data	Gaia Books Location	Data Type
Daily Progress Report	DPRs	PDF
Driller's Logs	Site Data	PDF
Jean Lutz	Exploratory Hole Records	PDF
Sample/ core Photographs	Core Photos	JPEG
Lab schedule	Lab Interactions	Microsoft Excel Workbook
Measured CPT Data	In Situ Tests	PDF, CSV
CPT Application Class Summary	In Situ Tests	PDF
Wireline Geophysics - Caliper + PS	Geophysics Documents	PDF
Wireline Geophysics – ABI	Geophysics Documents	PDF
Preliminary Borehole Log	Exploratory Hole Records	PDF
AGS Data	Exploratory Hole Records	AGS
Mean Position Report	Surveying Documents	PDF
Notes: Gaia.Books F186642 - Client Delivery - Home (sharepoint.com)		

7.2 List of Reports

Previous reports completed for the Arklow Bank Wind Park are listed below:

- Fugro Limited (2000). Offshore Windfarm Development Arklow Bank, Irish Sea Geotechnical Site Investigation Laboratory and In-Situ Report and Appendices;
- Seacore (2002). Arklow Bank Wind Park, Phase 1. Geophysical Interim Report;
- Geoquip Marine (2020). Arklow Bank Wind Park, Phase 2. Preliminary Geotechnical Site Investigation Report and Associated Information for BH02 and BH14;
- Alpha Marine (2019). Arklow Bank Wind Park, Phase 2. Geophysical Survey Results and Operations Report with associated data deliverables (MBES, SSS, MAG, SBP) and charts covering Lease Area and Export Cable Routes;
- Cathie (2018). Geological and Geotechnical Desk Study Report;
- Partrac Sediment Mobility Documents.

8. Log of Activities

8.1 Log of Activities Overview

The fieldwork was performed from 20 May to 19 July 2022. Plates 8.1 to 8.278 present the individual daily progress reports (DPRs).

The DPRs present an hourly record of the activities, the personnel onboard per day and daily record of the wind and sea state, and any HSSE events. Table 8.1 presents a summary of the daily progress reports.

Table 8.1: Daily progress report – geotechnical scope activity time summary

Activity	Duration [hh:mm]
Cable Percussive sample	04:00
Post-Move Prep	17:43
Pre-Move Prep	40:35
MMO Pre-Start Watch	01:25
DEME - Vessel Operations	98:05
Geophysics - Additional Casing Pull	05:30
Geophysics - 1st Casing Pull	03:25
Fuel up/Wash Down/Break	53:51
Geobor Non-Coring Device (NCD)	129:05
Fugro Downtime	03:05
Advance/Washbore 7" casing	10:50
Shift Handover Talk	22:53
Offshore Resupply	02:15
Fugro Downtime – Breakdown	12:20
Neptune arrival to Falmouth	17:35
Mobilisation	208:25
Drill and Cantilever - Deconstruct	14:50
Drill and Cantilever - Reconstruct	21:00
Transit between exploratory positions	13:20
Transit from Falmouth to Site	44:45
Transit from Site to Falmouth	39:30
Run-in Conductor Casing	22:25
Vibrohammer Operations	09:05
Run-in 7" Casing	15:32
Run-in Geobor Casing	06:45
Push Sampling	105:46

Activity	Duration [hh:mm]
Downhole Hammer Sampling	18:34
Geobor Over-Coring of Test	09:05
Geobor Coring	99:25
Cone Penetration Testing Operations	64:06
Wireline Geophysics	63:20
Trip-out Geobor Casing	05:50
Trip-out 7" Casing	11:25
Trip-out Conductor Casing	15:15
Offshore Crew Change	02:45
Waiting on Weather - Wind speed - drilling operations	92:50
Standby Current Speed - Vessel Move	05:15
Standby Current Speed – Casing	31:50
Standby Wave Height - Vessel Move	34:45
MMO Sighting	00:20
Demobilisation	60:45

8.2 Operational Constraints

Table 8.2 lists the operational constraints that resulted in downtime.

Table 8.2: Summary of operational constraints: operational downtime

Date	Downtime Incurred [hh:mm]	Description
03 June 2022	00:15	Stop operations while barge stabilises
03 June 2022	00:30	Stop operations for lifting of supplies onboard
03 June 2022	00:50	Standby for marine mammal observer sighting
03 June 2022	00:20	Stop operations while barge stabilises
03 June 2022	00:20	Waiting on client decision
08 June 2022	01:45	Stop operations due to DEME crew transfer
08 June 2022	00:20	Stop operations due to DEME crew transfer
10 June 2022	12:25	Waiting on weather unable to move rig due to adverse weather.
11 June 2022	01:35	Stop operations due to crew transfer
13 June 2022	00:10	Stop operations while barge stabilises
14 June 2022	01:35	Stop operations for lifting of replacement CPT winch onboard, and medevac of injured crew member
16 June 2022	01:10	Waiting on weather wind above working limits
17 June 2022	05:25	Waiting on weather wind above working limits

Date	Downtime Incurred [hh:mm]	Description
23 June 2022	08:00	Waiting on weather. Informed by the bridge wind speed above limits for craning operations and to assemble 20" casing
24 June 2022	04:54	Waiting for slack water for deploying conductor casing
24 June 2022	04:24	Waiting on weather current within limits, wind on limits, HS of 1.0 - 1.1m which is above limits forecast is a rising forecast; decision is to not attempt to deploy conductor casing on this slack
24 June 2022	11:48	Waiting on weather to deploy 20" casing
25 June 2022	11:48	Waiting on weather
25 June 2022	06:30	Waiting on weather deploy casing
25 June 2022	04:30	Waiting on weather over barge limits, (force 9) deck closed
25 June 2022	00:48	Waiting on weather
25 June 2022	11:48	Waiting on weather
26 June 2022	02:00	Waiting on weather to deploy casing
26 June 2022	03:24	Waiting on weather
26 June 2022	00:30	Waiting on weather. Toolbox talk on casing installation, permit to drill in place, waiting on current
27 June 2022	01:48	Waiting for slack water for pulling out conductor casing to deck
27 June 2022	01:18	Fugro stance is that we bump over or move to another location. Waiting on client's decision on how to proceed
27 June 2022	05:00	Client agrees to bump over. Waiting on weather window to bump across to new co-ordinates
27 June 2022	11:48	Waiting on weather before moving to next location
28 June 2022	06:12	Wind above 30 m/s. Above operational limits
28 June 2022	05:18	Wait on weather deck open, weather still above working / moving limits
28 June 2022	05:30	Waiting on weather before moving to BH 10, check all sea-fastenings
28 June 2022	01:30	Waiting on slack water to move
29 June 2022	00:36	Lightning sighted, all operations cease until 30 mins after last sighting
30 June 2022	00:24	DEME have a covid case onboard, captain covid testing all personnel
30 June 2022	00:24	COVID-19 testing
01 July 2022	00:15	Barge loading legs and levelling
01 July 2022	00:15	Rig settled, jack up 0.2m. Toolbox Talk on drilling operations
01 July 2022	00:15	Waiting on clearance from marine mammal observer to begin drilling
01 July 2022	00:20	Jack rig 0.25m
02 July 2022	03:25	Waiting for slack water for pulling conductor casing
03 July 2022	00:25	Waiting for slack for running in Conductor casing

Date	Downtime Incurred [hh:mm]	Description
04 July 2022	00:20	Marine mammal observer has spotted a dolphin waiting on permission to resume drilling operations
05 July 2022	00:55	Stop drilling ops to conduct crew transfer. 1 x pax off using Deme frog lift off luggage
06 July 2022	00:20	Waiting on clearance from marine mammal observer to begin drilling operations
08 July 2022	00:25	Muster drill then toolbox talk on drilling operations
10 July 2022	00:40	Waiting on slack water begin seafastening.
10 July 2022	01:15	Waiting on slack water

9. Contractual Agreements

Table 9.1 summarises the contractual arrangements for the companies involved in the site investigation.

Table 9.1: Summary of contractual arrangements

Company	Role	Responsibility
Sure Partners Limited	Client	■ Project commissioning ■ Provision of locations ■ Contract management
Fugro GeoServices Limited (Fugro)	Main contractor (contract holder)	Project management including: ■ Offshore project management ■ Offshore geotechnical testing ■ Offshore laboratory test processing ■ Data analysis and reporting ■ Onshore laboratory scheduling ■ Testing and reporting ■ Provision of offshore staff ■ Provision of offshore drilling and testing equipment
DEME Group	Vessel Charter	■ Provision of jack-up barge and crew ■ Provision of tug and crew transfer vessels
Alpha Marine	Crew Transfer Vessel	■ Provision of crew transfer vessel and crew

10. Health, Safety, Security and Environment

The health, safety, security, and environment (HSSE) performance during the geotechnical site investigation was generally good. A total of 52 people from Fugro and the Client contributed to the safe performance of 17709 hours of fieldwork on the DEME Neptune.

Sixty seven HSSE observation cards (HOC) were completed, comprising minor issues and suggested improvements to the vessel, as well as recognition of safe acts observed on deck.

There was an initial HSSE meeting at the kick-off meeting. At each shift change, a Toolbox Talk was held discussing health and safety (HSE), expected weather conditions, work completed on the previous shift and the next planned work for the oncoming shift were all discussed. Further, any key information was relayed at this time. From there, the individual departments then had handovers and relayed the information to everyone on shift.

Table 10.1 lists the HSSE statistics for the geotechnical site investigation.

Table 10.1: Health, safety, security and environment statistics

Activity	Total Number
Tool Box Talk / POWRA	154
Environmental Incident	0
Shift Handover Talk	117
Permit to Work	182
Mobilisation Induction	27
Accident/Incident	4
HOC Cards	67
Safety Drills	4
Near miss	0
Equipment Damage	3
Audits / Inspections	3
Daily Safety Sweep	24
Shift Task Briefing	59
Vessel Induction	35
Project Induction	44
Safety Stand-Down	0

Notes:
HOC = Hazard Observation Card
POWRA = Point of Work Risk Assessment

10.1 Incident Report – Personnel Hand Injury

On 14 June during routine maintenance works onboard the JUB an operative trapped a finger under a ventilation flap. This resulted in superficial wounds and a restriction in further activities, Plates 10.1 to 10.11 present the report.

10.2 Incident Report – Vessel Void Venting

On 19 June during an inspection of the vessel at the end of demobilisation works a surveyor noticed that fumes were not being vented externally due to a malfunctioning hose. The issue was resolved on the same day and the vessel off hired. Plate 10.12 presents the report.

10.3 Incident Report – Cone Penetration Test Equipment Fault

On 4 June an intermittent fault was identified with the Downhole CPT Tool where it lost connection whilst lowering down the Geobor-S casing but reconnected and continued to work as normal when latched into the casing. This resulted in 10 days of CPT down time whilst the winch was swapped. Plate 10.13 presents the report.

10.4 Incident Report – Loss of Geophysical Test Equipment

On 9 July BH20 collapsed onto the PS logger at 22.50 m. The PS logger tool was lowered down to 40.00 m to take it's recording at this depth before coming up 1.00 m at a time to take subsequent recordings. When coming up from 23.00 m to 22.00 m, the tool got stuck as the borehole collapsed onto the tool. This resulted in lost equipment and a rental was required to continue works. Plate 10.14 to 10.18 presents the report.

11. References

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12. Symbols and Terms

Every effort is made to avoid duplication or inconsistency in the use of symbols and terms in this report. However, this is not always possible as some different terms are commonly represented by the same symbol; similarly, some terms have multiple representations.

For example, I_p and PI both mean plasticity index, and I_L and LI both mean liquidity index, while a can mean both acceleration and net area ratio of cone penetrometer, depending on the context.

Table 12.1 presents symbols and terms that may be used in this report.

Table 12.1: Symbols and terms

Symbol	Unit	Full Term or Definition
General		
A	m^2	Area
B	m	Width
D	m	Diameter
d	m	Depth
h	m	Height or thickness
h_{sf}	m	Height of reference point above seafloor
i	-	Inclination
L	m	Length
ln	-	Natural logarithm
log	-	Logarithm base 10
m	kg	Mass
t	s	Time
V	m^3	Volume
v	m/s	Velocity
W	kN	Weight
w or MC	%	Moisture content
z	m	Penetration or depth below reference level (usually ground surface) or height above seafloor for drilling mode in situ probe zero reference readings
Cone Penetration Test		
A_c	mm^2	Cross-sectional projected area of the cone
A_n	mm^2	Cross-sectional area of load cell or shaft
A_s	mm^2	Surface area of friction sleeve
a	-	Net area ratio of the cone penetrometer

Symbol	Unit	Full Term or Definition
B_q	-	Pore pressure ratio
$\Delta_{u1}\Delta_{u2}\Delta_{u3}$	MPa	Excess pore pressure at filter locations 1, 2 and 3
F_r	%	Normalised friction ratio [= f_t/q_n]
f_s	MPa	Sleeve friction or measured sleeve friction
f_t	MPa	Measured sleeve friction corrected for pore pressures effects
i	°	Inclination
K	-	Adjustment factor for ratio of pore pressure at u_1 to u_2 location
l	m	Penetration length
N_c	-	Cone factor between q_c and s_u or c_u
N_k	-	Cone factor between q_n and s_u or c_u
Q_t	-	Normalised cone resistance [= q_n/σ'_{v0}]
q_c	MPa	Cone resistance or measured cone resistance
q_n	MPa	Net cone resistance
q_t	MPa	Corrected cone resistance (i.e. total cone resistance) or cone penetration resistance corrected for pore water pressure effects
R_f	%	Friction ratio
R_{ft}	%	Corrected friction ratio [= f_s/q_t or f_t/q_t]
R_{ftn}	%	Net friction ratio
U	-	Normalised excess pore pressure
u	MPa	Pore pressure
u_0	MPa	In situ pore pressure
u_1, u_2, u_3	MPa	Pore pressure measured at locations 1, 2 and 3
u_i	MPa	Measured pore pressure at the start of the dissipation test
u_t	MPa	Measured pore pressure at time t during a dissipation test
α	-	Ratio of the cone shaft to the area of the cone face
β	-	Pore-water pressure correction factor (CPTu)
Strength of Soil		
$s_u$or c_u	kPa	Undrained shear strength or undrained (undisturbed) shear strength of soil
Geophysical Test		
ABI		Acoustic Borehole Imager
CAL3		Three Arm Caliper
PSSL		P-wave and S-wave suspension Logging
°	degrees	Borehole tilt or borehole azimuth
µs	microsecond	ABI travel time
API	-	American Petroleum Institute unit. Unit of radioactivity.
Vp	m/s	P-wave velocity

Symbol	Unit	Full Term or Definition
Vs	m/s	S-wave velocity
ν	-	Poisson's Ratio
Notes Hyphen (-) in Unit column means no unit applies Single prime (') applies to effective stress		

List of Plates

1. Project Information

2. Drilling Data

3. In Situ Data

4. Sampling Data

5. Laboratory Test Data

6. Geotechnical Descriptions and Profiles

7. Digital Data Deliverables and Previous Reports

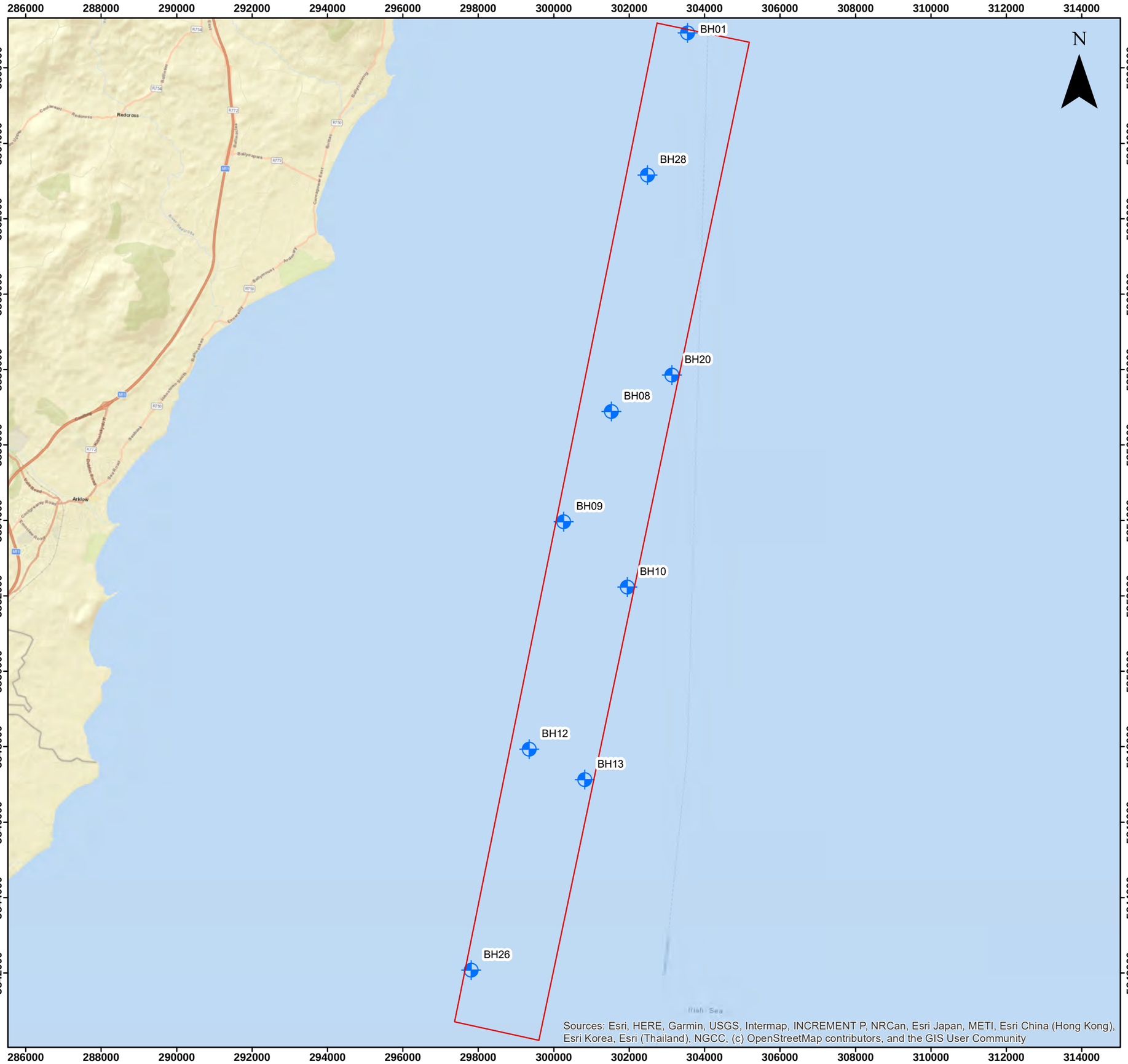
8. Log of Activities

9. Contractual Agreements

10. Health, Safety, Security and Environment

1. Project Information

Title	Plate No.
General Location Plan	1.1



Location



Scale: 1:1,200,000

0 10 20 40 60 80 Kilometers

Legend

- Site Boundary
- **Boreholes**
- Rotary Cored

Rev.	Date	Description	Initials
0	02/08/2022	Draft Issue	LGD

Scale: 1:100,000

0 1 2 4 6 8 Kilometers

Coordinate System

WGS 1984 UTM Zone 30N

Client

Sure Partners Limited
Red Oak South South County Business Park,
Leopardstown,Dublin 18,
Dublin D18 W688, Ireland
www.sserenewables.com

Consultant

Fugro GeoServices Limited
Fugro House, Hithercroft Road, Wallingford,
Oxfordshire, OX10 9RB, United Kingdom
Registered in England No. 1284352
VAT No. GB 133 1704 09
www.fugro.com

Project Title

Arklow Bank Wind Park
Geotechnical Borehole Survey 2022

Figure Title

Exploratory Positions Location Plan

Figure Number

Plate 1.1

Drawn By	Checked By	Issued On	Project No.	Sheet Size	Rev.
LGD	JD	02/08/2022	F186642	A3	0

2. Drilling Data

Title	Plate No.
Drilling Data	2.1 to 2.221
Measurement While Drilling Data	2.222 to 2.250

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					0.00					0.00	0.00	0.00					
07:00	HSSEQ	Daily Inspections																	
07:25	Move and Set Up	Set up Rig																	
10:25	Drilling	Add/Remove Casing																	
12:45	Drilling	Rotary Open Hole	RO	PCD	42.10	16.30	0.00		178	178		0.00	1.00	1.00	15	0.0		0.00	
13:26	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	1.00		178	178		1.00	2.00	1.00	20	0.0		0.00	
14:15	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	2.00		178	178		2.00	2.50	0.50	9	0.0		0.00	
14:55	Drilling	Rotary Open Hole	RO	PCD	42.10	16.00	2.50		178	178		2.50	3.00	0.50	15	0.0		0.00	
15:10	Move and Set Up	Moving Equipment																	
15:30	Drilling	Add/Remove Casing																	
16:01	Drilling	Rotary Open Hole	RO	PCD	42.10	15.80	3.00		146	146		3.00	3.00	0.00	11	100.0	Grey	0.00	
17:20	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	3.00		146	146		3.00	3.50	0.50	18	100.0	Grey	0.00	
18:00	Drilling	Rotary Open Hole	RO	PCD	42.10	15.60	3.50		146	146		3.50	4.50	1.00	13	100.0	Grey	0.00	
18:30	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	4.50		146	146		4.50	5.00	0.50	14	100.0	Grey	0.00	
19:00	Shift	End					4.50					5.00	0.00	-5.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 3.00 - 4.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Plate 2.1

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 3.00 - 4.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	0.00	1.00	1	0	350	0.00	✓
PS	1.00	2.00	2	0	700	1.00	✓
PS	2.00	2.10	3	0	100	2.00	✓
PS	2.50	2.70	4	0	40	2.50	✓
PS	3.50	4.50	5	0	370	3.50	✓
PS	4.50	5.00	6	0	50	4.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 3.00 - 4.50m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Monday 2022-06-06

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					5.00					0.00	0.00	0.00					
19:35	Drilling	Rotary Open Hole	RO	PCD	42.10	16.30	5.50		146	146		5.00	5.50	0.50	9	0.0	Clear	0.00	
20:25	Drilling	Rotary Open Hole	RO	PCD	42.10	16.30	6.50		146	146		5.50	6.50	1.00	11	0.0	Clear	0.00	
21:15	Drilling	Rotary Open Hole	RO	PCD	42.10	16.40	7.00		146	146		6.50	7.00	0.50	8	0.0	Clear	0.00	
22:10	Drilling	Rotary Open Hole	RO	PCD	42.10	16.50	8.00		146	146		7.00	8.00	1.00	12	0.0	Clear	0.00	
23:15	Drilling	Rotary Open Hole	RO	PCD	42.10	16.50	9.00		146	146		8.00	9.00	1.00	10	0.0	Clear	0.00	
01:55	Drilling	Rotary Open Hole	RO	PCD	42.10	16.20	9.50		146	146		9.00	9.50	0.50	8	100.0	Brown	0.00	
02:20	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	10.00		146	146		9.50	10.00	0.50	7	100.0	Brown	0.00	
03:05	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	11.00		146	146		10.00	11.00	1.00	8	100.0	Grey	0.00	
03:45	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	12.00		146	146		11.00	12.00	1.00	8	100.0	Grey	0.00	
04:20	Drilling	Rotary Open Hole	RO	PCD	42.10	16.00	13.00		146	146		12.00	13.00	1.00	7	100.0	Grey	0.00	
04:30	Drilling	Rotary Open Hole	RO	PCD	42.10	16.00	13.50		146	146		13.00	13.50	0.50	6	100.0	Grey	0.00	
05:59	Drilling	Rotary Open Hole	RO	PCD	42.10	15.80	14.40		146	146		13.50	14.40	0.90	6	100.0	Grey	0.00	
06:51	Shift	End					14.40					14.40	14.40	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

All push samples using thick walled shelby with metal catcher spring.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

All push samples using thick walled shelby with metal catcher spring.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-07 06:59:41 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	5.00	5.50	7		450	5.50	✓
P	5.50	6.30	8		750	6.30	✓
P	6.50	6.70	9		150	6.70	✓
P	7.00	8.00	10		800	8.00	✓
P	8.00	9.00	11		650	9.00	✓
P	9.00	9.50	12		500	9.50	✓
P	9.50	10.00	13		500	10.00	✓
P	10.00	11.00	14		800	11.00	✓
P	11.00	12.00	15		800	12.00	✓
P	12.00	12.90	16		850	12.90	✓
P	13.00	13.50	17		400	13.50	✓
P#	13.50	13.50	18			13.50	✓
H	13.50	13.90	19	100	350	13.50	✓
H	14.00	14.40	20	100	400	14.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

All push samples using thick walled shelby with metal catcher spring.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-07 06:59:42 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Monday 2022-06-06

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					14.00					0.00	0.00	0.00					
07:35	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	14.00		146	146		14.00	14.50	0.50	5	100.0	Grey	0.00	
08:22	Drilling	Rotary Open Hole	RO	PCD	42.10	15.90	14.50		146	146		14.50	15.00	0.50	8	100.0	Grey	0.00	
09:00	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	15.00		146	146		15.00	15.50	0.50	14	100.0	Brown	0.00	
09:45	Drilling	Rotary Open Hole	RO	PCD	42.10	16.40	15.50		146	146		15.50	16.00	0.50	8	100.0	Brown	0.00	
10:30	Drilling	Rotary Open Hole	RO	PCD	42.10	16.40	16.00		146	146		16.00	16.50	0.50	5	100.0	Brown	0.00	
12:55	Drilling	Rotary Open Hole	RO	PCD	42.10	16.50	16.50		146	146		16.50	17.50	1.00	11	100.0	Brown	0.00	
13:45	Drilling	Rotary Open Hole	RO	PCD	42.10	16.50	17.50		146	146		17.50	18.00	0.50	8	100.0	Brown	0.00	
14:26	Drilling	Rotary Open Hole	RO	PCD	42.10	16.50	18.00		146	146		18.00	18.50	0.50	8	100.0	Brown	0.00	
15:00	Drilling	Rotary Open Hole	RO	PCD	42.10	16.20	18.50		146	146		18.50	19.00	0.50	5	100.0	Brown	0.00	
15:36	Drilling	Rotary Open Hole	RO	PCD	42.10	16.20	19.00		146	146		19.00	20.00	1.00	10	100.0	Grey	0.00	
16:20	Drilling	Rotary Open Hole	RO	PCD	42.10	16.00	20.00		146	146		20.00	20.50	0.50	7	100.0	Grey	0.00	
16:58	Drilling	Rotary Open Hole	RO	PCD	42.10	15.80	20.50		146	146		20.50	21.50	1.00	11	0.0	Clear	0.00	
17:37	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	21.50		146	146		21.50	22.00	0.50	7	0.0		0.00	
18:05	Drilling	Rotary Open Hole	RO	PCD	42.10	15.60	22.00		146	146		22.00	22.50	0.50	5	0.0		0.00	
18:35	Drilling	Rotary Open Hole	RO	PCD	42.10	15.50	22.50		146	146		22.50	23.50	1.00	10	0.0		0.00	
19:00	Shift	End					22.50					23.50	0.00	-23.50					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
14.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

PS 25 thick wall Shelby - no recovery.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

PS 25 thick wall Shelby - no recovery.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-07 18:43:22 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
H	14.50	14.95	21	55	400	14.50	✓
H	15.00	15.35	22	100	0	15.00	✓
H	15.50	15.95	23	71	200	15.50	✓
H	16.00	16.35	24	100	350	16.00	✓
PS	16.50	17.20	25	0	0	16.50	✓
PS	16.50	17.20	26	0	700	16.50	✓
PS	17.50	18.00	27	0	200	17.50	✓
PS	18.00	18.50	28	0	500	18.00	✓
PS	18.50	18.90	29	0	400	18.50	✓
PS	19.00	20.00	30	0	500	19.00	✓
PS	20.00	21.00	31	0	450	20.00	✓
PS	20.50	21.50	32	0	1000	20.50	✓
PS	21.50	22.00	33	0	480	21.50	✓
PS	22.00	22.50	34	0	300	22.00	✓
PS	22.50	23.50	35	0	950	22.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

PS 25 thick wall Shelby - no recovery.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Tuesday 2022-06-07

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-07 18:43:24 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					23.50					23.50	23.50	0.00					
18:45	HSSEQ	Toolbox Talk																	
19:25	Drilling	Rotary Open Hole	RO	PCD	42.10	15.50	24.00		146	146		23.50	24.00	0.50	5	0.0	Clear	0.00	
20:00	Drilling	Rotary Open Hole	RO	PCD	42.10	15.50	24.50		146	146		24.00	24.50	0.50	6	0.0	Clear	0.00	
21:05	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	25.50		146	146		24.50	25.50	1.00	8	0.0	Clear	0.00	
21:55	Drilling	Rotary Open Hole	RO	PCD	42.10	15.80	26.50		146	146		25.50	26.50	1.00	9	0.0	Clear	0.00	
22:50	Drilling	Rotary Open Hole	RO	PCD	42.10	15.90	27.50		146	146		26.50	27.50	1.00	9	0.0	Clear	0.00	
23:35	Drilling	Rotary Open Hole	RO	PCD	42.10	15.90	28.50		146	146		27.50	28.50	1.00	11	0.0	Clear	0.00	
01:20	Drilling	Rotary Open Hole	RO	PCD	42.10	15.60	29.50		146	146		28.50	29.50	1.00	10	0.0	Clear	0.00	
02:25	Drilling	Rotary Core	RC	PCD	42.10	15.50	30.50		146	146	102	29.50	30.50	1.00	9	0.0	Clear	0.90	1
03:05	Drilling	Rotary Core	RC	PCD	42.10	15.40	31.50		146	146	102	30.50	31.50	1.00	8	0.0	Clear	1.00	2
03:30	Drilling	Rotary Core	RC	PCD	42.10	15.30	32.50		146	146	102	31.50	32.50	1.00	10	0.0	Clear	1.00	3
04:10	Drilling	Rotary Core	RC	PCD	42.10	15.20	33.00		146	146	102	32.50	33.00	0.50	5	0.0	Clear	0.50	4
04:30	Drilling	Rotary Core	RC	PCD	42.10	15.20	34.00		146	146	102	33.00	34.00	1.00	7	0.0	Clear	0.40	5
05:15	Drilling	Rotary Open Hole	RO	PCD	42.10	15.20	34.50		146	146		34.00	34.50	0.50	5	0.0	Clear	0.00	
05:50	Drilling	Rotary Open Hole	RO	PCD	42.10	15.20	35.00		146	146		34.50	35.00	0.50	4	0.0	Clear	0.00	
06:20	Drilling	Rotary Open Hole	RO	PCD	42.10	15.20	35.50		146	146		35.00	36.00	1.00	5	0.0	Clear	0.00	
06:48	Shift	End					35.50					35.50	36.00	0.50					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	5	Bearing	

REMARKS

push samples 36 to 47 inclusive with thin walled shelby tube.
push sample 47 damaged tube.
push sample 48 with thick walled shelby tube.
push sample 50 with thick walled shelby tube with metal catcher spring.
push sample51, 52 and 53 with thick walled shelby tube.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 36 to 47 inclusive with thin walled shelby tube.
push sample 47 damaged tube.
push sample 48 with thick walled shelby tube.
push sample 50 with thick walled shelby tube with metal catcher spring.
push sample51, 52 and 53 with thick walled shelby tube.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 06:54:47 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	23.50	24.00	36		500	23.50	✓
P	24.00	24.50	37		500	24.00	✓
P	24.50	25.50	38		700	24.50	✓
P	24.50	25.50	39		300	24.50	✓
P	25.50	26.50	40		700	25.50	✓
P	25.50	26.50	41		300	25.50	✓
P	26.50	27.00	42		500	26.50	✓
P	27.00	27.50	43		500	26.50	✓
P	27.50	28.00	44		500	27.50	✓
P	28.00	28.50	45		500	27.50	✓
P	28.50	29.00	46		500	28.50	✓
P	29.00	29.50	47		500	28.50	✓
P	29.50	29.60	48		100	29.50	✓
H#	29.60	29.80	49	100	0	29.50	✓
P	34.00	34.50	50		500	34.00	✓
P	34.50	35.00	51		400	34.50	✓
P	35.00	35.50	52		450	35.00	✓
P	35.50	36.00	53		400	35.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 36 to 47 inclusive with thin walled shelby tube.
push sample 47 damaged tube.
push sample 48 with thick walled shelby tube.
push sample 50 with thick walled shelby tube with metal catcher spring.
push sample51, 52 and 53 with thick walled shelby tube.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Tuesday 2022-06-07

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 06:54:49 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	OVERCAST	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					35.50					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:15	Delay	Rig Maintenance																	
07:41	Drilling	Rotary Open Hole	RO	PCD	42.10	15.10	35.50		146	146		35.50	36.00	0.50	5	0.0		0.00	
08:00	Drilling	Add/Remove Casing																	
08:30	Drilling	Rotary Open Hole	RO	PCD	42.10	15.10	36.00		146	146		36.00	36.50	0.50	5	0.0		0.00	
10:03	Drilling	Rotary Open Hole	RO	PCD	42.10	15.60	36.50		146	146		36.50	37.00	0.50	7	0.0		0.00	
13:04	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	37.00		146	146		37.00	37.50	0.50	11	0.0		0.00	
13:35	Drilling	Rotary Open Hole	RO	PCD	42.10	16.10	38.80		146	146		37.50	38.80	1.30	15	0.0		0.00	
19:00	Shift	End					38.80					38.80	0.00	-38.80					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
35.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

Unable to latch onto NCD to recover push sample 60 (38.50 - 38.80m) Pull Geobore back to deck, clean out barrel and retrieve NCD and pushed sample.
18:10 Start running Geobore back in.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 18:13:08 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	OVERCAST	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

Unable to latch onto NCD to recover push sample 60 (38.50 - 38.80m) Pull Geobore back to deck, clean out barrel and retrieve NCD and pushed sample.
18:10 Start running Geobore back in.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 18:13:09 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	OVERCAST	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	36.00	36.50	54	0	500	36.00	✓
PS	36.50	37.00	55	0	0	36.50	✓
PS	36.50	37.00	56	0	0	36.50	✓
H	36.50	36.95	57	25	300	36.50	✓
PS	37.00	37.50	58	0	500	37.00	✓
PS	37.50	38.50	59	0	1000	37.50	✓
PS	38.50	38.80	60	0	260	38.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

Unable to latch onto NCD to recover push sample 60 (38.50 - 38.80m) Pull Geobore back to deck, clean out barrel and retrieve NCD and pushed sample.
18:10 Start running Geobore back in.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 18:13:10 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Wednesday 2022-06-08

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-08 18:13:10 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					4.00					4.00	4.00	0.00					
18:45	HSSEQ	Toolbox Talk																	
19:15	Drilling	Drilling	RO	PCD	42.10	15.10	39.00		146	146		4.00	39.00	35.00	270	25.0	Grey	0.00	
01:50	Drilling	Drilling	RO	PCD	42.10	15.80	39.70		146	146		39.00	39.70	0.70	9	0.0	Clear	0.00	
02:45	Drilling	Drilling	RO	PCD	42.10	15.70	40.20		146	146		39.70	40.20	0.50	8	0.0	Clear	0.00	
03:25	Drilling	Drilling	RO	PCD	42.10	15.60	40.70		146	146		40.20	40.70	0.50	9	0.0	Clear	0.00	
04:15	Drilling	Drilling	RO	PCD	42.10	15.60	41.50		146	146		40.70	41.50	0.80	13	0.0	Clear	0.00	
05:05	Drilling	Drilling	RO	PCD	42.10	15.60	41.50		146	146		41.50	42.00	0.50	8	0.0	Clear	0.00	
06:50	Shift	End					41.50					42.00	0.00	-42.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-09 06:52:52 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-09 06:52:53 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	39.00	39.60	61		600	39.00	✓
P	39.60	39.70	62		100	39.00	✓
P	39.70	40.20	63		400	39.70	✓
P	40.20	40.70	64		500	40.20	✓
P	40.70	41.50	65		700	40.70	✓
P	41.50	42.00	66		500	41.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-09 06:52:54 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Wednesday 2022-06-08

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet and breezy	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					42.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:35	Drilling	Add/Remove Casing																	
08:52	Drilling	Running in or Removing																	
10:40	Drilling	Rotary Open Hole	RO	PCD	42.10	15.80	15.85		146	146		15.85	42.00	26.15	80	0.0		0.00	
12:54	Drilling	Rotary Open Hole	RO	PCD	42.10	15.70	42.00		146	146		42.00	43.50	1.50	15	0.0		0.00	
13:40	Drilling	Rotary Core	RC	PCD	42.10	15.70	43.50		146	146	102	43.50	44.50	1.00	5	0.0		1.00	6
14:10	Drilling	Rotary Core	RC	PCD	42.10	15.70	44.50		146	146	102	44.50	45.50	1.00	5	0.0		1.00	7
14:46	Drilling	Rotary Core	RC	PCD	42.10	15.80	45.50		146	146	102	45.50	46.50	1.00	5	0.0		1.00	8
15:06	Drilling	Rotary Core	RC	PCD	42.10	15.70	46.50		146	146	102	46.50	47.50	1.00	4	0.0		1.00	9
15:30	Drilling	Rotary Core	RC	PCD	42.10	15.80	47.50		146	146	102	47.50	49.00	1.50	7	0.0		1.50	10
15:52	Drilling	Rotary Core	RC	PCD	42.10	15.80	49.00		146	146	102	49.00	50.50	1.50	6	0.0		1.47	11
16:17	Drilling	Rotary Core	RC	PCD	42.10	15.70	50.50		146	146	102	50.50	52.00	1.50	7	0.0		0.75	12
19:00	Shift	End					50.50					52.00	52.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
15.85	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	Y	Angle	vertical
Core Boxes Used	7	Bearing	

REMARKS

07:35: Add 3.75m of 7" casing to securein clamps
08:52: Pull Geobore string
Nightshifts push number 67(32.00 - 33.00) recovered. 900mm recovery.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3792.a147b0) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 15:53:14 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet and breezy	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

07:35: Add 3.75m of 7" casing to securein clamps
08:52: Pull Geobore string
Nightshifts push number 67(32.00 - 33.00) recovered. 900mm recovery.

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3792.a147b0) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 15:53:15 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH01**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet and breezy	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

07:35: Add 3.75m of 7" casing to securein clamps
08:52: Pull Geobore string
Nightshifts push number 67(32.00 - 33.00) recovered. 900mm recovery.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Thursday 2022-06-09

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3792.a147b0) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 15:53:16 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					52.00					0.00	0.00	0.00					
19:15	Drilling	Drilling	RC	PCD	42.10	15.10	53.00		146	146	102	52.00	53.00	1.00	7	0.0	Clear	0.95	13
19:35	Drilling	Drilling	RC	PCD	42.10	15.00	54.50		146	146	102	53.00	54.50	1.50	9	0.0	Clear	1.50	14
19:55	Drilling	Drilling	RC	PCD	42.10	14.90	56.00		146	146	102	54.50	56.00	1.50	8	0.0	Clear	1.50	15
20:25	Drilling	Drilling	RC	PCD	42.10	15.10	57.50		146	146	102	56.00	57.50	1.50	9	0.0	Clear	1.40	16
20:55	Drilling	Drilling	RC	PCD	42.10	15.00	58.50		146	146	102	57.50	58.50	1.00	7	0.0	Clear	1.00	17
21:25	Drilling	Drilling	RC	PCD	42.10	15.00	59.50		146	146	102	58.50	59.50	1.00	7	0.0	Clear	1.00	18
22:00	Drilling	Drilling	RC	PCD	42.10	14.90	61.00		146	146	102	59.50	61.00	1.50	11	0.0	Clear	1.40	19
22:35	Drilling	Drilling	RC	PCD	42.10	15.00	62.50		146	146	102	61.00	62.50	1.50	10	0.0	Clear	1.50	20
23:10	Drilling	Drilling	RC	PCD	42.10	15.20	64.00		146	146	102	62.50	64.00	1.50	11	0.0	Clear	1.50	21
23:45	Drilling	Drilling	RC	PCD	42.10	15.30	65.50		146	146	102	64.00	65.50	1.50	9	0.0	Clear	1.50	22
00:45	Drilling	Drilling	RC	PCD	42.10	15.40	67.00		146	146	102	65.50	67.00	1.50	10	0.0	Clear	1.50	23
01:20	Drilling	Drilling	RC	PCD	42.10	15.50	68.50		146	146	102	67.00	68.50	1.50	12	0.0	Clear	0.85	24
01:50	Drilling	Drilling	RC	PCD	42.10	15.60	69.50		146	146	102	68.50	69.50	1.00	12	0.0	Clear	0.85	✓ 25
02:15	Drilling	Drilling	RC	PCD	42.10	15.70	70.50		146	146	102	69.50	70.50	1.00	7	0.0	Clear	1.50	✓ 26
02:35	Drilling	Drilling	RC	PCD	42.10	15.50	71.50		146	146	102	70.50	71.50	1.00	8	0.0	Clear	1.20	✓ 27
02:50	Drilling	Drilling	RC	PCD	42.10	15.50	73.00		146	146	102	71.50	73.00	1.50	7	0.0	Clear	1.20	28
03:30	Drilling	Drilling	RC	PCD	42.10	15.50	74.00		146	146	102	73.00	74.00	1.00	7	0.0	Clear	0.45	29

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	18	Bearing	

REMARKS

E.O.H. @ 75.00m BML confirmed by client rep.
pull geobore back to 50.00m for first sweep of wireline geophsics.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
04:01	Drilling	Drilling	RC	PCD	42.10	15.50	75.00		146	146	102	74.00	75.00	1.00	6	0.0	Clear	1.00	30
04:40	Drilling	Running in or Removing Pipe																	
05:35	Testing	Wireline Geophysics																	
07:00	Shift	End					75.00					75.00	75.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	18	Bearing	

REMARKS

E.O.H. @ 75.00m BML confirmed by client rep.
pull geobore back to 50.00m for first sweep of wireline geophsics.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 06:45:24 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

E.O.H. @ 75.00m BML confirmed by client rep.
pull geobore back to 50.00m for first sweep of wireline geophsics.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 06:45:24 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**BH01**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-09
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

E.O.H. @ 75.00m BML confirmed by client rep.
pull geobore back to 50.00m for first sweep of wireline geophsics.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 06:45:25 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH01**
Date	Thursday 2022-06-09

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-10 06:45:25 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_08
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					0.00					0.00	0.00	0.00					
05:25	Drilling	Cable Percussion	RO	PCD	34.30	13.70	2.50		177	177		0.00	2.50	2.50	70	0.0	Clear	0.00	
07:00	Shift	End					2.50					2.50	2.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 06:57:55 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_08
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 06:57:55 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_08
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
B	0.00	0.50	1				✓
B	0.50	1.00	2				✓
B	1.00	1.50	3				✓
B	1.50	2.00	4				✓
B	2.00	2.50	5				✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 06:57:56 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_08**
Date	Monday 2022-07-11

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 06:57:56 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_08
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					2.50					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:20	Move and Set Up	Moving Equipment																	
08:40	Drilling	Running in or Removing																	
09:28	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	2.50		146	146		2.50	2.80	0.30	2	100.0	Grey	0.00	
09:47	Drilling	Rotary Open Hole	RO	PCD	34.30	13.40	2.80		146	146		2.80	3.80	1.00	6	100.0	Grey	0.00	
10:15	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	3.80		146	146		3.80	4.30	0.50	3	100.0	Grey	0.00	
10:37	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	4.30		146	146		4.30	5.30	1.00	5	100.0	Grey	0.00	
11:03	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	5.30		146	146		5.30	6.30	1.00	5	100.0	Grey	0.00	
11:30	Drilling	Rotary Open Hole	RO	PCD	34.30	13.80	6.30		146	146		6.30	6.80	0.50	5	100.0	Grey	0.00	
12:40	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	6.80		146	146		6.80	7.80	1.00	5	100.0	Grey	0.00	
13:20	Drilling	Rotary Open Hole	RO	PCD	34.30	14.30	7.80		146	146		7.80	8.30	0.50	5	100.0	Grey	0.00	
13:50	Drilling	Rotary Open Hole	RO	PCD	34.30	14.40	8.30		146	146		8.30	9.30	1.00	5	100.0	Grey	0.00	
14:18	Drilling	Rotary Open Hole	RO	PCD	34.30	14.30	9.30		146	146		9.30	10.30	1.00	7	100.0	Grey	0.00	
15:00	Drilling	Rotary Open Hole	RO	PCD	34.30	14.50	10.30		146	146		10.30	10.80	0.50	4	100.0	Grey	0.00	
15:22	Drilling	Rotary Open Hole	RO	PCD	34.30	14.50	10.80		146	146		10.80	11.80	1.00	5	100.0	Grey	0.00	
16:00	Drilling	Rotary Open Hole	RO	PCD	34.30	14.40	11.80		146	146		11.80	12.30	0.50	4	100.0	Grey	0.00	
16:28	Drilling	Rotary Open Hole	RO	PCD	34.30	14.30	12.30		146	146		12.30	13.30	1.00	6	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
2.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 1: 2.50 - 3.72m
CPT 2: 3.80 - 5.27m
CPT 3: 6.30 - 7.77m
CPT 4: 7.80 - 9.17m
CPT 5: 10.30 - 11.68m
CPT 6: 11.80 - 13.26m
CPT 7: 14.30 - 15.78m
CPT 8: 15.80 - 17.30m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_08**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
16:54	Drilling	Rotary Open Hole	RO	PCD	34.30	14.10	13.30		146	146		13.30	13.80	0.50	4	100.0	Grey	0.00	
17:10	Drilling	Rotary Open Hole	RO	PCD	34.30	14.10	13.80		146	146		13.80	14.30	0.50	4	100.0	Grey	0.00	
17:45	Drilling	Rotary Open Hole	RO	PCD	34.30	13.90	14.30		146	146		14.30	14.80	0.50	4	100.0	Grey	0.00	
18:08	Drilling	Rotary Open Hole	RO	PCD	34.30	13.80	14.80		146	146		14.80	15.80	1.00	5	100.0	Grey	0.00	
19:00	Shift	End					14.80					15.80	15.80	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 1: 2.50 - 3.72m
CPT 2: 3.80 - 5.27m
CPT 3: 6.30 - 7.77m
CPT 4: 7.80 - 9.17m
CPT 5: 10.30 - 11.68m
CPT 6: 11.80 - 13.26m
CPT 7: 14.30 - 15.78m
CPT 8: 15.80 - 17.30m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 18:32:24 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_08
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 1: 2.50 - 3.72m
CPT 2: 3.80 - 5.27m
CPT 3: 6.30 - 7.77m
CPT 4: 7.80 - 9.17m
CPT 5: 10.30 - 11.68m
CPT 6: 11.80 - 13.26m
CPT 7: 14.30 - 15.78m
CPT 8: 15.80 - 17.30m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 18:32:24 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_08**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	2.80	3.80	6	0	400	2.80	✓
PS	4.30	5.30	7	0	400	4.30	✓
PS	5.30	5.80	8	0	450	5.30	✓
PS	5.80	6.30	9	0	500	5.30	✓
PS	6.80	7.80	10	0	550	6.80	✓
PS	8.30	9.30	11	0	300	8.30	✓
PS	9.30	9.80	12	0	450	9.30	✓
PS	9.80	10.30	13	0	500	9.30	✓
PS	10.80	11.80	14	0	700	10.80	✓
PS	12.30	13.30	15	0	800	12.30	✓
PS	13.30	13.80	16	0	350	13.30	✓
PS	13.80	14.30	17	0	500	13.80	✓
PS	14.80	15.80	18	0	600	14.80	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 1: 2.50 - 3.72m
CPT 2: 3.80 - 5.27m
CPT 3: 6.30 - 7.77m
CPT 4: 7.80 - 9.17m
CPT 5: 10.30 - 11.68m
CPT 6: 11.80 - 13.26m
CPT 7: 14.30 - 15.78m
CPT 8: 15.80 - 17.30m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 18:32:25 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_08**
Date	Monday 2022-07-11

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-11 18:32:26 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					15.80					15.80	15.80	0.00					
19:15	Drilling	Rotary Open Hole	RO	PCD	34.30	13.50	16.30		146	146		15.80	16.30	0.50	2	100.0	Grey	0.00	
19:35	Drilling	Rotary Open Hole	RO	PCD	34.30	13.50	17.30		146	146		16.30	17.30	1.00	5	100.0	Grey	0.00	
20:20	Drilling	Rotary Open Hole	RO	PCD	34.30	13.50	18.30		146	146		17.30	18.30	1.00	6	100.0	Grey	0.00	
21:00	Drilling	Rotary Open Hole	RO	PCD	34.30	13.50	19.30		146	146		18.30	19.30	1.00	7	100.0	Grey	0.00	
21:50	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	19.80		146	146		19.30	19.80	0.50	5	100.0	Grey	0.00	
22:15	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	20.80		146	146		19.80	20.80	1.00	9	100.0	Grey	0.00	
23:00	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	21.80		146	146		20.80	21.80	1.00	9	100.0	Grey	0.00	
23:40	Drilling	Rotary Open Hole	RO	PCD	34.30	13.70	22.80		146	146		21.80	22.80	1.00	10	100.0	Grey	0.00	
01:20	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	23.30		146	146		22.80	23.30	0.50	9	100.0	Grey	0.00	
01:55	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	24.30		146	146		23.30	24.30	1.00	17	100.0	Grey	0.00	
02:45	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	25.30		146	146		24.30	25.30	1.00	18	100.0	Grey	0.00	
03:35	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	25.30		146	146		25.30	26.30	1.00	17	100.0	Grey	0.00	
04:45	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	25.30		146	146		26.30	26.80	0.50	9	100.0	Grey	0.00	
05:10	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	27.80		146	146		26.80	27.80	1.00	15	100.0	Grey	0.00	
06:00	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	29.60		146	146		27.80	29.60	1.80	9	100.0	Grey	0.00	
07:13	Shift	End					29.60					29.60	29.60	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**	
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-11	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-12 07:15:31 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS1200	Day and Date	Monday 2022-07-11
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	16.30	17.30	19	1	850	17.30	✓
PS	17.30	17.80	20	1	500	17.80	✓
PS	17.80	18.30	21	1	220	18.30	✓
PS	18.30	18.80	22	1	500	18.80	✓
PS	18.80	19.30	23	1	500	19.30	✓
PS	19.80	20.80	24	1	680	20.80	✓
PS	20.80	21.30	25	1	500	21.30	✓
PS	21.30	21.80	26	1	500	21.80	✓
PS	21.80	22.30	27	1	500	22.30	✓
PS	22.30	22.80	28	1	460	22.80	✓
PS	23.30	24.30	29	1	560	24.30	✓
PS	24.30	24.80	30	1	460	24.80	✓
PS	24.80	25.30	31	1	500	25.30	✓
PS	25.30	25.80	32	1	500	25.80	✓
PS	25.80	26.30	33	1	500	26.30	✓
PS	26.80	27.80	34	1	520	27.80	✓
PS	27.80	28.30	35	1	320	28.30	✓
PS	28.30	28.80	36	1	500	28.80	✓
PS	28.80	29.30	37	1	500	29.30	✓
PS	29.30	29.60	38	1	300	29.60	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH08**
Date	Monday 2022-07-11

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-12 07:15:33 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_08**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					28.80					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:25	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	28.80		146	146		28.80	29.80	1.00	15	100.0	Grey	0.00	
08:20	Drilling	Rotary Core	RC	PCD	34.30	13.50	29.80		146	146	102	29.80	31.30	1.50	11	100.0	Grey	1.50	1
08:50	Drilling	Rotary Core	RC	PCD	34.30	13.50	31.30		146	146	102	31.30	32.30	1.00	9	100.0	Grey	1.00	2
09:14	Drilling	Rotary Core	RC	PCD	34.30	13.50	32.30		146	146	102	32.30	33.30	1.00	9	100.0	Grey	1.00	3
10:00	Drilling	Rotary Core	RC	PCD	34.30	13.50	33.30		146	146	102	33.30	34.80	1.50	13	100.0	Grey	1.50	4
10:25	Drilling	Rotary Core	RC	PCD	34.30	13.40	34.80		146	146	102	34.80	35.80	1.00	10	100.0	Grey	1.00	5
11:10	Drilling	Rotary Open Hole	RO	PCD	34.30	13.60	35.80		146	146		35.80	36.80	1.00	8	100.0	Grey	0.00	
11:49	Drilling	Rotary Core	RC	PCD	34.30	13.60	36.80		146	146	102	36.80	38.30	1.50	6	100.0	Grey	1.50	6
13:07	Drilling	Rotary Core	RC	PCD	34.30	13.80	38.30		146	146	102	38.30	39.80	1.50	6	100.0	Grey	1.40	7
13:31	Drilling	Rotary Core	RC	PCD	34.30	14.00	39.80		146	146	102	39.80	40.80	1.00	5	100.0	Grey	0.30	8
14:05	Drilling	Rotary Open Hole	RO	PCD	34.30	14.10	40.80		146	146		40.80	41.30	0.50	3	100.0	Grey	0.00	
14:38	Drilling	Rotary Open Hole	RO	PCD	34.30	14.30	41.30		146	146		41.30	42.30	1.00	5	100.0	Grey	0.00	
15:15	Drilling	Rotary Open Hole	RO	PCD	34.30	14.40	42.30		146	146		42.30	42.80	0.50	6	100.0	Grey	0.00	
15:42	Drilling	Rotary Open Hole	RO	PCD	34.30	14.40	42.80		146	146		42.80	43.80	1.00	6	100.0	Grey	0.00	
15:55	Move and Set Up	Moving Equipment																	
16:53	Drilling	Rotary Open Hole	RO	PCD	34.30	14.20	43.80		146	146		43.80	44.80	1.00	5	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
28.80	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	8	Bearing	

REMARKS

CPT 12: 29.80 - 31.10m
CPT 13: 33.30 - 34.80m
CPT 14: 36.80 - 37.10m
CPT 15: 38.30 - 39.54m
CPT 16: 40.80 - 42.20m
CPT 17: 42.30 - 43.78m
CPT 18: 44.80 - 46.30m
CPT 19: 46.30 - 47.75m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_08
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS1200	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
17:35	Drilling	Rotary Open Hole	RO	PCD	34.30	14.00	44.80		146	146		44.80	45.30	0.50	4	100.0	Grey	0.00	
17:54	Drilling	Rotary Open Hole	RO	PCD	34.30	14.00	45.30		146	146		45.30	46.30	1.00	5	100.0	Grey	0.00	
19:00	Shift	End					45.30					46.30	46.30	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	8	Bearing	

REMARKS

CPT 12: 29.80 - 31.10m
CPT 13: 33.30 - 34.80m
CPT 14: 36.80 - 37.10m
CPT 15: 38.30 - 39.54m
CPT 16: 40.80 - 42.20m
CPT 17: 42.30 - 43.78m
CPT 18: 44.80 - 46.30m
CPT 19: 46.30 - 47.75m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_08	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 12: 29.80 - 31.10m
CPT 13: 33.30 - 34.80m
CPT 14: 36.80 - 37.10m
CPT 15: 38.30 - 39.54m
CPT 16: 40.80 - 42.20m
CPT 17: 42.30 - 43.78m
CPT 18: 44.80 - 46.30m
CPT 19: 46.30 - 47.75m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-12 18:25:47 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_08
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	35.80	36.30	39	0	500	35.80	✓
PS	36.30	36.70	40	0	400	35.80	✓
PS	41.30	42.30	41	0	700	41.30	✓
PS	42.80	43.80	42	0	850	42.80	✓
PS	43.80	44.30	43	0	500	43.80	✓
PS	44.30	44.80	44	0	500	43.80	✓
PS	45.30	46.30	45	0	850	45.30	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 12: 29.80 - 31.10m
CPT 13: 33.30 - 34.80m
CPT 14: 36.80 - 37.10m
CPT 15: 38.30 - 39.54m
CPT 16: 40.80 - 42.20m
CPT 17: 42.30 - 43.78m
CPT 18: 44.80 - 46.30m
CPT 19: 46.30 - 47.75m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_08**
Date	Tuesday 2022-07-12

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-12 18:25:48 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					46.30					46.30	46.30	0.00					
19:30	Drilling	Rotary Open Hole	RO	PCD	34.30	13.30	46.80		146	146		46.30	46.80	0.50	3	100.0	Grey	0.00	
19:55	Drilling	Rotary Open Hole	RO	PCD	34.30	13.30	47.80		146	146		46.80	47.80	1.00	6	100.0	Grey	0.00	
20:40	Drilling	Rotary Open Hole	RO	PCD	34.30	13.30	48.80		146	146		47.80	48.80	1.00	6	100.0	Grey	0.00	
21:00	Drilling	Rotary Core	RC	PCD	34.30	13.30	49.80		146	146	102	48.80	49.80	1.00	4	100.0	Grey	0.74	9
22:20	Drilling	Rotary Core	RC	PCD	34.30	13.30	51.30		146	146	102	49.80	51.30	1.50	8	100.0	Grey	1.05	10
22:45	Drilling	Rotary Core	RC	PCD	34.30	13.60	52.30		146	146	102	51.30	52.30	1.00	6	100.0	Grey	1.00	11
23:15	Drilling	Rotary Core	RC	PCD	34.30	13.60	53.30		146	146	102	52.30	53.30	1.00	7	100.0	Grey	0.00	12
01:15	Drilling	Rotary Core	RC	PCD	34.30	14.00	53.80		146	146	102	53.30	53.80	0.50	1	100.0	Grey	0.00	13
02:15	Drilling	Rotary Core	RC	PCD	34.30	14.00	54.80		146	146	102	53.80	54.80	1.00	3	100.0	Grey	0.00	14
03:15	Drilling	Rotary Core	RC	PCD	34.30	14.10	56.30		146	146	102	54.80	56.30	1.50	5	100.0	Grey	0.00	15
04:30	Drilling	Rotary Core	RC	PCD	34.30	14.10	57.80		146	146	102	56.30	57.80	1.50	5	90.0	Grey	0.00	16
07:00	Shift	End					57.80					57.80	57.80	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	8	Bearing	

REMARKS

geobore stuck @ 57.70m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

geobore stuck @ 57.70m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-13 07:35:05 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH08**
Contract No	F186642	Crew 2	M. Tierney	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	46.80	47.30	46	1	450	47.30	✓
PS	47.80	48.30	47	1	430	48.30	✓
PS	48.30	48.80	48	1	500	48.80	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

geobore stuck @ 57.70m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH08**
Date	Tuesday 2022-07-12

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-13 07:35:06 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					0.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:20	Standby	Waiting on Access																	
12:45	HSSEQ	Toolbox Talk																	
12:55	Drilling	Add/Remove Casing																	
14:27	Move and Set Up	Set up Rig																	
16:30	HSSEQ	Toolbox Talk																	
16:50	Drilling	Running in or Removing																	
18:30	Drilling	Rotary Open Hole	RO	PCD	45.70	14.50	0.00		178	178		0.00	1.00	1.00	5	0.0		0.00	
19:00	Shift	End					0.00					1.00	1.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-17 18:33:45 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	0.00	1.00	1	0	20	0.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH09**
Date	Friday 2022-06-17

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-17 18:33:46 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					1.00					1.00	1.00	0.00					
20:20	Drilling	Rotary Open Hole	RO	PCD	45.70	14.30	2.00		177	177		1.00	2.00	1.00	5	0.0	Clear	0.00	
22:25	Drilling	Rotary Open Hole	RO	PCD	45.70	13.80	2.00		146	146		2.00	2.50	0.50	3	100.0	Grey	0.00	
22:45	Drilling	Rotary Open Hole	RO	PCD	45.70	13.70	2.00		146	146		2.50	3.50	1.00	4	100.0	Grey	0.00	
23:20	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		3.50	4.00	0.50	3	100.0	Grey	0.00	
23:40	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		4.00	5.00	1.00	5	100.0	Grey	0.00	
00:45	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		5.00	5.50	0.50	3	100.0	Grey	0.00	
01:05	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		5.50	6.00	0.50	4	100.0	Grey	0.00	
01:40	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		6.00	6.50	0.50	4	100.0	Grey	0.00	
02:10	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		6.50	7.50	1.00	7	100.0	Grey	0.00	
02:45	Drilling	Rotary Open Hole	RO	PCD	45.70	13.50	2.00		146	146		7.50	8.00	0.50	4	100.0	Grey	0.00	
03:10	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	2.00		146	146		8.00	9.00	1.00	8	100.0	Grey	0.00	
03:30	Drilling	Rotary Open Hole	RO	PCD	45.70	13.70	2.00		146	146		9.00	9.50	0.50	5	100.0	Grey	0.00	
03:55	Drilling	Rotary Open Hole	RO	PCD	45.70	13.80	2.00		146	146		9.50	10.00	0.50	5	100.0	Grey	0.00	
04:35	Drilling	Rotary Open Hole	RO	PCD	45.70	14.00	2.00		146	146		10.00	10.50	0.50	5	100.0	Grey	0.00	
04:55	Drilling	Rotary Open Hole	RO	PCD	45.70	14.20	2.00		146	146		10.50	11.50	1.00	9	100.0	Grey	0.00	
05:35	Drilling	Rotary Open Hole	RO	PCD	45.70	14.40	2.00		146	146		11.50	12.00	0.50	6	100.0	Grey	0.00	
06:00	Drilling	Rotary Open Hole	RO	PCD	45.70	14.60	2.00		146	146		12.00	14.00	2.00	9	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

push samples 2,4,5,7 thick walled shelby with catcher.
push samples 6 and 8 to 14 inclusive thick walled shelby.
push sample 14 with thin walled shelby

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	End					2.00					14.00	14.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

push samples 2,4,5,7 thick walled shelby with catcher.
push samples 6 and 8 to 14 inclusive thick walled shelby.
push sample 14 with thin walled shelby

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 2,4,5,7 thick walled shelby with catcher.
push samples 6 and 8 to 14 inclusive thick walled shelby.
push sample 14 with thin walled shelby

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-17
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P#	1.00	2.00	2			1.00	✓
H	1.00	1.45	3	9	350	1.00	✓
PS	2.50	2.80	4	1	50	2.00	✓
PS	4.00	4.50	5	1	150	4.00	✓
P#	5.00	5.50	6			5.00	✓
PS	5.00	5.50	7	1	400	5.00	✓
PS	5.50	6.00	8	1	400	5.50	✓
PS	6.50	7.00	9	1	400	6.50	✓
PS	8.00	8.50	10	1	350	8.00	✓
PS	9.00	9.40	11	1	300	9.00	✓
PS	9.50	9.90	12	1	400	9.50	✓
PS	10.50	11.00	13	1	450	10.50	✓
PS	12.00	13.00	14	1	900	12.00	✓
PS	13.00	14.00	15	1	600	14.00	✓
PS	13.00	14.00	16	1	300	14.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 2,4,5,7 thick walled shelby with catcher.
push samples 6 and 8 to 14 inclusive thick walled shelby.
push sample 14 with thin walled shelby

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH09**
Date	Friday 2022-06-17

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-18 06:57:38 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					13.00					0.00	0.00	0.00					
07:01	HSSEQ	Toolbox Talk																	
07:25	Drilling	Rotary Open Hole	RO	PCD	45.70	14.90	13.00		146	146		13.00	14.00	1.00	20	60.0	Grey	0.00	
08:30	Drilling	Rotary Open Hole	RO	PCD	45.70	14.90	14.00		146	146		14.00	15.00	1.00	12	0.0		0.00	
09:15	Drilling	Rotary Open Hole	RO	PCD	45.70	14.60	15.00		146	146		15.00	16.50	1.50	16	0.0		0.00	
10:12	Drilling	Rotary Open Hole	RO	PCD	45.70	14.50	16.50		146	146		16.50	17.50	1.00	15	30.0	Grey	0.00	
10:46	Drilling	Rotary Open Hole	RO	PCD	45.70	14.30	17.50		146	146		17.50	18.00	0.50	9	0.0		0.00	
11:17	Drilling	Add/Remove Casing																	
12:38	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	18.00		146	146		18.00	18.50	0.50	10	70.0	Grey	0.00	
13:14	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	18.50		146	146		18.50	19.50	1.00	8	100.0	Grey	0.00	
13:42	Drilling	Rotary Open Hole	RO	PCD	45.70	14.20	19.50		146	146		19.50	20.50	1.00	10	100.0	Grey	0.00	
14:20	Drilling	Rotary Open Hole	RO	PCD	45.70	14.20	20.50		146	146		20.50	21.50	1.00	10	100.0	Grey	0.00	
15:00	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	21.50		146	146		21.50	22.50	1.00	10	100.0	Grey	0.00	
15:28	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	22.50		146	146		22.50	23.00	0.50	6	100.0	Grey	0.00	
16:20	Drilling	Add/Remove Casing																	
16:30	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	23.00		146	146		23.00	24.00	1.00	10	100.0	Grey	0.00	
17:04	Drilling	Rotary Open Hole	RO	PCD	45.70	14.30	24.00		146	146		24.00	25.00	1.00	10	100.0	Grey	0.00	
17:40	Drilling	Rotary Open Hole	RO	PCD	45.70	14.30	25.00		146	146		25.00	25.50	0.50	7	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
13.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 8: 15.00 - 16.50m
CPT 9: 18.00 - 19.50m
CPT 10: 21.50 - 23.00m
CPT 11: 25.00 - 26.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:16	Drilling	Rotary Open Hole	RO	PCD	45.70	14.30	25.50		146	146		25.50	26.50	1.00	12	100.0	Grey	0.00	
19:00	Shift	End					25.50					26.50	26.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 8: 15.00 - 16.50m
CPT 9: 18.00 - 19.50m
CPT 10: 21.50 - 23.00m
CPT 11: 25.00 - 26.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 8: 15.00 - 16.50m
CPT 9: 18.00 - 19.50m
CPT 10: 21.50 - 23.00m
CPT 11: 25.00 - 26.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-18 18:29:29 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	14.00	14.50	17	0	400	14.00	✓
PS	14.50	15.00	18	0	500	14.00	✓
PS	16.50	17.00	19	0	300	16.50	✓
PS	17.00	17.50	20	0	500	16.50	✓
PS	17.50	18.00	21	0	450	17.50	✓
PS	18.50	19.50	22	0	520	18.50	✓
PS	19.50	20.50	23	0	920	19.50	✓
PS	20.50	21.50	24	0	350	20.50	✓
PS	20.50	21.50	25	0	550	20.50	✓
PS	22.50	23.00	26	0	500	22.50	✓
PS	23.00	24.00	27	0	300	23.00	✓
PS	23.00	24.00	28	0	700	23.00	✓
PS	24.00	25.00	29	0	480	24.00	✓
PS	24.00	25.00	30	0	520	24.00	✓
PS	25.50	26.50	31	0	900	25.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 8: 15.00 - 16.50m
CPT 9: 18.00 - 19.50m
CPT 10: 21.50 - 23.00m
CPT 11: 25.00 - 26.50m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH09**
Date	Saturday 2022-06-18

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-18 18:29:31 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					26.50					26.50	26.50	0.00					
19:30	Drilling	Rotary Open Hole	RO	PCD	45.70	13.70	27.00		146	146		26.50	27.00	0.50	7	100.0	Grey	0.00	
19:45	Drilling	Rotary Core	RC	PCD	45.70	13.70	27.50		146	146	102	27.00	27.50	0.50	4	100.0	Grey	0.50	1
20:15	Drilling	Rotary Core	RC	PCD	45.70	13.70	28.50		146	146	102	27.50	28.50	1.00	8	100.0	Grey	0.60	2
20:45	Drilling	Rotary Core	RC	PCD	45.70	13.60	29.00		146	146	102	28.50	29.00	0.50	5	100.0	Grey	0.60	3
22:30	Drilling	Rotary Open Hole	RO	PCD	45.70	13.60	30.00		146	146		29.00	30.00	1.00	5	100.0	Grey	0.00	
23:15	Drilling	Rotary Core	RC	PCD	45.70	13.80	31.00		146	146	102	30.00	31.00	1.00	8	100.0	Grey	0.40	4
01:20	Drilling	Rotary Core	RC	PCD	45.70	13.60	31.50		146	146	102	31.00	31.50	0.50	3	0.0	Clear	0.00	5
02:25	Drilling	Rotary Open Hole	RO	PCD	45.70	13.80	32.00		146	146		31.50	32.00	0.50	5	0.0	Clear	0.00	
03:00	Drilling	Rotary Open Hole	RO	PCD	45.70	13.70	32.50		146	146		32.00	32.50	0.50	5	0.0	Clear	0.00	
04:00	Drilling	Rotary Open Hole	RO	PCD	45.70	13.80	33.00		146	146		32.50	33.00	0.50	5	0.0	Clear	0.00	
04:55	Drilling	Rotary Open Hole	RO	PCD	45.70	14.00	33.50		146	146		33.00	33.50	0.50	4	0.0	Clear	0.00	
05:50	Drilling	Rotary Core	RC	PCD	45.70	14.10	34.50		146	146	102	33.50	34.50	1.00	4	0.0	Clear	0.00	6
06:45	Shift	End					34.50					34.50	34.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
4.50	Water
2.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	6	Bearing	

REMARKS

push sample 32 with thin walled shelby, tube damaged.
core runs 2,3,4,5 and 6 required NCDing afterwards

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push sample 32 with thin walled shelby, tube damaged.
core runs 2,3,4,5 and 6 required NCDing afterwards

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH09**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-18
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	26.50	26.80	32	1	300	26.80	✓
H	29.00	29.45	33	60	450	29.00	✓
H	31.50	31.80	34	100	300	31.50	✓
H	32.00	32.30	35	100	300	32.00	✓
H	32.50	32.80	36	100	300	32.50	✓
H	33.00	33.30	37	100	200	33.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push sample 32 with thin walled shelby, tube damaged.
core runs 2,3,4,5 and 6 required NCDing afterwards

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH09**
Date	Saturday 2022-06-18

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-19 06:54:22 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-19
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Overcast	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					34.50					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
08:27	Drilling	Rotary Open Hole	RO	PCD	45.70	14.70	34.50		146	146		34.50	35.00	0.50	5	0.0		0.00	
09:20	Drilling	Rotary Core	RC	PCD	45.70	14.60	35.00		146	146	102	35.00	36.00	1.00	6	0.0		0.80	7
09:45	Drilling	Rotary Core	RC	PCD	45.70	14.60	36.00		146	146	102	36.00	37.50	1.50	7	0.0		1.25	8
10:45	Drilling	Rotary Core	RC	PCD	45.70	14.30	37.50		146	146	102	37.50	38.50	1.00	5	0.0		0.90	9
11:05	Drilling	Rotary Core	RC	PCD	45.70	14.20	38.50		146	146	102	38.50	39.50	1.00	5	0.0		1.10	10
11:29	Drilling	Rotary Core	RC	PCD	45.70	14.20	39.50		146	146	102	39.50	40.50	1.00	6	0.0		1.00	11
12:50	Drilling	Rotary Core	RC	PCD	45.70	14.10	40.50		146	146	102	40.50	41.50	1.00	5	0.0		1.00	12
13:20	Drilling	Rotary Core	RC	PCD	45.70	14.10	41.50		146	146	102	41.50	42.50	1.00	5	0.0		0.90	13
13:35	Drilling	Rotary Core	RC	PCD	45.70	14.10	42.50		146	146	102	42.50	43.50	1.00	6	0.0		0.95	14
14:00	Drilling	Rotary Core	RC	PCD	45.70	14.10	43.50		146	146	102	43.50	44.50	1.00	5	0.0		1.10	15
14:20	Drilling	Rotary Core	RC	PCD	45.70	14.10	44.50		146	146	102	44.50	45.50	1.00	5	0.0		0.90	16
14:35	Drilling	Rotary Core	RC	PCD	45.70	14.10	45.50		146	146	102	45.50	46.50	1.00	4	0.0		1.00	17
15:00	Drilling	Rotary Core	RC	PCD	45.70	14.00	46.50		146	146	102	46.50	47.50	1.00	4	0.0		0.90	18
15:20	Drilling	Rotary Core	RC	PCD	45.70	13.90	47.50		146	146	102	47.50	48.50	1.00	4	0.0		1.10	19
15:35	Drilling	Rotary Core	RC	PCD	45.70	14.00	48.50		146	146	102	48.50	49.50	1.00	4	0.0		1.00	20
16:00	Drilling	Rotary Core	RC	PCD	45.70	14.00	49.50		146	146	102	49.50	50.50	1.00	5	0.0		1.00	21

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
34.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	20	Bearing	

REMARKS

CR 10 1.10m recovery. 0.10m recovered from previous run.
CR 15 picked up 0.10m missing from previous run.
CR 19 picked up 0.10m missing from previous run.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Plate 2.74

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-19
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Overcast	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
16:25	Drilling	Rotary Core	RC	PCD	45.70	13.80	50.50		146	146	102	50.50	51.50	1.00	4	0.0		1.00	22
16:44	Drilling	Rotary Core	RC	PCD	45.70	13.80	51.50		146	146	102	51.50	52.50	1.00	4	0.0		1.00	23
17:00	Drilling	Rotary Core	RC	PCD	45.70	13.90	52.50		146	146	102	52.50	53.50	1.00	4	0.0		0.90	24
17:19	Drilling	Rotary Core	RC	PCD	45.70	13.80	53.50		146	146	102	53.50	54.50	1.00	5	0.0		0.95	25
17:41	Drilling	Rotary Core	RC	PCD	45.70	14.00	54.50		146	146	102	54.50	55.50	1.00	5	0.0		1.00	26
19:00	Shift	End					54.50					55.50	55.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	20	Bearing	

REMARKS

CR 10 1.10m recovery. 0.10m recovered from previous run.
CR 15 picked up 0.10m missing from previous run.
CR 19 picked up 0.10m missing from previous run.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-19
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Overcast	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CR 10 1.10m recovery. 0.10m recovered from previous run.
CR 15 picked up 0.10m missing from previous run.
CR 19 picked up 0.10m missing from previous run.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-19 18:23:15 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH09**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-19
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Overcast	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
H	34.50	34.80	38	100	250	34.50	✓
H	35.00	35.20	39	100	150	35.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CR 10 1.10m recovery. 0.10m recovered from previous run.
CR 15 picked up 0.10m missing from previous run.
CR 19 picked up 0.10m missing from previous run.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-19 18:23:15 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH09**
Date	Sunday 2022-06-19

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-19 18:23:16 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_10
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-29
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion: incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					0.00					0.00	0.00	0.00					
21:55	Drilling	Rotary Open Hole	RO	PCD	48.60	14.50	0.50		177	177		0.00	0.50	0.50	2	0.0	Clear	0.00	
22:25	Drilling	Rotary Open Hole	RO	PCD	48.60	14.40	1.00		177	177		0.50	1.00	0.50	3	0.0	Clear	0.00	
23:05	Drilling	Rotary Open Hole	RO	PCD	48.60	14.50	1.50		177	177		1.00	1.50	0.50	5	0.0	Clear	0.00	
23:35	Drilling	Rotary Open Hole	RO	PCD	48.60	14.50	2.00		177	177		1.50	2.00	0.50	6	0.0	Clear	0.00	
00:35	Drilling	Rotary Open Hole	RO	PCD	48.60	14.60	2.50		177	177		2.00	2.50	0.50	6	0.0	Clear	0.00	
01:15	Drilling	Rotary Open Hole	RO	PCD	48.60	14.70	3.00		177	177		2.50	3.00	0.50	7	0.0	Clear	0.00	
03:30	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	3.50		146	146		3.00	3.50	0.50	4	100.0	Grey	0.00	
03:55	Drilling	Rotary Open Hole	RO	PCD	48.60	15.10	4.50		146	146		3.50	4.50	1.00	6	100.0	Grey	0.00	
05:50	Drilling	Rotary Open Hole	RO	PCD	48.60	15.40	5.00		146	146		4.50	5.00	0.50	5	100.0	Grey	0.00	
06:20	Drilling	Rotary Open Hole	RO	PCD	48.60	15.40	6.00		146	146		5.00	6.00	1.00	10	100.0	Grey	0.00	
06:48	Shift	End					6.00					6.00	6.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH_10**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-29
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_10
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-29
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
H	0.00	0.45	1	8	20	0.00	✓
H#	0.50	0.95	2	12	0	0.50	✓
H	1.00	1.45	3	55	100	1.00	✓
H	1.50	1.95	4	46	240	1.50	✓
H	2.00	2.45	5	51	350	2.00	✓
H	2.50	2.95	6	54	300	2.50	✓
PS	3.50	4.50	7	1	200	3.50	✓
PS	5.00	6.00	8	1	120	5.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-30 06:56:24 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_10**
Date	Wednesday 2022-06-29

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	WET	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					6.00					0.00	0.00	0.00					
07:52	Drilling	Rotary Open Hole	RO	PCD	48.60	15.20	6.00		146	146		6.00	6.50	0.50	5	100.0	Grey	0.00	
08:21	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	6.50		146	146		6.50	7.00	0.50	5	100.0	Grey	0.00	
08:55	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	7.00		146	146		7.00	7.50	0.50	5	100.0	Grey	0.00	
09:18	Drilling	Rotary Open Hole	RO	PCD	48.60	14.80	7.50		146	146		7.50	8.50	1.00	7	100.0	Grey	0.00	
09:50	Drilling	Rotary Open Hole	RO	PCD	48.60	14.90	8.50		146	146		8.50	9.00	0.50	5	100.0	Grey	0.00	
10:16	Drilling	Rotary Open Hole	RO	PCD	48.60	14.80	9.00		146	146		9.00	10.00	1.00	8	100.0	Grey	0.00	
11:09	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	10.00		146	146		10.00	11.00	1.00	6	50.0	Grey	0.00	
11:44	Drilling	Rotary Open Hole	RO	PCD	48.60	14.90	11.00		146	146		11.00	11.50	0.50	5	0.0		0.00	
13:08	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	11.50		146	146		11.50	12.50	1.00	7	0.0		0.00	
13:44	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	12.50		146	146		12.50	13.00	0.50	6	0.0		0.00	
14:13	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	13.00		146	146		13.00	14.00	1.00	7	0.0		0.00	
14:37	Drilling	Rotary Open Hole	RO	PCD	48.60	15.10	14.00		146	146		14.00	15.00	1.00	10	0.0		0.00	
15:11	Drilling	Rotary Open Hole	RO	PCD	48.60	15.10	15.00		146	146		15.00	16.00	1.00	8	0.0		0.00	
15:50	Drilling	Rotary Open Hole	RO	PCD	48.60	15.20	16.00		146	146		16.00	16.50	0.50	5	0.0		0.00	
16:14	Drilling	Rotary Open Hole	RO	PCD	48.60	15.30	16.50		146	146		16.50	17.50	1.00	5	0.0		0.00	
16:45	Drilling	Rotary Open Hole	RO	PCD	48.60	15.20	17.50		146	146		17.50	18.50	1.00	8	0.0		0.00	
17:16	Drilling	Rotary Open Hole	RO	PCD	48.60	15.30	18.50		146	146		18.50	19.00	0.50	4	0.0		0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
6.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 4: 7.00 - 8.42m
CPT 5: 8.50 - 10.00m
CPT 6: 11.00 - 12.50m
CPT 7: 12.50 - 14.00m
CPT 8: 16.00 - 17.50m
CPT 9: 19.50 - 21.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	WET	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:10	Drilling	Rotary Open Hole	RO	PCD	48.60	15.30	19.00		146	146		19.00	19.50	0.50	5	0.0		0.00	
19:00	Shift	End					19.00					19.50	19.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 4: 7.00 - 8.42m
CPT 5: 8.50 - 10.00m
CPT 6: 11.00 - 12.50m
CPT 7: 12.50 - 14.00m
CPT 8: 16.00 - 17.50m
CPT 9: 19.50 - 21.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH10**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	WET	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 4: 7.00 - 8.42m
CPT 5: 8.50 - 10.00m
CPT 6: 11.00 - 12.50m
CPT 7: 12.50 - 14.00m
CPT 8: 16.00 - 17.50m
CPT 9: 19.50 - 21.00m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	WET	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
H	6.00	6.45	9	100	200	6.00	✓
H	6.50	6.95	10	75	200	6.50	✓
PS	7.50	8.50	11	0	800	7.50	✓
PS	9.00	10.00	12	0	700	9.00	✓
PS	10.00	10.50	13	0	300	10.00	✓
PS	10.50	11.00	14	0	500	10.00	✓
PS	11.50	12.50	15	0	950	11.50	✓
PS	13.00	14.00	16	0	950	13.00	✓
PS	14.00	15.00	17	0	550	14.00	✓
PS	15.00	15.50	18	0	500	15.00	✓
PS	15.50	16.00	19	0	400	15.00	✓
PS	16.50	17.50	20	0	1000	16.50	✓
PS	17.50	18.00	21	0	500	17.50	✓
PS	18.00	18.50	22	0	350	17.50	✓
PS	18.50	18.80	23	0	170	18.50	✓
PS	19.00	19.30	24	0	250	19.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 4: 7.00 - 8.42m
CPT 5: 8.50 - 10.00m
CPT 6: 11.00 - 12.50m
CPT 7: 12.50 - 14.00m
CPT 8: 16.00 - 17.50m
CPT 9: 19.50 - 21.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH10**
Date	Thursday 2022-06-30

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-30 18:47:03 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	10
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					19.50					19.50	19.50	0.00					
19:25	Drilling	Rotary Core	RC	PCD	48.60	15.00	21.00		146	146	102	19.50	21.00	1.50	8	0.0	Clear	1.50	1
19:50	Drilling	Rotary Core	RC	PCD	48.60	15.00	22.50		146	146	102	21.00	22.50	1.50	7	0.0	Clear	1.50	2
20:50	Drilling	Rotary Core	RC	PCD	48.60	15.00	24.00		146	146	102	22.50	24.00	1.50	6	0.0	Clear	1.30	3
21:15	Drilling	Rotary Core	RC	PCD	48.60	15.00	25.50		146	146	102	24.00	25.50	1.50	4	0.0	Clear	1.50	4
22:00	Drilling	Rotary Core	RC	PCD	48.60	15.00	27.00		146	146	102	25.50	27.00	1.50	12	0.0	Clear	1.29	5
22:20	Drilling	Rotary Core	RC	PCD	48.60	15.00	28.50		146	146	102	27.00	28.50	1.50	12	0.0	Clear	0.38	6
23:20	Drilling	Rotary Core	RC	PCD	48.60	15.00	28.90		146	146	102	28.50	28.90	0.40	4	0.0	Clear	0.10	7
00:00	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	29.00		146	146		28.90	29.00	0.10	4	0.0	Clear	0.00	
01:55	Drilling	Rotary Core	RC	PCD	48.60	15.00	29.50		146	146	102	29.00	29.50	0.50	1	0.0	Clear	0.20	8
02:45	Drilling	Rotary Core	RC	PCD	48.60	15.00	31.00		146	146	102	29.50	31.00	1.50	8	0.0	Clear	1.50	9
04:25	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	31.50		146	146		31.00	31.50	0.50	5	0.0	Clear	0.00	
05:00	Drilling	Rotary Core	RC	PCD	48.60	15.00	32.50		146	146	102	31.50	32.50	1.00	8	0.0	Clear	0.76	10
05:55	Drilling	Rotary Core	RC	PCD	48.60	15.00	34.00		146	146	102	32.50	33.60	1.10	6	0.0	Clear	1.10	11
06:20	Drilling	Rotary Core	RC	PCD	48.60	15.00	34.50		146	146	102	33.60	34.50	0.90	6	0.0	Clear	0.90	12
07:00	Shift	End					34.50					34.50	34.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	12	Bearing	

REMARKS

CPT 10 - 22.50m to 22.77m.
CPT 11 - 25.50m to 26.85m.
CPT 12 - 29.00m to 29.29m.
CPT 13 - 29.50m to 31.00m.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**10**	
Contract No	F186642	Crew 2	J. Green	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 10 - 22.50m to 22.77m.
CPT 11 - 25.50m to 26.85m.
CPT 12 - 29.00m to 29.29m.
CPT 13 - 29.50m to 31.00m.

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**10**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-30
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
H#	29.00	29.30	25	100	0	29.00	✓
P#	31.50	32.00	26			32.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 10 - 22.50m to 22.77m.
CPT 11 - 25.50m to 26.85m.
CPT 12 - 29.00m to 29.29m.
CPT 13 - 29.50m to 31.00m.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**10**
Date	Thursday 2022-06-30

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-01 06:47:35 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Fair	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:20	Shift	Start					34.50					0.00	0.00	0.00					
07:20	Drilling	Rotary Core	RC	PCD	48.60	15.00	34.50		146	146	102	34.50	36.00	1.50	12	0.0		0.00	13
09:00	Drilling	Rotary Core	RC	PCD	48.60	15.00	35.00		146	146	102	36.00	36.50	0.50	10	0.0		1.50	14
10:10	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	36.50		146	146		36.50	37.00	0.50	6	0.0		0.00	
10:38	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	37.00		146	146		37.00	38.00	1.00	6	0.0		0.00	
11:00	Drilling	Rotary Open Hole	RO	PCD	48.60	15.00	38.00		146	146		38.00	38.50	0.50	4	0.0		0.00	
11:35	Drilling	Rotary Core	RC	PCD	48.60	15.00	38.50		146	146	102	38.50	40.00	1.50	17	0.0		0.50	15
13:15	Drilling	Rotary Core	RC	PCD	48.60	14.80	40.00		146	146	102	40.00	41.00	1.00	6	0.0		0.45	16
13:54	Drilling	Rotary Core	RC	PCD	48.60	14.60	41.00		146	146	102	41.00	41.75	0.75	5	0.0		0.40	17
14:28	Drilling	Rotary Core	RC	PCD	48.60	14.50	41.75		146	146	102	41.75	42.50	0.75	6	0.0		0.60	18
15:20	Drilling	Rotary Core	RC	PCD	48.60	14.50	42.50		146	146	102	42.50	43.50	1.00	5	0.0		1.00	19
15:35	Drilling	Rotary Core	RC	PCD	48.60	14.50	43.50		146	146	102	43.50	44.50	1.00	4	0.0		0.90	20
15:55	Drilling	Rotary Core	RC	PCD	48.60	14.60	44.50		146	146	102	44.50	45.00	0.50	6	0.0		0.50	21
16:20	Drilling	Rotary Core	RC	PCD	48.60	14.50	45.00		146	146	102	45.00	46.50	1.50	5	0.0		1.50	22
16:44	Drilling	Rotary Core	RC	PCD	48.60	14.30	46.50		146	146	102	46.50	48.00	1.50	5	0.0		1.25	23
17:08	Drilling	Rotary Core	RC	PCD	48.60	14.20	48.00		146	146	102	48.00	49.50	1.50	5	0.0		0.80	24
18:00	Drilling	Rotary Core	RC	PCD	48.60	14.30	49.50		146	146	102	49.50	51.00	1.50	4	0.0		1.40	25
19:00	Shift	End					49.50					51.00	51.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
34.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	13	Bearing	

REMARKS

CR 13: Unable to retrieve core after four attempts, agree with client reps to NCD from 34.50 - 35.00 and then core down to 36.50m.
CPT 16: 36.50 - 38.00m
CPT 17: 40.00 - 40.43m
CPT 18: 42.50 - 43.20m
CPT 19: 49.50 - 50.80m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Fair	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CR 13: Unable to retrieve core after four attempts, agree with client reps to NCD from 34.50 - 35.00 and then core down to 36.50m.
CPT 16: 36.50 - 38.00m
CPT 17: 40.00 - 40.43m
CPT 18: 42.50 - 43.20m
CPT 19: 49.50 - 50.80m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_10**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Fair	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	37.00	38.00	27	0	750	37.00	✓
PS	38.00	38.40	28	0	350	38.00	✓
PS	38.50	38.60	29	0	60	38.50	✓
PS	41.00	41.10	30	0	0	41.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CR 13: Unable to retrieve core after four attempts, agree with client reps to NCD from 34.50 - 35.00 and then core down to 36.50m.
CPT 16: 36.50 - 38.00m
CPT 17: 40.00 - 40.43m
CPT 18: 42.50 - 43.20m
CPT 19: 49.50 - 50.80m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_10**
Date	Friday 2022-07-01

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-01 18:37:38 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**10**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					51.00					51.00	51.00	0.00					
19:35	Drilling	Rotary Core	RC	PCD	48.60	14.50	52.50		146	146	102	51.00	52.50	1.50	4	0.0	Clear	1.50	26
20:10	Drilling	Rotary Core	RC	PCD	48.60	14.00	54.00		146	146	102	52.50	54.00	1.50	6	0.0	Clear	1.50	27
20:45	Drilling	Rotary Core	RC	PCD	48.60	14.00	55.50		146	146	102	54.00	55.50	1.50	5	0.0	Clear	1.50	28
21:35	Drilling	Rotary Core	RC	PCD	48.60	13.90	56.50		146	146	102	55.50	56.50	1.00	3	0.0	Clear	1.00	29
22:00	Drilling	Rotary Core	RC	PCD	48.60	13.90	58.00		146	146	102	56.50	58.00	1.50	4	0.0	Clear	1.50	30
22:25	Drilling	Rotary Core	RC	PCD	48.60	13.90	59.50		146	146	102	58.00	59.50	1.50	4	0.0	Clear	1.50	31
22:50	Drilling	Rotary Core	RC	PCD	48.60	13.90	60.50		146	146	102	59.50	60.50	1.00	3	0.0	Clear	0.85	32
23:10	Drilling	Rotary Core	RC	PCD	48.60	14.00	61.50		146	146	102	60.50	61.50	1.00	4	0.0	Clear	1.00	33
23:35	Drilling	Rotary Core	RC	PCD	48.60	14.00	62.50		146	146	102	61.50	62.50	1.00	4	0.0	Clear	1.00	34
01:25	Testing	Wireline Geophysics																	
07:00	Shift	End					62.50					62.50	62.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	9	Bearing	

REMARKS

CR 26 slipped, retrieved with short fingers.
CR 27 snagged liner, pumped out.
Bedrock @ 51.50m.
E.O.H. @ 62.50m, confirmed by client rep.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-02 06:41:06 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**10**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CR 26 slipped, retrieved with short fingers.
CR 27 snagged liner, pumped out.
Bedrock @ 51.50m.
E.O.H. @ 62.50m, confirmed by client rep.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-02 06:41:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K.Hack	Borehole No	**10**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CR 26 slipped, retrieved with short fingers.
CR 27 snagged liner, pumped out.
Bedrock @ 51.50m.
E.O.H. @ 62.50m, confirmed by client rep.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-02 06:41:07 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**10**
Date	Friday 2022-07-01

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-02 06:41:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-20
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					0.00					0.00	0.00	0.00					
19:15	Move and Set Up	Moving Equipment																	
03:15	Drilling	Add/Remove Casing																	
04:50	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	0.50		177	177		0.00	0.50	0.50	2	0.0		0.00	
06:30	Drilling	Rotary Open Hole	RO	PCD	45.70	14.10	1.00		177	177		0.50	1.00	0.50	4	0.0		0.00	
07:00	Shift	End					1.00					1.00	1.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 06:49:42 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-20
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 06:49:43 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-20
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P#	0.00	0.50	1			0.50	✓
P#	0.50	1.00	2			1.00	✓
H#	0.50	0.95	3	6	0	1.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 06:49:44 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH12**
Date	Monday 2022-06-20

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 06:49:44 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					1.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
08:07	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	1.00		178	178		1.00	1.50	0.50	10	0.0		0.00	
08:32	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	1.50		178	178		1.50	2.00	0.50	6	0.0		0.00	
08:58	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	2.00		178	178		2.00	2.50	0.50	6	0.0		0.00	
09:15	Move and Set Up	Moving Equipment																	
09:40	Drilling	Running in or Removing																	
10:15	Delay	Rig Maintenance																	
10:35	Move and Set Up	Moving Equipment																	
12:30	Drilling	Rotary Open Hole	RO	PCD	35.70	14.60	2.50		146	146		2.50	3.00	0.50	3	100.0	Grey	0.00	
13:00	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	3.00		146	146		3.00	4.00	1.00	7	100.0	Grey	0.00	
13:24	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	4.00		146	146		4.00	4.50	0.50	4	100.0	Grey	0.00	
13:44	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	4.50		146	146		4.50	5.50	1.00	4	100.0	Grey	0.00	
14:10	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	5.50		146	146		5.50	6.50	1.00	5	100.0	Grey	0.00	
14:37	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	6.50		146	146		6.50	7.00	0.50	3	100.0	Grey	0.00	
15:00	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	7.00		146	146		7.00	8.00	1.00	4	100.0	Grey	0.00	
15:25	Move and Set Up	Moving Equipment																	
17:04	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	8.00		146	146		8.00	8.50	0.50	3	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
1.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 1: 2.50 - 3.95m
CPT 2: 4.00 - 5.50m
CPT 3: 6.50 - 7.96m
CPT 4: 8.00 - 9.48m
CPT 5: 10.50 - 12.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 18:29:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
17:16	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	8.50		146	146		8.50	9.50	1.00	5	100.0	Grey	0.00	
17:41	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	9.50		146	146		9.50	10.50	1.00	5	100.0	Grey	0.00	
18:11	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	10.50		146	146		10.50	11.00	0.50	3	100.0	Grey	0.00	
18:23	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	11.00		146	146		11.00	12.00	1.00	5	100.0	Grey	0.00	
19:00	Shift	End					11.00					12.00	12.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 1: 2.50 - 3.95m
CPT 2: 4.00 - 5.50m
CPT 3: 6.50 - 7.96m
CPT 4: 8.00 - 9.48m
CPT 5: 10.50 - 12.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 18:29:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	GOOD	Veh/Vess	Neptune	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 1: 2.50 - 3.95m
CPT 2: 4.00 - 5.50m
CPT 3: 6.50 - 7.96m
CPT 4: 8.00 - 9.48m
CPT 5: 10.50 - 12.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	1.00	1.50	4	0	0	1.00	✓
H	1.50	1.95	5	30	250	1.50	✓
H	2.00	2.45	6	25	300	2.00	✓
PS	3.00	4.00	7	0	500	3.00	✓
PS	4.50	5.50	8	0	600	4.50	✓
PS	5.50	6.00	9	0	500	5.50	✓
PS	6.00	6.50	10	0	500	5.50	✓
PS	7.00	8.00	11	0	700	7.00	✓
PS	8.50	9.50	12	0	700	8.50	✓
PS	9.50	10.00	13	0	400	9.50	✓
PS	10.00	10.50	14	0	500	9.50	✓
PS	11.00	12.00	15	0	300	11.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 1: 2.50 - 3.95m
CPT 2: 4.00 - 5.50m
CPT 3: 6.50 - 7.96m
CPT 4: 8.00 - 9.48m
CPT 5: 10.50 - 12.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 18:29:09 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH12**
Date	Tuesday 2022-06-21

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-21 18:29:09 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J.Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					12.00					12.00	12.00	0.00					
19:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.20	12.50		146	146		12.00	12.50	0.50	5	100.0	Grey	0.00	
20:30	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	13.50		146	146		12.50	13.50	1.00	7	100.0	Grey	0.00	
20:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	14.00		146	146		13.50	14.00	0.50	4	100.0	Grey	0.00	
21:30	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	14.50		146	146		14.00	14.50	0.50	4	100.0	Grey	0.00	
22:15	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	15.00		146	146		14.50	15.00	0.50	5	100.0	Grey	0.00	
22:35	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	16.00		146	146		15.00	16.00	1.00	8	100.0	Grey	0.00	
23:20	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	16.50		146	146		16.00	16.50	0.50	6	100.0	Grey	0.00	
23:45	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	17.50		146	146		16.50	17.50	1.00	9	100.0	Grey	0.00	
01:05	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	18.50		146	146		17.50	18.50	1.00	10	100.0	Grey	0.00	
02:05	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	19.00		146	146		18.50	19.00	0.50	7	100.0	Grey	0.00	
02:35	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	20.00		146	146		19.00	20.00	1.00	10	100.0	Grey	0.00	
03:30	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	21.00		146	146		20.00	21.00	1.00	10	100.0	Grey	0.00	
04:10	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	21.50		146	146		21.00	21.50	0.50	7	100.0	Grey	0.00	
04:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	22.50		146	146		21.50	22.50	1.00	11	100.0	Grey	0.00	
05:45	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	23.00		146	146		22.50	23.00	0.50	7	100.0	Grey	0.00	
06:10	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	24.00		146	146		23.00	24.00	1.00	12	100.0	Grey	0.00	
07:00	Shift	End					24.00					24.00	24.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

push samples 16,17,18 and 20 thick walled with catcher.
push samples 19, 21 to 24 and 27 thick walled.
push samples 25 and 26 thin walled.
CPT 7 14.50 to 16.00m
CPT 8 16.00 to 17.50m
CPT 9 18.50 to 20.00m
CPT 10 20.00 to 21.50m
CPT 11 22.50 to 24.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J.Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 16,17,18 and 20 thick walled with catcher.
push samples 19, 21 to 24 and 27 thick walled.
push samples 25 and 26 thin walled.
CPT 7 14.50 to 16.00m
CPT 8 16.00 to 17.50m
CPT 9 18.50 to 20.00m
CPT 10 20.00 to 21.50m
CPT 11 22.50 to 24.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 06:45:47 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J.Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-21
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	12.50	13.10	16	1	450	13.50	✓
PS	13.50	13.90	17	1	420	13.90	✓
PS	14.00	14.40	18	1	100	14.40	✓
PS	14.00	14.50	19	1	500	14.50	✓
PS	15.00	15.30	20	1	300	15.30	✓
PS	16.50	17.00	21	1	150	17.00	✓
PS	17.50	18.00	22	1	480	18.00	✓
P#	18.00	18.05	23			18.05	✓
PS	19.00	19.30	24	1	300	19.30	✓
PS	21.00	21.50	25	1	500	21.50	✓
PS	21.50	22.00	26	1	450	22.00	✓
PS	22.00	22.50	27	1	500	22.50	✓
PS	23.00	23.40	28	1	300	23.40	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 16,17,18 and 20 thick walled with catcher.
push samples 19, 21 to 24 and 27 thick walled.
push samples 25 and 26 thin walled.
CPT 7 14.50 to 16.00m
CPT 8 16.00 to 17.50m
CPT 9 18.50 to 20.00m
CPT 10 20.00 to 21.50m
CPT 11 22.50 to 24.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 06:45:48 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH12**
Date	Tuesday 2022-06-21

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 06:45:48 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					24.00					0.00	0.00	0.00					
07:01	HSSEQ	Toolbox Talk																	
07:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	24.00		146	146		24.00	24.50	0.50	5	100.0	Grey	0.00	
08:20	Drilling	Rotary Open Hole	RO	PCD	35.70	14.10	24.50		146	146		24.50	25.50	1.00	8	100.0	Grey	0.00	
08:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.20	25.50		146	146		25.50	26.50	1.00	8	100.0	Grey	0.00	
09:26	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	26.50		146	146		26.50	27.50	1.00	6	100.0	Grey	0.00	
09:59	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	27.50		146	146		27.50	28.00	0.50	3	100.0	Grey	0.00	
10:33	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	28.00		146	146		28.00	29.00	1.00	8	100.0	Grey	0.00	
11:08	Drilling	Rotary Open Hole	RO	PCD	35.70	14.60	29.00		146	146		29.00	30.00	1.00	5	100.0	Grey	0.00	
11:45	Drilling	Rotary Open Hole	RO	PCD	35.70	14.70	30.00		146	146		30.00	31.00	1.00	9	100.0	Grey	0.00	
13:15	Drilling	Rotary Open Hole	RO	PCD	35.70	14.70	31.00		146	146		31.00	31.50	0.50	5	100.0	Grey	0.00	
13:35	Drilling	Rotary Open Hole	RO	PCD	35.70	14.70	31.50		146	146		31.50	32.50	1.00	6	100.0	Grey	0.00	
14:07	Drilling	Rotary Open Hole	RO	PCD	35.70	14.60	32.50		146	146		32.50	33.00	0.50	3	100.0	Grey	0.00	
14:32	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	33.00		146	146		33.00	33.50	0.50	4	100.0	Grey	0.00	
15:17	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	33.50		146	146		33.50	34.00	0.50	4	100.0	Grey	0.00	
15:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	34.00		146	146		34.00	34.50	0.50	3	100.0	Grey	0.00	
16:21	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	34.50		146	146		34.50	35.20	0.70	4	100.0	Grey	0.00	
16:59	Drilling	Rotary Open Hole	RO	PCD	35.70	14.60	35.50		146	146		35.20	36.00	0.80	5	100.0	Grey	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
24.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 12: 24.00 - 25.50m
CPT 13: 27.50 - 29.00m
CPT 14: 31.00 - 32.50m
PS 40: Driller drilled to wrong depth and actually pushed from 32.30 - 32.80m
CPT 15: 33.50 - 33.95m
CPT 16: 34.00 - 35.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 18:39:15 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
17:30	Drilling	Rotary Open Hole	RO	PCD	35.70	14.50	36.00		146	146		36.00	36.50	0.50	4	100.0	Grey	0.00	
17:58	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	36.50		146	146		36.50	37.00	0.50	5	100.0	Grey	0.00	
18:24	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	37.00		146	146		37.00	37.50	0.50	5	100.0	Grey	0.00	
19:00	Shift	End					37.00					37.50	37.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 12: 24.00 - 25.50m
CPT 13: 27.50 - 29.00m
CPT 14: 31.00 - 32.50m
PS 40: Driller drilled to wrong depth and actually pushed from 32.30 - 32.80m
CPT 15: 33.50 - 33.95m
CPT 16: 34.00 - 35.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 18:39:15 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 12: 24.00 - 25.50m
CPT 13: 27.50 - 29.00m
CPT 14: 31.00 - 32.50m
PS 40: Driller drilled to wrong depth and actually pushed from 32.30 - 32.80m
CPT 15: 33.50 - 33.95m
CPT 16: 34.00 - 35.50m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH12**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	24.50	25.50	29	0	620	24.50	✓
PS	25.50	26.00	30	0	500	25.50	✓
PS	26.00	26.50	31	0	500	25.50	✓
PS	26.50	27.00	32	0	470	26.50	✓
PS	27.00	27.50	33	0	500	26.50	✓
PS	28.00	29.00	34	0	430	28.00	✓
PS	29.00	29.50	35	0	440	29.00	✓
PS	29.50	30.00	36	0	340	29.00	✓
PS	30.00	30.50	37	0	450	30.00	✓
PS	30.50	31.00	38	0	350	30.00	✓
PS	31.50	32.50	39	0	550	31.50	✓
PS	32.50	33.00	40	0	300	32.50	✓
PS	33.00	33.50	41	0	330	33.00	✓
PS	33.50	34.00	42	0	350	33.50	✓
PS	34.50	35.20	43	0	400	34.50	✓
PS	35.20	36.00	44	0	800	35.50	✓
PS	36.00	36.50	45	0	500	36.00	✓
PS	36.50	37.00	46	0	500	36.50	✓
PS	37.00	37.50	47	0	500	37.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 12: 24.00 - 25.50m
CPT 13: 27.50 - 29.00m
CPT 14: 31.00 - 32.50m
PS 40: Driller drilled to wrong depth and actually pushed from 32.30 - 32.80m
CPT 15: 33.50 - 33.95m
CPT 16: 34.00 - 35.50m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 18:39:17 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH12**
Date	Wednesday 2022-06-22

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-22 18:39:18 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					37.50					37.50	37.50	0.00					
19:45	Drilling	Rotary Open Hole	RO	PCD	35.70	14.40	38.50		146	146		37.50	38.50	1.00	15	100.0	Grey	0.00	
20:20	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	39.00		146	146		38.50	39.00	0.50	9	100.0	Grey	0.00	
21:05	Drilling	Rotary Open Hole	RO	PCD	35.70	14.20	40.00		146	146		39.00	40.00	1.00	12	100.0	Grey	0.00	
21:55	Drilling	Rotary Open Hole	RO	PCD	35.70	14.30	41.00		146	146		40.00	41.00	1.00	13	100.0	Grey	0.00	
22:40	Drilling	Rotary Core	RC	PCD	35.70	14.40	42.50		146	146	102	41.00	42.50	1.50	9	100.0	Grey	1.50	1
23:15	Drilling	Rotary Core	RC	PCD	35.70	14.50	44.00		146	146	102	42.50	44.00	1.50	13	100.0	Red	1.50	2
23:50	Drilling	Rotary Core	RC	PCD	35.70	14.40	45.50		146	146	102	44.00	45.50	1.50	14	100.0	Red	1.50	3
00:45	Drilling	Rotary Core	RC	PCD	35.70	14.40	47.00		146	146	102	45.50	47.00	1.50	15	100.0	Red	1.50	4
01:10	Drilling	Rotary Core	RC	PCD	35.70	14.40	48.50		146	146	102	47.00	48.50	1.50	12	100.0	Red	1.50	5
01:35	Drilling	Rotary Core	RC	PCD	35.70	14.20	50.00		146	146	102	48.50	50.00	1.50	13	100.0	Red	1.50	6
02:15	Drilling	Rotary Core	RC	PCD	35.70	14.30	51.00		146	146	102	50.00	51.00	1.00	12	100.0	Red	1.00	7
02:45	Drilling	Rotary Core	RC	PCD	35.70	14.20	52.50		146	146	102	51.00	52.50	1.50	24	100.0	Red	1.50	8
03:15	Drilling	Rotary Core	RC	PCD	35.70	14.20	53.50		146	146	102	52.50	53.50	1.00	18	100.0	Red	1.00	9
04:25	Testing	Wireline Geophysics																	
07:00	Shift	End					53.50					53.50	53.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	9	Bearing	

REMARKS

push samples 48,51 and 52 with thick walled shelby.
push samples 49 and 50 with thin walled shelby.
CPT 17 - 37.50m to 39.00m
CPT 18 - 41.00m to 42.50m
sandstone @ 42.59m
E.O.H. @ 53.50m confirmed by client.
geobore pulled back to 35.60m BML for geo-phys logging.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-23 06:46:48 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 48,51 and 52 with thick walled shelby.
push samples 49 and 50 with thin walled shelby.
CPT 17 - 37.50m to 39.00m
CPT 18 - 41.00m to 42.50m
sandstone @ 42.59m
E.O.H. @ 53.50m confirmed by client.
geobore pulled back to 35.60m BML for geo-phys logging.

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-23 06:46:48 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH12**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-22
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	38.50	39.00	48	1	420	39.00	✓
PS	39.00	39.50	49	1	480	39.50	✓
PS	39.50	40.00	50	1	460	40.00	✓
PS	40.00	40.50	51	1	450	40.50	✓
PS	40.50	41.00	52	1	500	41.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 48,51 and 52 with thick walled shelby.
push samples 49 and 50 with thin walled shelby.
CPT 17 - 37.50m to 39.00m
CPT 18 - 41.00m to 42.50m
sandstone @ 42.59m
E.O.H. @ 53.50m confirmed by client.
geobore pulled back to 35.60m BML for geo-phys logging.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-23 06:46:49 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH12**
Date	Wednesday 2022-06-22

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-23 06:46:49 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					0.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:20	Standby	Waiting on Access																	
07:45	Drilling	Add/Remove Casing																	
09:15	Move and Set Up	Moving Equipment																	
11:15	Drilling	Add/Remove Casing																	
12:00	Move and Set Up	Moving Equipment																	
13:50	Delay	Breakdown - Equipment																	
15:10	Drilling	Rotary Open Hole	RO	PCD	54.50	15.50	0.00		178	178		0.00	0.50	0.50	3	0.0		0.00	
16:05	Drilling	Rotary Open Hole	RO	PCD	54.50	15.50	0.50		178	178		0.50	1.00	0.50	5	0.0		0.00	
16:28	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	1.00		178	178		1.00	1.50	0.50	4	0.0		0.00	
16:48	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	1.50		178	178		1.50	2.00	0.50	4	0.0		0.00	
17:10	Move and Set Up	Moving Equipment																	
17:39	Delay	Breakdown - Equipment																	
17:55	Drilling	Running in or Removing																	
18:25	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	2.00		146	146		2.00	2.50	0.50	5	0.0		0.00	
19:00	Shift	End					2.00					2.50	2.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

13:50 Jean Lutz measuring cable snapped. Stop and repair.
17:39 Jean Lutz measuring cable not retracting properly. Stop and adjust.
CPT 1 : 2.50m - 4.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-03 18:49:09 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

13:50 Jean Lutz measuring cable snapped. Stop and repair.
17:39 Jean Lutz measuring cable not retracting properly. Stop and adjust.
CPT 1 : 2.50m - 4.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-03 18:49:10 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	0.00	0.50	1	0	50	0.00	✓
PS	0.50	1.00	2	0	10	0.50	✓
H	0.50	0.95	3	20	200	0.50	✓
H	1.00	1.45	4	20	150	1.00	✓
H	1.50	1.95	5	22	250	1.50	✓
H	2.00	2.45	6	36	350	2.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

13:50 Jean Lutz measuring cable snapped. Stop and repair.
17:39 Jean Lutz measuring cable not retracting properly. Stop and adjust.
CPT 1 : 2.50m - 4.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_13**
Date	Sunday 2022-07-03

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-03 18:49:11 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	13
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Yes	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					2.50					2.50	2.50	0.00					
20:00	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	3.00		146	146		2.50	3.00	0.50	4	0.0	Clear	0.00	
20:40	Drilling	Rotary Open Hole	RO	PCD	54.50	15.50	4.00		146	146		3.00	4.00	1.00	6	75.0	Grey	0.00	
21:20	Drilling	Rotary Open Hole	RO	PCD	54.50	15.30	4.50		146	146		4.00	4.50	0.50	5	100.0	Grey	0.00	
22:00	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	5.00		146	146		4.50	5.00	0.50	5	75.0	Grey	0.00	
22:40	Drilling	Rotary Open Hole	RO	PCD	54.50	15.00	5.50		146	146		5.00	5.50	0.50	6	0.0	Clear	0.00	
23:10	Drilling	Rotary Open Hole	RO	PCD	54.50	15.00	6.50		146	146		5.50	6.50	1.00	7	0.0	Clear	0.00	
23:45	Drilling	Rotary Open Hole	RO	PCD	54.50	15.00	7.00		146	146		6.50	7.00	0.50	5	0.0	Clear	0.00	
00:05	Drilling	Rotary Open Hole	RO	PCD	54.50	15.00	8.00		146	146		7.00	8.00	1.00	5	0.0	Clear	0.00	
01:20	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	9.00		146	146		8.00	9.00	1.00	5	0.0	Clear	0.00	
01:55	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	9.50		146	146		9.00	9.50	0.50	4	0.0	Clear	0.00	
02:15	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	10.50		146	146		9.50	10.50	1.00	5	0.0	Clear	0.00	
02:50	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	11.00		146	146		10.50	11.00	0.50	4	0.0	Clear	0.00	
03:10	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	12.00		146	146		11.00	12.00	1.00	6	0.0	Clear	0.00	
03:40	Drilling	Rotary Open Hole	RO	PCD	54.50	15.10	13.00		146	146		12.00	13.00	1.00	7	0.0	Clear	0.00	
04:30	Drilling	Rotary Open Hole	RO	PCD	54.50	15.20	14.00		146	146		13.00	14.00	1.00	9	0.0	Clear	0.00	
05:30	Drilling	Rotary Core	RC	PCD	54.50	15.20	14.50		146	146	102	14.00	14.50	0.50	7	0.0	Clear	0.50	1
06:05	Drilling	Rotary Core	RC	PCD	54.50	15.20	15.50		146	146	102	14.50	15.50	1.00	12	0.0	Clear	0.30	2

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	2	Bearing	

REMARKS

CPT 2, 5.00m - 6.50m.
CPT 3, 6.50m -8.00m.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	13
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Yes	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	End					15.50					15.50	15.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	2	Bearing	

REMARKS

CPT 2, 5.00m - 6.50m.
CPT 3, 6.50m -8.00m.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	13
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Yes	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 2, 5.00m - 6.50m.
CPT 3, 6.50m -8.00m.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 06:48:49 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	13
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-07-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Yes	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	3.00	4.00	7	1	880	4.00	✓
PS	4.00	4.50	8	1	500	4.50	✓
PS	4.50	5.00	9	1	180	5.00	✓
PS	5.50	6.30	10	1	800	6.30	✓
PS	7.00	7.70	11	1	700	7.70	✓
PS	8.00	8.50	12	1	500	8.50	✓
PS	8.50	9.00	13	1	500	9.00	✓
PS	9.50	10.20	14	1	700	10.20	✓
PS	11.00	11.70	15	1	700	11.70	✓
PS	12.00	13.00	16	1	1000	13.00	✓
PS	13.00	13.50	17	1	500	13.50	✓
PS	13.50	14.00	18	1	500	14.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 2, 5.00m - 6.50m.
CPT 3, 6.50m -8.00m.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 06:48:50 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**13**
Date	Sunday 2022-07-03

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 06:48:51 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_13
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					15.50					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:25	Move and Set Up	Set up Rig																	
07:50	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	15.50		146	146		15.50	16.50	1.00	10	0.0		0.00	
08:32	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	16.50		146	146		16.50	17.50	1.00	9	0.0		0.00	
09:15	Drilling	Rotary Core	RC	PCD	54.50	15.60	17.50		146	146	102	17.50	19.00	1.50	7	0.0		1.50	3
10:08	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	19.00		146	146		19.00	20.00	1.00	10	0.0		0.00	
10:50	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	20.00		146	146		20.00	21.00	1.00	9	0.0		0.00	
11:54	Drilling	Rotary Core	RC	PCD	54.50	15.30	21.00		146	146	102	21.00	22.50	1.50	5	0.0		0.70	4
12:15	Delay	Drilling Personnel Absent																	
12:45	Standby	Waiting on Access																	
13:24	Drilling	Rotary Core	RC	PCD	54.50	15.40	22.50		146	146	102	22.50	23.50	1.00	5	0.0		0.60	5
13:55	Drilling	Rotary Core	RC	PCD	54.50	15.30	23.50		146	146	102	23.50	24.50	1.00	5	0.0		0.00	6
15:05	Drilling	Rotary Core	RC	PCD	54.50	15.40	24.50		146	146	102	24.50	26.00	1.50	11	0.0		1.10	7
15:49	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	26.00		146	146		26.00	27.00	1.00	12	0.0		0.00	
16:34	Drilling	Rotary Open Hole	RO	PCD	54.50	15.50	27.00		146	146		27.00	28.00	1.00	6	0.0		0.00	
17:31	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	28.00		146	146		28.00	28.50	0.50	4	0.0		0.00	
17:45	Drilling	Rotary Open Hole	RO	PCD	54.50	15.60	28.00		146	146		28.50	29.50	1.00	4	0.0		0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
15.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	5	Bearing	

REMARKS

CPT 7: 17.50 - 19.00m
CPT 8: 21.00 - 22.10m
CPT 9: 24.50 - 26.00m
CPT 10: 28.00 - 29.48m
CPT 11: 29.50 - 30.92m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 18:36:33 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	End					28.00					29.50	29.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	5	Bearing	

REMARKS

CPT 7: 17.50 - 19.00m
CPT 8: 21.00 - 22.10m
CPT 9: 24.50 - 26.00m
CPT 10: 28.00 - 29.48m
CPT 11: 29.50 - 30.92m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 18:36:33 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_13
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 7: 17.50 - 19.00m
CPT 8: 21.00 - 22.10m
CPT 9: 24.50 - 26.00m
CPT 10: 28.00 - 29.48m
CPT 11: 29.50 - 30.92m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 18:36:34 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	15.50	16.00	19	0	400	15.50	✓
PS	16.00	16.50	20	0	400	15.50	✓
PS	16.50	17.00	21	0	400	16.50	✓
PS	17.00	17.50	22	0	450	16.50	✓
PS	19.00	19.50	23	0	400	19.00	✓
PS	19.50	20.00	24	0	400	19.00	✓
PS	20.00	20.50	25	0	450	20.00	✓
PS	20.50	21.00	26	0	500	20.00	✓
PS	21.00	21.60	27	0	600	21.00	✓
PS	22.50	23.00	28	0	150	22.50	✓
PS	26.00	26.50	29	0	450	26.00	✓
PS	26.50	27.00	30	0	500	26.00	✓
PS	27.00	27.40	31	0	400	27.00	✓
PS	27.50	27.90	32	0	350	27.00	✓
PS	28.50	29.50	33	0	500	28.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 7: 17.50 - 19.00m
CPT 8: 21.00 - 22.10m
CPT 9: 24.50 - 26.00m
CPT 10: 28.00 - 29.48m
CPT 11: 29.50 - 30.92m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_13**
Date	Monday 2022-07-04

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-04 18:36:35 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH13**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					29.50					29.50	29.50	0.00					
19:15	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	30.00		146	146		29.50	30.00	0.50	6	0.0	Clear	0.00	
20:35	Drilling	Rotary Open Hole	RO	PCD	54.50	15.40	31.00		146	146		30.00	31.00	1.00	12	0.0	Clear	0.00	
21:15	Drilling	Rotary Core	RC	PCD	54.50	15.40	32.00		146	146	102	31.00	32.00	1.00	12	0.0	Clear	1.00	8
21:45	Drilling	Rotary Core	RC	PCD	54.50	15.50	33.00		146	146	102	32.00	33.00	1.00	13	0.0	Clear	1.00	9
22:20	Drilling	Rotary Core	RC	PCD	54.50	15.40	34.50		146	146	102	33.00	34.50	1.50	24	0.0	Clear	1.50	10
23:00	Drilling	Rotary Core	RC	PCD	54.50	15.30	35.50		146	146	102	34.50	35.50	1.00	20	0.0	Clear	1.00	11
23:45	Drilling	Rotary Core	RC	PCD	54.50	15.20	37.00		146	146	102	35.50	37.00	1.50	24	0.0	Clear	1.50	12
01:20	Drilling	Rotary Core	RC	PCD	54.50	15.20	38.50		146	146	102	37.00	38.50	1.50	21	0.0	Clear	1.50	13
02:00	Drilling	Rotary Core	RC	PCD	54.50	15.20	40.00		146	146	102	38.50	40.00	1.50	35	0.0	Clear	1.50	14
02:50	Drilling	Rotary Core	RC	PCD	54.50	15.30	41.50		146	146	102	40.00	41.50	1.50	26	0.0	Clear	1.50	15
03:40	Drilling	Rotary Core	RC	PCD	54.50	15.30	43.00		146	146	102	41.50	43.00	1.50	9	0.0	Clear	1.50	16
04:05	Drilling	Rotary Core	RC	PCD	54.50	15.30	44.50		146	146	102	43.00	44.50	1.50	13	0.0	Clear	1.50	17
04:35	Drilling	Rotary Core	RC	PCD	54.50	15.40	46.00		146	146	102	44.50	46.00	1.50	10	0.0	Clear	1.50	18
05:05	Drilling	Rotary Core	RC	PCD	54.50	15.40	47.50		146	146	102	46.00	47.50	1.50	13	0.0	Clear	1.50	19
05:35	Drilling	Rotary Core	RC	PCD	54.50	15.30	49.00		146	146	102	47.50	49.00	1.50	22	0.0	Clear	1.50	20
06:00	Drilling	Rotary Core	RC	PCD	54.50	15.30	50.00		146	146	102	49.00	50.00	1.00	21	0.0	Clear	1.00	21
07:00	Shift	End					50.00					50.00	50.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	14	Bearing	

REMARKS

Mudstone @ 33.50m BML.
Sandstone @ 42.10m BML.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH13**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

Mudstone @ 33.50m BML.
Sandstone @ 42.10m BML.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH13**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-07-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	wet	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	30.00	30.50	34	1	150	30.00	✓
PS	31.00	31.40	35	1	400	31.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

Mudstone @ 33.50m BML.
Sandstone @ 42.10m BML.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH13**
Date	Monday 2022-07-04

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-05
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	complete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					50.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:30	Drilling	Add/Remove Casing																	
07:45	Delay	Drilling Personnel Absent																	
08:40	Drilling	Rotary Core	RC	PCD	54.50	15.80	51.50		146	146	102	50.00	51.50	1.50	40	0.0		0.00	22
09:45	Move and Set Up	Set up Rig																	
10:00	Drilling	Running in or Removing																	
10:20	Testing	Wireline Geophysics																	
12:00	Delay	Drilling Personnel Absent																	
12:30	Testing	Wireline Geophysics																	
13:55	Drilling	Running in or Removing																	
15:35	Testing	Wireline Geophysics																	
17:22	Drilling	Running in or Removing																	
18:10	Drilling	Pulling out Casing																	
19:00	Shift	End					51.50					51.50	51.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)
14:39	7.00	✓	146	146	7.00	40.00	33.00	

FLUSH

Depth (m)	Flush
50.00	Pure bore
51.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	1	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-05
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	complete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-05 18:53:49 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_13**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-07-05
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	complete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-05 18:53:49 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_13**
Date	Tuesday 2022-07-05

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-05 18:53:49 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-07-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					0.00					0.00	0.00	0.00					
22:50	Drilling	Cable Percussion	RO	PCD	44.50	14.50	2.20		177	177		0.00	2.20	2.20	45	0.0	Clear	0.00	
07:00	Shift	End					2.20					2.20	2.20	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-07-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-07 06:54:44 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-07-06
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion: incomplete	BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
B	0.00	0.50	1				✓
B	0.50	1.00	2				✓
B	1.00	1.50	3				✓
B	1.50	2.20	4				✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_20**
Date	Wednesday 2022-07-06

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_20**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					2.20					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
07:19	Drilling	Rotary Open Hole	RO	PCD	44.50	14.70	2.20		146	146		2.20	2.60	0.40	3	100.0	Grey	0.00	
18:18	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	2.60		146	146		2.60	3.60	1.00	8	100.0	Grey	0.00	
09:17	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	3.60		146	146		3.60	4.10	0.50	3	100.0	Grey	0.00	
09:40	Drilling	Rotary Open Hole	RO	PCD	44.50	15.20	4.10		146	146		4.10	4.60	0.50	3	100.0	Grey	0.00	
10:15	Drilling	Rotary Open Hole	RO	PCD	44.50	15.20	4.60		146	146		4.60	5.10	0.50	3	100.0	Grey	0.00	
10:47	Drilling	Rotary Open Hole	RO	PCD	44.50	15.40	5.10		146	146		5.10	5.60	0.50	3	0.0	Grey	0.00	
11:10	Drilling	Rotary Open Hole	RO	PCD	44.50	15.30	5.60		146	146		5.60	6.10	0.50	4	0.0	Grey	0.00	
11:51	Drilling	Rotary Open Hole	RO	PCD	44.50	15.30	6.10		146	146		6.10	6.60	0.50	3	0.0		0.00	
12:50	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	6.60		146	146		6.60	7.60	1.00	4	0.0		0.00	
13:31	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	7.60		146	146		7.60	8.60	1.00	8	0.0		0.00	
14:08	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	8.60		146	146		8.60	9.60	1.00	8	0.0		0.00	
14:55	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	9.60		146	146		9.60	10.10	0.50	6	0.0		0.00	
15:20	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	10.10		146	146		10.10	11.10	1.00	8	0.0		0.00	
15:51	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	11.10		146	146		11.10	12.10	1.00	7	0.0		0.00	
16:33	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	12.10		146	146		12.10	13.10	1.00	9	0.0		0.00	
17:10	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	13.10		146	146		13.10	13.60	0.50	5	0.0		0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
2.20	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 2: 3.60 - 5.02m
CPT 3: 6.10 - 7.60m
CPT 4: 9.60 - 11.10m
CPT 5: 13.10 - 14.60m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_20**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
17:34	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	13.60		146	146		13.60	14.60	1.00	8	0.0		0.00	
18:05	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	14.60		146	146		14.60	15.60	1.00	8	0.0		0.00	
18:35	Drilling	Rotary Open Hole	RO	PCD	44.50	14.70	15.60		146	146		15.60	16.60	1.00	8	0.0		0.00	
19:00	Shift	End					15.60					16.60	16.60	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 2: 3.60 - 5.02m
CPT 3: 6.10 - 7.60m
CPT 4: 9.60 - 11.10m
CPT 5: 13.10 - 14.60m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-07 18:37:32 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_20
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 2: 3.60 - 5.02m
CPT 3: 6.10 - 7.60m
CPT 4: 9.60 - 11.10m
CPT 5: 13.10 - 14.60m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			
Depth to Water (m) at	Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_20
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	2.60	3.60	5	0	200	2.60	✓
H	4.10	4.55	6	40	200	4.10	✓
H	4.60	5.05	7	60	250	4.60	✓
PS	5.10	5.60	8	0	300	5.10	✓
PS	5.60	6.10	9	0	330	5.60	✓
PS	6.60	7.60	10	0	950	6.60	✓
PS	7.60	8.10	11	0	450	7.60	✓
PS	8.10	8.60	12	0	350	7.60	✓
PS	8.60	9.10	13	0	500	8.60	✓
PS	9.10	9.60	14	0	300	8.60	✓
PS	10.10	11.10	15	0	800	10.10	✓
PS	11.10	11.60	16	0	450	11.10	✓
PS	11.60	12.10	17	0	370	11.10	✓
PS	12.10	12.60	18	0	400	12.10	✓
PS	12.60	13.10	19	0	500	12.10	✓
PS	13.60	14.60	20	0	800	13.60	✓
PS	14.60	15.10	21	0	500	14.60	✓
PS	15.10	15.60	22	0	500	14.60	✓
PS	15.60	16.10	23	0	400	15.60	✓
PS	16.10	16.60	24	0	500	15.60	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 2: 3.60 - 5.02m
CPT 3: 6.10 - 7.60m
CPT 4: 9.60 - 11.10m
CPT 5: 13.10 - 14.60m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_20**
Date	Thursday 2022-07-07

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-07 18:37:34 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					16.60					16.60	16.60	0.00					
19:50	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	17.10		146	146		16.60	17.10	0.50	5	0.0	Clear	0.00	
20:20	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	17.60		146	146		17.10	17.60	0.50	4	0.0	Clear	0.00	
20:50	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	18.10		146	146		17.60	18.10	0.50	2	0.0	Clear	0.00	
21:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	18.60		146	146		18.10	18.60	0.50	2	0.0	Clear	0.00	
22:15	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	19.60		146	146		18.60	19.60	1.00	3	0.0	Clear	0.00	
22:40	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	20.10		146	146		19.60	20.10	0.50	2	0.0	Clear	0.00	
23:00	Drilling	Rotary Open Hole	RO	PCD	44.50	15.20	20.60		146	146		20.10	20.60	0.50	2	0.0	Clear	0.00	
23:35	Drilling	Rotary Open Hole	RO	PCD	44.50	15.20	21.10		146	146		20.60	21.10	0.50	2	0.0	Clear	0.00	
23:55	Drilling	Rotary Open Hole	RO	PCD	44.50	15.30	22.10		146	146		21.10	22.10	1.00	2	0.0	Clear	0.00	
01:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	22.60		146	146		22.10	22.60	0.50	2	0.0	Clear	0.00	
01:25	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	23.60		146	146		22.60	23.60	1.00	2	0.0	Clear	0.00	
01:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	24.10		146	146		23.60	24.10	0.50	2	0.0	Clear	0.00	
02:00	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	24.60		146	146		24.10	24.60	0.50	2	0.0	Clear	0.00	
02:40	Drilling	Rotary Open Hole	RO	PCD	44.50	14.90	25.10		146	146		24.60	25.10	0.50	2	0.0	Clear	0.00	
03:10	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	26.10		146	146		25.10	26.10	1.00	2	0.0	Clear	0.00	
03:50	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	26.60		146	146		26.10	26.60	0.50	2	0.0	Clear	0.00	
04:10	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	27.60		146	146		26.60	27.60	1.00	3	0.0	Clear	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
04:40	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	28.10		146	146		27.60	28.10	0.50	3	0.0	Clear	0.00	
05:00	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	28.60		146	146		28.10	28.60	0.50	2	0.0	Clear	0.00	
05:35	Drilling	Rotary Open Hole	RO	PCD	44.50	14.80	29.10		146	146		28.60	29.10	0.50	2	0.0	Clear	0.00	
05:55	Drilling	Rotary Open Hole	RO	PCD	44.50	14.70	30.10		146	146		29.10	30.10	1.00	2	0.0	Clear	0.00	
07:00	Shift	End					30.10					30.10	30.10	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 07:27:03 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 07:27:04 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	BH_20
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-07-07
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	17.10	17.20	25	1	100	17.20	✓
PS	17.60	18.00	26	1	360	18.00	✓
PS	18.60	19.00	27	1	400	18.60	✓
PS	19.60	20.00	28	1	400	20.00	✓
PS	20.10	20.50	29	1	400	20.50	✓
PS	21.10	21.50	30	1	400	21.50	✓
PS	22.60	23.10	31	1	500	23.10	✓
PS	23.60	24.00	32	1	400	24.00	✓
PS	24.10	24.50	33	1	400	24.50	✓
PS	25.10	25.50	34	1	400	25.50	✓
PS	26.60	27.10	35	1	500	27.10	✓
PS	27.60	28.00	36	1	360	28.00	✓
PS	28.10	28.50	37	1	400	28.50	✓
PS	29.10	29.50	38	1	400	29.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 07:27:05 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_20**
Date	Thursday 2022-07-07

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 07:27:05 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_20
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion: incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					30.10					0.00	0.00	0.00					
08:02	Drilling	Pulling out Casing																	
08:50	Delay	Breakdown - Equipment																	
09:40	Drilling	Running in or Removing																	
10:41	Drilling	Rotary Open Hole	RO	PCD	44.50	15.30	30.10		146	146		30.10	30.60	0.50	3	0.0		0.00	
11:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.40	30.60		146	146		30.60	31.60	1.00	4	0.0		0.00	
11:32	Drilling	Rotary Open Hole	RO	PCD	44.50	15.40	31.60		146	146		31.60	32.60	1.00	4	0.0		0.00	
13:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.50	32.60		146	146		32.60	33.10	0.50	4	0.0		0.00	
13:24	Drilling	Rotary Open Hole	RO	PCD	44.50	15.50	33.10		146	146		33.10	34.10	1.00	4	0.0		0.00	
14:02	Drilling	Rotary Open Hole	RO	PCD	44.50	15.40	34.10		146	146		34.10	34.60	0.50	3	0.0		0.00	
14:26	Drilling	Rotary Open Hole	RO	PCD	44.50	15.40	34.60		146	146		34.60	35.60	1.00	6	0.0		0.00	
14:59	Drilling	Rotary Open Hole	RO	PCD	44.50	15.30	35.60		146	146		35.60	36.60	1.00	4	0.0		0.00	
15:40	Drilling	Rotary Open Hole	RO	PCD	44.50	15.20	36.60		146	146		36.60	37.10	0.50	3	0.0		0.00	
16:00	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	37.10		146	146		37.10	38.10	1.00	5	0.0		0.00	
16:38	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	38.10		146	146		38.10	38.60	0.50	3	0.0		0.00	
16:58	Drilling	Rotary Open Hole	RO	PCD	44.50	15.10	38.60		146	146		38.60	39.60	1.00	4	0.0		0.00	
17:25	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	39.60		146	146		39.60	40.60	1.00	5	0.0		0.00	
18:04	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	40.60		146	146		40.60	41.10	0.50	3	0.0		0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
30.10	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 14: 32.60 - 34.03m
CPT 15: 34.10 - 35.56m
CPT 16: 36.60 - 38.06m
CPT 17: 38.10 - 39.57m
CPT 18: 40.60 - 42.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH_20**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:28	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	41.10		146	146		41.10	42.10	1.00	5	0.0		0.00	
19:00	Shift	End					41.10					42.10	42.10	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

CPT 14: 32.60 - 34.03m
CPT 15: 34.10 - 35.56m
CPT 16: 36.60 - 38.06m
CPT 17: 38.10 - 39.57m
CPT 18: 40.60 - 42.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 18:33:56 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_20
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 14: 32.60 - 34.03m
CPT 15: 34.10 - 35.56m
CPT 16: 36.60 - 38.06m
CPT 17: 38.10 - 39.57m
CPT 18: 40.60 - 42.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	BH_20
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	30.60	31.60	39	0	750	30.60	✓
PS	31.60	32.10	40	0	400	31.60	✓
PS	32.10	32.60	41	0	500	31.60	✓
PS	33.10	34.10	42	0	750	33.10	✓
PS	34.60	35.60	43	0	650	34.60	✓
PS	35.60	36.10	44	0	450	35.60	✓
PS	36.10	36.60	45	0	500	35.60	✓
PS	37.10	38.10	46	0	700	37.10	✓
PS	38.60	39.60	47	0	550	38.60	✓
PS	39.60	40.10	48	0	500	39.60	✓
PS	40.10	40.60	49	0	500	39.60	✓
PS	41.10	41.90	50	0	700	41.10	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 14: 32.60 - 34.03m
CPT 15: 34.10 - 35.56m
CPT 16: 36.60 - 38.06m
CPT 17: 38.10 - 39.57m
CPT 18: 40.60 - 42.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_20**
Date	Friday 2022-07-08

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-08 18:33:58 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH20**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:00	Shift	Start					42.10					42.10	42.10	0.00					
19:55	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	42.60		146	146		42.10	42.60	0.50	2	0.0	Clear	0.00	
20:15	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	43.60		146	146		42.60	43.60	1.00	2	0.0	Clear	0.00	
20:55	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	44.60		146	146		43.60	44.60	1.00	3	0.0	Clear	0.00	
21:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	45.10		146	146		44.60	45.10	0.50	2	0.0	Clear	0.00	
22:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	46.10		146	146		45.10	46.10	1.00	2	0.0	Clear	0.00	
22:40	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	46.60		146	146		46.10	46.60	0.50	2	0.0	Clear	0.00	
23:00	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	47.60		146	146		46.60	47.60	1.00	2	0.0	Clear	0.00	
23:30	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	48.60		146	146		47.60	48.60	1.00	3	0.0	Clear	0.00	
00:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	49.10		146	146		48.60	49.10	0.50	2	0.0	Clear	0.00	
01:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	50.10		146	146		49.10	50.10	1.00	3	0.0	Clear	0.00	
01:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	50.60		146	146		50.10	50.60	0.50	2	0.0	Clear	0.00	
02:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	51.60		146	146		50.60	51.60	1.00	2	0.0	Clear	0.00	
02:25	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	52.10		146	146		51.60	52.10	0.50	2	0.0	Clear	0.00	
02:50	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	52.60		146	146		52.10	52.60	0.50	2	0.0	Clear	0.00	
03:35	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	53.10		146	146		52.60	53.10	0.50	2	0.0	Clear	0.00	
03:55	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	54.10		146	146		53.10	54.10	1.00	3	0.0	Clear	0.00	
04:35	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	54.60		146	146		54.10	54.60	0.50	2	0.0	Clear	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH20**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
05:05	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	55.60		146	146		54.60	55.60	1.00	2	0.0	Clear	0.00	
05:45	Drilling	Rotary Open Hole	RO	PCD	44.50	15.00	56.60		146	146		55.60	56.60	1.00	2	0.0	Clear	0.00	
07:00	Shift	End					56.60					56.60	56.60	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-09 06:49:32 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH20**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	J. Lawson	Borehole No	**BH20**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-07-08
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	42.60	43.10	51	1	500	43.10	✓
PS	43.60	44.10	52	1	500	44.10	✓
PS	44.10	44.60	53	1	500	44.60	✓
PS	45.10	45.50	54	1	400	45.50	✓
PS	46.60	47.20	55	1	530	47.20	✓
PS	47.60	48.00	56	1	400	48.00	✓
PS	48.00	48.50	57	1	500	48.50	✓
PS	49.10	49.50	58	1	400	49.50	✓
PS	50.60	51.10	59	1	400	51.10	✓
PS	51.60	52.10	60	1	500	52.10	✓
PS	52.10	52.60	61	1	150	52.60	✓
PS	53.10	53.70	62	1	600	53.70	✓
PS	54.60	55.20	63	1	600	55.20	✓
PS	55.60	56.40	64	1	580	56.40	✓
PS	56.40	56.60	65	1	420	56.60	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-09 06:49:34 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH20**
Date	Friday 2022-07-08

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3872.a78796) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-07-09 06:49:35 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.Barnett	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.Hughes	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	SPT
Weather	Calm	Veh/Vess	Neptune	Borehole Completion	incomplete

Skills Card No/Type

BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					0.00					0.00	0.00	0.00					
07:00	HSSEQ	Toolbox Talk																	
07:15	Move and Set Up	Set up Rig																	
15:00	Drilling	Running in or Removing Pipe																	
18:10	Drilling	Rotary Open Hole	RO	PCD	46.60	18.10	1.00		178	178		0.00	1.00	1.00	25	0.0	Clear	0.00	
18:35	Move and Set Up	Tidy Work Area																	
19:00	Shift	End					1.00					0.00	0.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Dynamic Sample
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-01 19:06:56 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.Barnett	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.Hughes	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	SPT
Weather	Calm	Veh/Vess	Neptune	Borehole Completion	incomplete

Skills Card No/Type
BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-01 19:06:57 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.Barnett	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.Hughes	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	SPT
Weather	Calm	Veh/Vess	Neptune	Borehole Completion	incomplete

Skills Card No/Type

BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk

D Disturbed

ES Environmental

P Piston

U Open tube (U100)

UT Undisturbed thin wall

W Water

…# Failed no recovery

…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-01 19:06:57 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH26**
Date	Wednesday 2022-06-01

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH_26**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	DRY	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:13	Shift	Start					1.00					0.00	1.00	1.00					
19:15	Drilling	Rotary Open Hole	RO	PCD	46.60	16.90	2.00		177	177		1.00	2.00	1.00	5	75.0	Grey	0.00	
19:30	Move and Set Up	Moving Equipment																	
20:25	Drilling	Add/Remove Casing																	
21:00	Move and Set Up	Set up Rig																	
00:40	Drilling	Rotary Open Hole	RO	PCD	46.60	16.80	2.50		146	146		2.00	2.50	0.50	2	75.0	Grey	0.00	
02:22	Drilling	Rotary Open Hole	RO	PCD	46.60	16.80	3.50		146	146		2.50	3.50	1.00	7	75.0	Grey	0.00	
03:48	Drilling	Rotary Open Hole	RO	PCD	46.60	17.00	5.00		146	146		3.50	5.00	1.50	5	75.0	Grey	0.00	
05:50	Drilling	Rotary Open Hole	RO	PCD	46.60	17.20	6.50		146	146		5.00	6.50	1.50	6	75.0	Grey	0.00	
06:51	Shift	End					6.50					6.50	6.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_26
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	DRY	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_26
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Wednesday 2022-06-01
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	DRY	Veh/Vess	Neptune	Borehole Completion: incomplete	BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P#	2.00	2.50	3			2.50	✓
P#	2.50	2.80	4			2.80	✓
P	3.50	4.50	5		350	4.50	✓
P#	5.00	6.00	6			6.00	✓
P	5.00	6.00	7		300	6.00	✓
P	5.50	6.50	9		400	6.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 06:58:47 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_26**
Date	Wednesday 2022-06-01

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 06:58:47 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					5.50					0.00	0.00	0.00					
07:00	HSSEQ	Daily Inspections																	
08:00	Drilling	Rotary Open Hole	RO	PCD	46.60	18.10	5.50		148	148		5.50	6.50	1.00	7	100.0	Clear	0.00	
09:00	Drilling	Rotary Open Hole	RO	PCD	46.60	17.20	6.50		148	148		6.50	7.00	0.50	10	100.0	Clear	0.00	
09:30	Drilling	Rotary Open Hole	RO	PCD	46.60	17.80	7.00		148	148		7.00	8.00	1.00	15	100.0	Clear	0.00	
10:31	Drilling	Rotary Open Hole	RO	PCD	46.60	17.80	8.00		148	148		8.00	9.50	1.50	50	100.0	Clear	0.00	
11:52	Drilling	Rotary Open Hole	RO	PCD	46.60	17.90	9.50		148	148		9.50	10.50	1.00	18	100.0	Clear	0.00	
13:21	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	10.50		148	148		10.50	11.00	0.50	5	100.0	Clear	0.00	
13:50	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	11.00		148	148		11.00	12.00	1.00	25	100.0	Cream	0.00	
14:40	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	12.00		148	148		12.00	13.50	1.50	30	100.0	Cream	0.00	
15:30	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	13.50		148	148		13.50	14.50	1.00	25	100.0	Cream	0.00	
16:30	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	14.50		148	148		14.50	16.00	1.50	25	100.0	Cream	0.00	
17:19	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	16.00		148	148		16.00	16.50	0.50	10	100.0	Cream	0.00	
17:55	Drilling	Rotary Open Hole	RO	PCD	46.60	18.00	16.50		148	148		16.50	17.50	1.00	15	0.0		0.00	
18:25	Drilling	Rotary Open Hole	RO	PCD	46.60	17.90	18.50		148	148		17.50	18.50	1.00	10	0.0		0.00	
19:00	Shift	End					18.50					18.50	18.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
5.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

08:30: CPT Push 6.50-8.00m
09:10 Shelby push 8 - threaded tube, catcher came back damaged
09:45: CPT Push 8.00-9.50
12:40: CPT push 10.50 - 12
14:15: CPT push 12.00 - 13.50m

15:55: CPT push 14.50 - 16.00

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 18:39:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

08:30: CPT Push 6.50-8.00m
09:10 Shelby push 8 - threaded tube, catcher came back damaged
09:45: CPT Push 8.00-9.50
12:40: CPT push 10.50 - 12
14:15: CPT push 12.00 - 13.50m

15:55: CPT push 14.50 - 16.00

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 18:39:08 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	7.00	7.70	8	0	0	7.00	✓
PS	9.50	10.50	9	0	750	9.50	✓
PS	11.00	12.00	10	0	450	11.00	✓
PS	13.50	14.40	11	0	900	13.50	✓
PS	16.50	17.50	12	0	920	16.50	✓
PS	17.50	18.50	13	0	700	17.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

08:30: CPT Push 6.50-8.00m
09:10 Shelby push 8 - threaded tube, catcher came back damaged
09:45: CPT Push 8.00-9.50
12:40: CPT push 10.50 - 12
14:15: CPT push 12.00 - 13.50m

15:55: CPT push 14.50 - 16.00

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 18:39:09 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH26**
Date	Thursday 2022-06-02

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-02 18:39:09 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH_26**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:05	Shift	Start					18.50					18.50	18.50	0.00					
20:00	Drilling	Rotary Open Hole	RO	PCD	46.60	16.80	19.50		146	146		18.50	19.50	1.00	10	0.0	Clear	0.00	
21:10	Drilling	Rotary Open Hole	RO	PCD	46.60	16.70	20.00		146	146		19.50	20.00	0.50	7	0.0	Clear	0.00	
22:23	Drilling	Rotary Open Hole	RO	PCD	46.60	16.60	21.00		146	146		20.00	21.00	1.00	9	0.0	Clear	0.00	
23:25	Drilling	Rotary Open Hole	RO	PCD	46.60	16.90	22.00		146	146		21.00	22.00	1.00	8	0.0	Clear	0.00	
01:30	Drilling	Rotary Open Hole	RO	PCD	46.60	16.80	22.50		146	146		22.00	22.50	0.50	7	0.0	Clear	0.00	
03:00	Drilling	Rotary Open Hole	RO	PCD	46.60	16.80	23.50		146	146		22.50	23.50	1.00	14	0.0	Clear	0.00	
03:53	Drilling	Rotary Core	RC	PCD	46.60	16.80	24.50		146	146	102	23.50	23.90	0.40	3	0.0	Clear	0.30	1
04:17	Drilling	Rotary Core	RC	PCD	46.60	16.90	24.50		146	146	102	23.90	24.50	0.60	4	0.0	Clear	0.40	2
04:41	Drilling	Rotary Core	RC	PCD	46.60	16.90	25.50		146	146	102	24.50	25.50	1.00	8	0.0	Clear	1.00	3
07:00	Shift	End					25.50					25.50	25.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	3	Bearing	

REMARKS

pushes 14 - 19 all with thin walled shelby tube
push 19 refused at 0.10m and damaged tube
push 20 and 21 with thick walled shelby tube
CPT push 19.50m to 21.00m, 22.50m to 23.65m,

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 06:51:43 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_26
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

pushes 14 - 19 all with thin walled shelby tube
push 19 refused at 0.10m and damaged tube
push 20 and 21 with thick walled shelby tube
CPT push 19.50m to 21.00m, 22.50m to 23.65m,

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 06:51:44 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	BH_26
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Thursday 2022-06-02
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	18.50	19.50	14		380	19.50	✓
P	18.50	19.50	15		620	19.50	✓
P	20.00	21.00	16		650	21.00	✓
P	21.00	21.70	17		700	21.70	✓
P	21.70	22.00	18		300	22.00	✓
P	22.00	22.10	19		100	22.10	✓
H	22.10	22.40	20	100	300	22.40	✓
P	22.50	23.00	21		500	23.00	✓
P	23.50	23.90	22		300	23.90	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

pushes 14 - 19 all with thin walled shelby tube
push 19 refused at 0.10m and damaged tube
push 20 and 21 with thick walled shelby tube
CPT push 19.50m to 21.00m, 22.50m to 23.65m,

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 06:51:44 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH_26**
Date	Thursday 2022-06-02

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 06:51:45 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					25.50					0.00	0.00	0.00					
07:01	HSSEQ	Toolbox Talk																	
07:15	HSSEQ	Daily Inspections																	
07:46	Drilling	Rotary Core	RC	PCD	46.60	17.80	25.50		146	146	102	25.50	27.00	1.50	15	0.0		200.00	4
08:33	Drilling	Rotary Open Hole	RO	PCD	46.60	17.70	25.50		146	146		27.00	27.00	0.00	15	0.0		0.00	
09:20	Drilling	Rotary Open Hole	RO	PCD	46.60	17.60	27.00		146	146		27.00	28.00	1.00	25	0.0		0.00	
10:35	Drilling	Rotary Open Hole	RO	PCD	46.60	17.50	28.00		146	146		28.00	28.50	0.50	10	0.0		0.00	
11:10	Drilling	Rotary Open Hole	RO	PCD	46.60	17.40	28.50		146	146		28.50	29.50	1.00	20	0.0		0.00	
12:35	Drilling	Rotary Open Hole	RO	PCD	46.60	17.60	29.50		146	146		29.50	31.00	1.50	20	0.0		0.00	
13:25	Drilling	Rotary Open Hole	RO	PCD	46.60	17.60	31.00		146	146		31.00	32.00	1.00	35	0.0		0.00	
14:25	Drilling	Rotary Open Hole	RO	PCD	46.60	17.70	32.00		146	146		32.00	32.50	0.50	15	0.0		0.00	
16:30	Drilling	Rotary Open Hole	RO	PCD	46.60	17.40	32.50		146	146		32.50	33.50	1.00	25	0.0		0.00	
17:21	Drilling	Rotary Open Hole	RO	PCD	46.60	17.30	33.50		146	146		33.50	34.00	0.50	10	0.0		0.00	
18:05	Drilling	Rotary Open Hole	RO	PCD	46.60	17.50	35.00		146	146		34.00	35.00	1.00	20	0.0		0.00	
19:00	Shift	End					35.00					35.00	35.00	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
25.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	1	Bearing	

REMARKS

CPT 28.00 - 29.45m
CPT 29.50 - 30.95m
CPT 32.00 - 33.50m
CPT 33.50 - 35.00m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 18:36:34 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

CPT 28.00 - 29.45m
CPT 29.50 - 30.95m
CPT 32.00 - 33.50m
CPT 33.50 - 35.00m

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 18:36:35 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Good	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	27.00	27.60	23	0	450	27.00	✓
PS	28.50	29.00	24	0	500	28.50	✓
PS	31.00	32.00	25	0	850	31.00	✓
PS	32.50	33.10	26	0	550	32.50	✓
PS	34.00	35.00	27	0	730	34.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

CPT 28.00 - 29.45m
CPT 29.50 - 30.95m
CPT 32.00 - 33.50m
CPT 33.50 - 35.00m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 18:36:35 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH26**
Date	Friday 2022-06-03

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-03 18:36:36 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH26**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
19:01	Shift	Start					35.00					35.00	35.00	0.00					
19:25	Drilling	Rotary Open Hole	RO	PCD	46.60	17.80	36.00		146	146		35.00	36.00	1.00	7	0.0	Clear	0.00	
21:09	Drilling	Rotary Open Hole	RO	PCD	46.60	17.30	37.00		146	146		36.00	37.00	1.00	7	0.0	Clear	0.00	
22:14	Drilling	Rotary Open Hole	RO	PCD	46.60	16.90	38.00		146	146		37.00	38.30	1.30	7	0.0	Clear	0.00	
00:30	Drilling	Rotary Core	RC	PCD	46.60	17.60	39.50		146	146	102	38.30	39.50	1.20	9	0.0	Clear	0.20	5
02:36	Drilling	Rotary Core	RC	PCD	46.60	17.40	40.50		146	146	102	39.50	40.50	1.00	22	0.0	Clear	1.00	6
03:21	Drilling	Rotary Core	RC	PCD	46.60	17.30	41.50		146	146	102	40.50	41.50	1.00	26	0.0	Clear	0.90	7
04:39	Drilling	Rotary Core	RC	PCD	46.60	17.30	42.80		146	146	102	41.50	42.80	1.30	35	0.0	Clear	1.40	8
05:28	Drilling	Rotary Core	RC	PCD	46.60	17.50	41.50		146	146	102	42.80	44.30	1.50	34	0.0	Clear	0.00	9
06:15	Drilling	Rotary Core	RC	PCD	46.60	17.60	45.80		146	146	102	44.30	45.80	1.50	36	0.0	Clear	0.00	10
06:53	Shift	End					45.80					45.80	45.80	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	6	Bearing	

REMARKS

01:55: NCD over 38.30 - 39.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 07:28:41 by k.routledge

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH26**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

01:55: NCD over 38.30 - 39.50m

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 07:28:42 by k.routledge

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH26**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Friday 2022-06-03
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	dry	Veh/Vess	Neptune	Borehole Completion	incomplete — BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	35.00	36.00	28		900	36.00	✓
P	36.00	36.80	29		800	36.80	✓
P	37.00	37.70	30		700	37.70	✓
P	38.00	38.30	31		300	38.30	✓
H	38.00	38.40	32	100	400	38.40	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

01:55: NCD over 38.30 - 39.50m

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 07:28:42 by k.routledge

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH26**
Date	Friday 2022-06-03

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 07:28:43 by k.routledge

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Breezy	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					45.80					0.00	0.00	0.00					
07:00	HSSEQ	Toolbox Talk																	
07:25	Drilling	Rotary Core	RC	PCD	46.60	17.30	45.80		146	146	102	45.80	47.30	1.50	35	0.0		1.50	11
09:40	Drilling	Rotary Core	RC	PCD	46.60	17.30	47.30		146	146	102	47.30	48.80	1.50	25	0.0		1.36	12
10:26	Drilling	Rotary Core	RC	PCD	46.60	17.40	48.80		146	146	102	48.80	50.30	1.50	31	0.0		1.50	13
11:17	Drilling	Rotary Core	RC	PCD	46.60	17.30	50.30		146	146	102	50.30	51.80	1.50	25	0.0		1.50	14
12:53	Drilling	Rotary Core	RC	PCD	46.60	17.20	51.80		146	146	102	51.80	53.30	1.50	35	0.0		1.50	15
13:47	Drilling	Rotary Core	RC	PCD	46.60	17.30	53.30		146	146	102	53.30	54.80	1.50	38	0.0		1.50	16
14:41	Drilling	Rotary Core	RC	PCD	46.60	17.30	54.80		146	146	102	54.80	56.30	1.50	38	0.0		1.50	17
15:40	Drilling	Rotary Core	RC	PCD	46.60	17.00	56.30		146	146	102	56.30	57.80	1.50	29	0.0		1.50	18
16:25	Drilling	Rotary Core	RC	PCD	46.60	17.10	59.30		146	146	102	57.80	59.30	1.50	35	0.0		1.50	19
17:15	Testing	Wireline Geophysics																	
19:00	Shift	End					59.30					59.30	59.30	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
45.80	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	9	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 18:21:17 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Breezy	Veh/Vess	NEPTUNE	Borehole Completion	incomplete BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 18:21:17 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH26**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Saturday 2022-06-04
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Breezy	Veh/Vess	NEPTUNE	Borehole Completion incomplete	BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 18:21:18 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH26**
Date	Saturday 2022-06-04

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-04 18:21:18 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					0.00					0.00	0.00	0.00					
07:01	HSSEQ	Daily Inspections																	
08:10	Drilling	Add/Remove Casing																	
09:20	Drilling	Add/Remove Casing																	
10:15	Move and Set Up	Set up Rig																	
12:45	Drilling	Running in or Removing Pipe																	
14:35	Drilling	Rotary Open Hole	RO	PCD	43.60	14.80	1.00		178	178		0.00	1.00	1.00	5	0.0		0.00	
16:12	Drilling	Rotary Open Hole	RO	PCD	43.60	14.90	2.00		178	178		1.00	2.00	1.00	30	0.0		0.00	
17:35	Drilling	Rotary Open Hole	RO	PCD	43.60	14.50	2.95		178	178		2.00	2.95	0.95	20	0.0		0.00	
19:00	Shift	End					2.95					2.95	2.95	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Water

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-12 18:24:05 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-12 18:24:06 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	0.00	1.00	1	0	0	0.00	✓
PS	1.00	1.40	2	0	0	1.00	✓
H	1.00	1.45	3	18	200	1.00	✓
PS	2.00	2.95	4	0	0	2.00	✓
H	2.00	2.45	5	10	250	2.00	✓
H	2.50	2.95	6	42	100	2.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Base (m)	Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-12 18:24:06 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Sunday 2022-06-12

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-12 18:24:07 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					2.50					2.50	2.50	0.00					
20:25	Drilling	Rotary Open Hole	RO	PCD	43.60	13.70	3.00		146	146		2.50	3.00	0.50	5	100.0	Grey	0.00	
20:55	Drilling	Rotary Open Hole	RO	PCD	43.60	13.80	3.50		146	146		3.00	3.50	0.50	6	100.0	Grey	0.00	
21:30	Drilling	Rotary Open Hole	RO	PCD	43.60	13.80	4.00		146	146		3.50	4.00	0.50	6	100.0	Grey	0.00	
22:00	Drilling	Rotary Open Hole	RO	PCD	43.60	13.80	4.50		146	146		4.00	4.50	0.50	6	100.0	Grey	0.00	
22:45	Drilling	Rotary Open Hole	RO	PCD	43.60	13.80	5.00		146	146		4.50	5.00	0.50	5	100.0	Grey	0.00	
23:25	Drilling	Rotary Open Hole	RO	PCD	43.60	13.90	5.50		146	146		5.00	5.50	0.50	7	100.0	Grey	0.00	
23:55	Drilling	Rotary Open Hole	RO	PCD	43.60	14.00	6.00		146	146		5.50	6.00	0.50	6	100.0	Grey	0.00	
01:40	Drilling	Rotary Open Hole	RO	PCD	43.60	14.50	6.50		146	146		6.00	6.50	0.50	7	100.0	Grey	0.00	
02:20	Drilling	Rotary Open Hole	RO	PCD	43.60	14.80	7.50		146	146		6.50	7.50	1.00	9	100.0	Grey	0.00	
03:10	Drilling	Rotary Open Hole	RO	PCD	43.60	14.80	8.50		146	146		7.50	8.50	1.00	10	0.0	Clear	0.00	
04:00	Drilling	Rotary Open Hole	RO	PCD	43.60	14.90	9.50		146	146		8.50	9.50	1.00	9	0.0	Clear	0.00	
04:35	Drilling	Rotary Open Hole	RO	PCD	43.60	14.90	10.50		146	146		9.50	10.50	1.00	9	0.0	Clear	0.00	
05:15	Drilling	Rotary Open Hole	RO	PCD	43.60	14.80	11.50		146	146		10.50	11.50	1.00	10	0.0	Clear	0.00	
05:55	Drilling	Rotary Open Hole	RO	PCD	43.60	14.60	12.50		146	146		11.50	12.50	1.00	9	0.0	Clear	0.00	
06:35	Drilling	Rotary Open Hole	RO	PCD	43.60	14.30	13.50		146	146		12.50	13.50	1.00	9	0.0	Clear	0.00	
06:45	Shift	End					13.50					13.50	13.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

push samples 7,8,9,10,11,13 and 17 thick walled with catcher.
push samples 15,16,19,20 and 21 thick walled.
push samples 22 to 32 inclusive thin walled.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-13 06:48:44 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 7,8,9,10,11,13 and 17 thick walled with catcher.
push samples 15,16,19,20 and 21 thick walled.
push samples 22 to 32 inclusive thin walled.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-13 06:48:45 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Greene	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Sunday 2022-06-12
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	2.50	3.00	7		400	3.00	✓
P	3.00	3.50	8		400	3.50	✓
P	3.50	4.00	9		300	4.00	✓
P	4.00	4.50	10		500	4.50	✓
P#	4.50	4.50	11			4.50	✓
H	4.50	4.80	12	100	300	4.80	✓
P#	5.00	5.00	13			5.00	✓
H	5.00	5.40	14	100	400	5.40	✓
P	5.50	6.00	15		400	6.00	✓
P#	6.00	6.50	16			6.50	✓
P#	6.00	6.50	17			6.50	✓
H#	6.00	6.45	18	26	0	6.50	✓
P	6.50	7.10	19		600	7.10	✓
P	7.10	7.50	20		500	7.50	✓
P	7.50	8.00	21		500	8.00	✓
P	8.00	8.50	22		150	8.50	✓
P	8.50	9.00	23		450	9.00	✓
P	9.00	9.50	24		500	9.50	✓
P	9.50	10.00	25		500	10.00	✓
P	10.00	10.50	26		500	10.50	✓
P	10.50	11.00	27		400	11.00	✓
P	11.00	11.50	28		500	11.50	✓
P	11.50	12.50	29		500	12.50	✓
P	12.00	12.50	30		500	12.50	✓
P	12.50	13.00	31		450	13.00	✓
P	13.00	13.50	32		550	13.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 7,8,9,10,11,13 and 17 thick walled with catcher.
push samples 15,16,19,20 and 21 thick walled.
push samples 22 to 32 inclusive thin walled.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-13 06:48:46 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Sunday 2022-06-12

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-13 06:48:47 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					13.50					0.00	0.00	0.00					
07:50	Drilling	Rotary Open Hole	RO	PCD	43.60	14.00	13.50		146	146		13.50	14.00	0.50	5	0.0		0.00	
08:36	Drilling	Rotary Open Hole	RO	PCD	43.60	14.00	14.00		146	146		14.00	14.50	0.50	5	0.0		0.00	
09:30	Drilling	Rotary Open Hole	RO	PCD	43.60	13.90	14.50		146	146		14.50	15.00	0.50	5	0.0		0.00	
10:05	Drilling	Rotary Open Hole	RO	PCD	43.60	13.90	15.00		146	146		15.00	15.50	0.50	5	0.0		0.00	
11:02	Drilling	Rotary Open Hole	RO	PCD	43.60	13.90	15.50		146	146		15.50	16.00	0.50	5	0.0		0.00	
11:34	Drilling	Rotary Open Hole	RO	PCD	43.60	14.00	16.00		146	146		16.00	16.50	0.50	5	0.0		0.00	
13:00	Drilling	Rotary Open Hole	RO	PCD	43.60	14.30	16.50		146	146		16.50	17.00	0.50	5	0.0		0.00	
13:30	Drilling	Rotary Open Hole	RO	PCD	43.60	14.50	17.00		146	146		17.00	17.50	0.50	5	0.0		0.00	
14:00	Drilling	Rotary Open Hole	RO	PCD	43.60	14.70	17.50		146	146		17.50	18.00	0.50	7	0.0		0.00	
14:51	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	18.00		146	146		18.00	18.50	0.50	5	0.0		0.00	
15:25	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	18.50		146	146		18.50	19.00	0.50	5	0.0		0.00	
15:56	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	19.00		146	146		19.00	19.50	0.50	5	0.0		0.00	
16:26	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	19.50		146	146		19.50	20.00	0.50	8	0.0		0.00	
17:20	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	20.00		146	146		20.00	20.50	0.50	8	0.0		0.00	
17:50	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	20.50		146	146		20.50	21.00	0.50	6	0.0		0.00	
18:20	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	21.00		146	146		21.00	21.50	0.50	5	0.0		0.00	
19:00	Shift	End					21.00					21.50	21.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
13.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	N	Angle	vertical
Core Boxes Used	0	Bearing	

REMARKS

PS 50 - Hole collapsed, unable to push. Clean out back down to 20.00m and take Hammer sample.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 10:47:17 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

PS 50 - Hole collapsed, unable to push. Clean out back down to 20.00m and take Hammer sample.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 10:47:18 by b.marsden
Plate 2.205

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	GOOD	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	13.50	14.00	33	0	500	13.50	✓
PS	14.00	14.50	34	0	50	14.00	✓
H	14.00	14.50	35	42	270	14.00	✓
PS	14.50	14.50	36	0	0	14.50	✓
H	14.50	14.95	37	65	400	14.50	✓
H	15.00	15.45	38	40	400	15.00	✓
PS	15.50	15.60	39	0	100	15.50	✓
H	15.60	16.05	40	35	250	15.50	✓
H	16.00	16.45	41	70	400	16.00	✓
H	16.50	16.95	42	90	0	16.50	✓
H	16.50	16.95	43	40	450	16.50	✓
H	17.00	17.45	44	60	300	17.00	✓
H	17.50	17.95	45	96	450	17.50	✓
H	18.00	18.45	46	60	450	18.00	✓
H	18.50	18.80	47	100	50	18.50	✓
H	19.00	19.45	48	97	200	19.00	✓
H	19.50	19.95	49	70	400	19.50	✓
PS	20.00	20.00	50	0	0	20.00	✓
H	20.00	20.35	51	100	350	20.00	✓
PS	20.50	20.90	52	0	400	20.50	✓
PS	21.00	21.50	53	0	420	21.00	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

PS 50 - Hole collapsed, unable to push. Clean out back down to 20.00m and take Hammer sample.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 10:47:20 by b.marsden
Plate 2.206

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Monday 2022-06-13

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 10:47:20 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					21.50					21.50	21.50	0.00					
19:45	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	22.50		146	146		21.50	22.50	1.00	9	0.0	Clear	0.00	
20:30	Drilling	Rotary Open Hole	RO	PCD	43.60		23.50		146	146		22.50	23.50	1.00	10	0.0	Clear	0.00	
21:05	Drilling	Rotary Open Hole	RO	PCD	43.60		24.50		146	146		23.50	24.50	1.00	9	0.0	Clear	0.00	
21:40	Drilling	Rotary Open Hole	RO	PCD	43.60		25.50		146	146		24.50	25.50	1.00	9	0.0	Clear	0.00	
22:25	Drilling	Rotary Open Hole	RO	PCD	43.60		26.50		146	146		25.50	26.50	1.00	13	0.0	Clear	0.00	
23:15	Drilling	Rotary Open Hole	RO	PCD	43.60		27.50		146	146		26.50	27.50	1.00	15	0.0	Clear	0.00	
00:35	Drilling	Rotary Open Hole	RO	PCD	43.60		28.50		146	146		27.50	28.50	1.00	15	0.0	Clear	0.00	
01:30	Drilling	Rotary Open Hole	RO	PCD	43.60		29.50		146	146		28.50	29.50	1.00	16	0.0	Clear	0.00	
01:45	Drilling	Rotary Core	RC	PCD	43.60		30.50		146	146	102	29.50	30.50	1.00	11	0.0	Clear	1.00	1
02:20	Drilling	Rotary Core	RC	PCD	43.60		31.50		146	146	102	30.50	31.50	1.00	12	0.0	Clear	1.00	2
02:45	Drilling	Rotary Core	RC	PCD	43.60		32.50		146	146	102	31.50	32.50	1.00	13	0.0	Clear	1.00	3
03:20	Drilling	Rotary Core	RC	PCD	43.60		33.50		146	146	102	32.50	33.50	1.00	12	0.0	Clear	1.00	4
04:00	Drilling	Rotary Core	RC	PCD	43.60		34.50		146	146	102	33.50	34.50	1.00	2	0.0	Clear	1.00	5
04:50	Drilling	Rotary Open Hole	RO	PCD	43.60		35.00		146	146		34.50	35.00	0.50	4	0.0	Clear	0.00	
05:25	Drilling	Rotary Open Hole	RO	PCD	43.60		35.50		146	146		35.00	35.50	0.50	5	0.0	Clear	0.00	
05:55	Drilling	Rotary Open Hole	RO	PCD	43.60		36.00		146	146		35.50	36.00	0.50	4	0.0	Clear	0.00	
06:25	Drilling	Rotary Open Hole	RO	PCD	43.60		36.50		146	146		36.00	36.50	0.50	5	0.0	Clear	0.00	

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	5	Bearing	

REMARKS

push samples 54, 65 and 70 with thin walled shelby, 54 and 65 both damaged.
push samples 55 to 64, 66 to 70, 74 with thick walled shelby.
push sample 72 with thick walled shelby with metal catcher

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 06:41:32 by FGSLGaiaForms43

FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion incomplete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	End					36.50					36.50	36.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole & Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	5	Bearing	

REMARKS

push samples 54, 65 and 70 with thin walled shelby, 54 and 65 both damaged.
push samples 55 to 64, 66 to 70, 74 with thick walled shelby.
push sample 72 with thick walled shelby with metal catcher

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 06:41:32 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push samples 54, 65 and 70 with thin walled shelby, 54 and 65 both damaged.
push samples 55 to 64, 66 to 70, 74 with thick walled shelby.
push sample 72 with thick walled shelby with metal catcher

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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FUGRO

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Monday 2022-06-13
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P	21.50	22.00	54		450	22.00	✓
P	22.00	22.50	55		400	22.50	✓
P	22.50	23.00	56		500	23.00	✓
P	23.00	23.50	57		500	23.50	✓
P	23.50	24.00	58		400	24.00	✓
P	24.00	24.50	59		500	24.50	✓
P	24.50	25.00	60		500	25.00	✓
P	25.00	25.50	61		500	25.50	✓
P	25.50	26.00	62		400	26.00	✓
P	26.00	26.50	63		400	26.50	✓
P	26.50	27.00	64		400	27.00	✓
P	27.00	27.40	65		350	27.50	✓
P	27.50	28.00	66		200	28.00	✓
P	28.00	28.50	67		500	28.50	✓
P	28.50	29.00	68		350	29.00	✓
P	29.00	29.50	69		400	29.50	✓
P	33.50	34.00	70		500	34.00	✓
P	34.50	35.00	71		250	35.00	✓
P#	34.50	35.50	72			35.00	✓
H	35.00	35.30	73	100	250	35.30	✓
P	35.50	35.90	74		400	35.90	✓
P	36.00	36.50	75		500	36.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push samples 54, 65 and 70 with thin walled shelby, 54 and 65 both damaged.
push samples 55 to 64, 66 to 70, 74 with thick walled shelby.
push sample 72 with thick walled shelby with metal catcher

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Monday 2022-06-13

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 06:41:35 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	CALM	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
07:00	Shift	Start					36.50					0.00	0.00	0.00					
07:34	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	36.50		146	146		36.50	37.00	0.50	6	0.0		0.00	
08:22	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	37.00		146	146		37.00	37.50	0.50	6	0.0		0.00	
10:45	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	37.50		146	146		37.50	38.00	0.50	5	0.0		0.00	
11:05	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	38.00		146	146		38.00	38.50	0.50	5	0.0		0.00	
11:25	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	38.50		146	146		38.50	39.00	0.50	5	0.0		0.00	
12:37	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	39.00		146	146		39.00	39.50	0.50	5	0.0		0.00	
13:07	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	39.50		146	146		39.50	40.00	0.50	5	0.0		0.00	
13:35	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	40.00		146	146		40.00	40.50	0.50	5	0.0		0.00	
13:56	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	40.50		146	146		40.50	41.00	0.50	6	0.0		0.00	
14:22	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	41.00		146	146		41.00	41.50	0.50	5	0.0		0.00	
14:46	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	41.50		146	146		41.50	42.00	0.50	8	0.0		0.00	
15:15	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	42.00		146	146		42.00	42.50	0.50	6	0.0		0.00	
15:41	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	42.50		146	146		42.50	43.50	1.00	11	0.0		0.00	
16:20	Drilling	Rotary Open Hole	RO	PCD	43.60	15.00	43.50		146	146		43.50	44.50	1.00	6	0.0		0.00	
16:55	Drilling	Rotary Core	RC	PCD	43.60	15.00	44.50		146	146	102	44.50	45.50	1.00	8	0.0		0.60	6
17:30	Drilling	Rotary Core	RC	PCD	43.60	15.00	45.50		146	146	102	45.50	46.50	1.00	8	0.0		0.50	7
18:02	Drilling	Rotary Core	RC	PCD	43.60	15.00	46.50		146	146	102	46.50	47.50	1.00	8	0.0		1.00	8

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
36.50	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	Y	Angle	vertical
Core Boxes Used	4	Bearing	

REMARKS

PS 77 Fell out as it got near to the top of Geobore, go back down with thick wall and catcher

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 18:43:20 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	CALM	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:25	Drilling	Rotary Core	RC	PCD	43.60	15.00	47.50		146	146	102	47.50	48.50	1.00	9	0.0		0.50	9
19:00	Shift	End					47.50					48.50	0.00	-48.50					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Open Hole
Coreliner	Y	Angle	vertical
Core Boxes Used	4	Bearing	

REMARKS

PS 77 Fell out as it got near to the top of Geobore, go back down with thick wall and catcher

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

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Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**	
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore	
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14	
Client's No	C000	Rig No	1814	SPT Hammer No		Skills Card No/Type
Weather	CALM	Veh/Vess	NEPTUNE	Borehole Completion	incomplete	BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

PS 77 Fell out as it got near to the top of Geobore, go back down with thick wall and catcher

WATER STRIKE RECORD

Time				
Depth of Hole (m)				
Depth to Casing (m)				
Depth to Water (m/dry)				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				
Depth to Water (m) at Mins				

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 18:43:21 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	A.BARNETT	Borehole No	**BH28**
Contract No	F186642	Crew 2	C.HUGHES	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	CALM	Veh/Vess	NEPTUNE	Borehole Completion	incomplete
					BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
PS	36.50	37.00	76	0	450	36.50	✓
PS	37.00	37.50	77	0	0	37.00	✓
PS	37.00	37.50	78	0	350	37.00	✓
PS	37.50	38.00	79	0	350	37.50	✓
PS	38.00	38.50	80	0	500	38.00	✓
PS	38.50	39.00	81	0	500	38.50	✓
PS	39.00	39.50	82	0	400	39.00	✓
PS	39.50	40.50	83	0	500	39.50	✓
PS	40.00	40.50	84	0	450	40.00	✓
PS	40.50	41.00	85	0	500	40.50	✓
PS	41.00	41.50	86	0	500	41.00	✓
PS	41.50	42.00	87	0	500	41.50	✓
PS	42.00	42.50	88	0	500	42.00	✓
PS	42.50	43.50	89	0	900	42.50	✓
PS	43.50	44.50	90	0	900	43.50	✓
PS	44.50	45.50	91	0	400	44.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

PS 77 Fell out as it got near to the top of Geobore, go back down with thick wall and catcher

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 18:43:22 by FGSLGaiaForms43

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Tuesday 2022-06-14

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3718.e11344) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-14 18:43:23 by FGSLGaiaForms43

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS1200	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion complete	BDA Audit Card No

DRILLING RECORD

Time (hh:mm)	Activity	Task	Drill Type	Bit Type	Deck-Mud (m)	Deck-Water (m)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	Core Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)	Flush Return %	Flush Colour	Rec'y (m)	Box No
18:45	Shift	Start					48.50					48.50	48.50	0.00					
19:45	Drilling	Rotary Core	RC	PCD	43.60	14.30	49.50		146	146	102	48.50	49.50	1.00	9	0.0	Clear	0.80	10
20:55	Drilling	Rotary Core	RC	PCD	43.60	14.10	50.50		146	146	102	49.50	50.50	1.00	8	0.0	Clear	1.00	11
21:25	Drilling	Rotary Core	RC	PCD	43.60	14.00	51.50		146	146	102	50.50	51.50	1.00	9	0.0	Clear	1.00	12
21:45	Drilling	Rotary Core	RC	PCD	43.60	13.90	53.00		146	146	102	51.50	53.00	1.50	12	0.0	Clear	1.50	13
22:10	Drilling	Rotary Core	RC	PCD	43.60	13.90	54.50		146	146	102	53.00	54.50	1.50	12	0.0	Clear	1.50	14
22:40	Drilling	Rotary Core	RC	PCD	43.60	13.90	56.00		146	146	102	54.50	56.00	1.50	10	0.0	Clear	1.10	15
23:15	Drilling	Rotary Core	RC	PCD	43.60	13.90	57.00		146	146	102	56.00	57.00	1.00	10	0.0	Clear	0.75	16
23:40	Drilling	Rotary Core	RC	PCD	43.60	13.80	58.00		146	146	102	57.00	58.00	1.00	11	0.0	Clear	0.95	17
00:40	Drilling	Rotary Core	RC	PCD	43.60	13.90	59.00		146	146	102	58.00	59.00	1.00	9	0.0	Clear	1.00	18
01:05	Drilling	Rotary Core	RC	PCD	43.60	14.00	60.50		146	146	102	59.00	60.50	1.50	14	0.0	Clear	1.50	19
01:35	Drilling	Rotary Core	RC	PCD	43.60	14.10	62.00		146	146	102	60.50	62.00	1.50	15	0.0	Clear	1.50	20
02:20	Drilling	Rotary Core	RC	PCD	43.60	14.30	63.50		146	146	102	62.00	63.50	1.50	18	0.0	Clear	1.50	21
03:00	Drilling	Rotary Core	RC	PCD	43.60	14.80	65.00		146	146	102	63.50	65.00	1.50	16	0.0	Clear	1.50	22
03:30	Drilling	Rotary Core	RC	PCD	43.60	15.10	66.50		146	146	102	65.00	66.50	1.50	15	0.0	Clear	1.50	23
04:15	Drilling	Rotary Core	RC	PCD	43.60	15.20	68.00		146	146	102	66.50	68.00	1.50	14	0.0	Clear	1.40	24
05:05	Drilling	Rotary Core	RC	PCD	43.60	15.30	69.50		146	146	102	68.00	69.50	1.50	14	0.0	Clear	1.50	25
07:00	Shift	End					69.50					69.50	69.50	0.00					

Tick in Box No. column indicates that core starts in previous box

OVER DRILLING RECORD

Time (hh:mm)	Casing Depth (m)	Water Level (m/dry)	Borehl Diam (mm)	Casing Diam (mm)	From (m)	To (m)	Length (m)	Time (mins)

FLUSH

Depth (m)	Flush
0.00	Pure bore

DRILLING DETAILS

Drill Bit Type	PCD	Drilling Type	Rotary Cored
Coreliner	Y	Angle	vertical
Core Boxes Used	16	Bearing	

REMARKS

push sample 92 with thick walled shelby, no penetration, damaged tube.
E.O.H. @ 69.50m BML confirmed by client rep.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 13:23:47 by b.marsden

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion	complete — BDA Audit Card No

STRATA DESCRIPTION

Depth Top (m)	Depth Base (m)	Description

REMARKS

push sample 92 with thick walled shelby, no penetration, damaged tube.
E.O.H. @ 69.50m BML confirmed by client rep.

WATER STRIKE RECORD

Time			
Depth of Hole (m)			
Depth to Casing (m)			
Depth to Water (m/dry)			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			
Depth to Water (m) at Mins			

MISCELLANEOUS

Inspection Pit
CAT Survey
Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 13:23:47 by b.marsden
Plate 2.219

Rotary Drilling Daily Report

Project	Arklow Bank Wind Farm	Crew 1	K. Hack	Borehole No	**BH28**
Contract No	F186642	Crew 2	J. Green	Environment	nearshore
Client	SSE Renewables	Rig Type	Comacchio MCS120	Day and Date	Tuesday 2022-06-14
Client's No	C000	Rig No	1814	SPT Hammer No	Skills Card No/Type
Weather	Dry	Veh/Vess	Neptune	Borehole Completion: complete	BDA Audit Card No

SAMPLING

Type	From (m)	To (m)	No	Blows	Length (mm)	Casing Depth (m)	Water Level (m/dry)
P#	49.50	49.50	92			49.50	✓

SPT/CPT

Type	From (m)	To (m)	Casing Depth (m)	Water Level (m/dry)	SWP (mm)	Seating Blows 75	Seating Blows 75	Seating Pen (mm)	Main Blows 75	Main Blows 75	Main Blows 75	Main Blows 75	Main Pen (mm)

B Bulk
D Disturbed
ES Environmental
P Piston
U Open tube (U100)
UT Undisturbed thin wall
W Water
…# Failed no recovery
…#B Failed recovd as bulk

UT/U/P require
- blowcount
- length
- casing depth
- water level

REMARKS

push sample 92 with thick walled shelby, no penetration, damaged tube.
E.O.H. @ 69.50m BML confirmed by client rep.

BACKFILL

Top (m)	Base (m)	Type

AQUIFER PROTECTION

Hole Depth (m)	Bentonite Seal Top (m)	Bentonite Seal Base (m)	Bentonite Seal Curing (hh:mm)

MISCELLANEOUS

- Inspection Pit
- CAT Survey
- Standpipe/Piezometer

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 13:23:48 by b.marsden
Plate 2.220

Project Name	Arklow Bank Wind Farm
Project Reference	F186642
Location ID	**BH28**
Date	Tuesday 2022-06-14

Additional Information

REMARKS

ATTACHED FILES

SKETCH

PHOTOS

Gaia.Forms (3.5.3839.014269) - RotaryDrillingDailyReport (IMS:ONGE_FGSL_OND_FOR_064) - PDF generated on 2022-06-15 13:23:48 by b.marsden

Project No. F186642

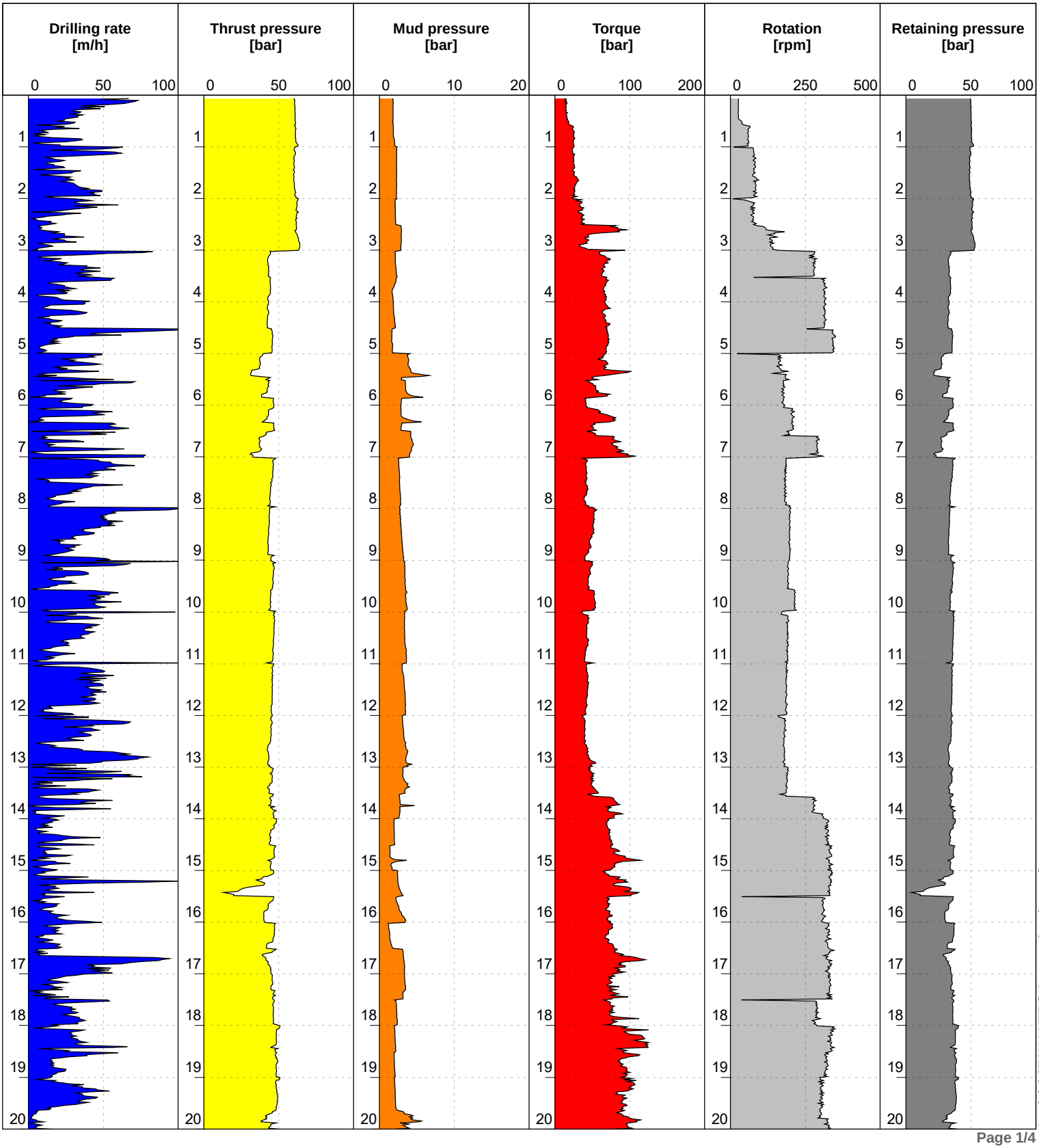
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jun 6, 2022	Elevation [m LAT]	: - 24.80	Method	: RORC	Tool	: NCD	Easting [m]	: 303457.62
End date	: Jun 10, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 5866922.76
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 75.00 m

1/100

Drill : BH01

EXEPF 5.34/LB2EPF580EN



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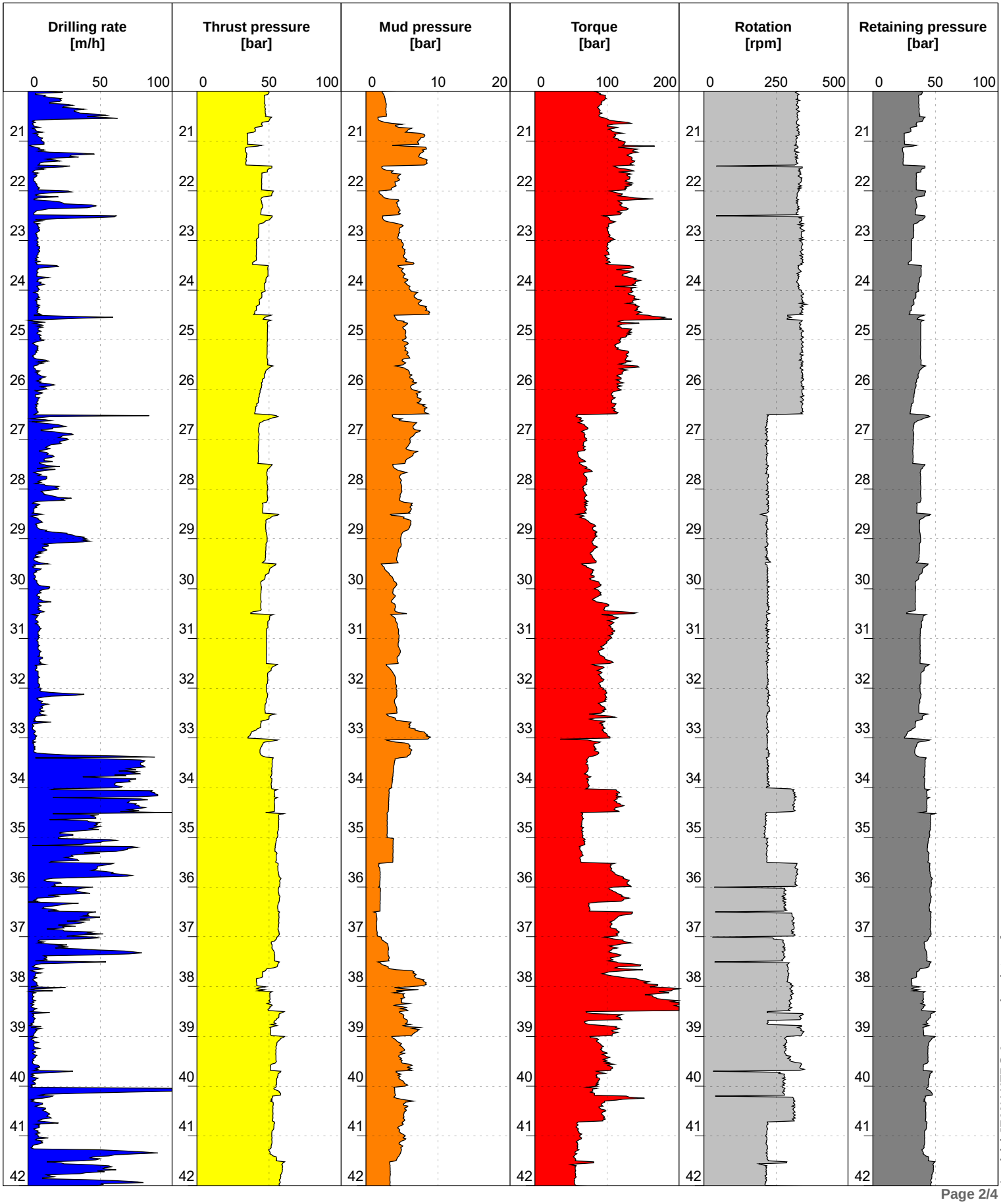
1/100

BH01



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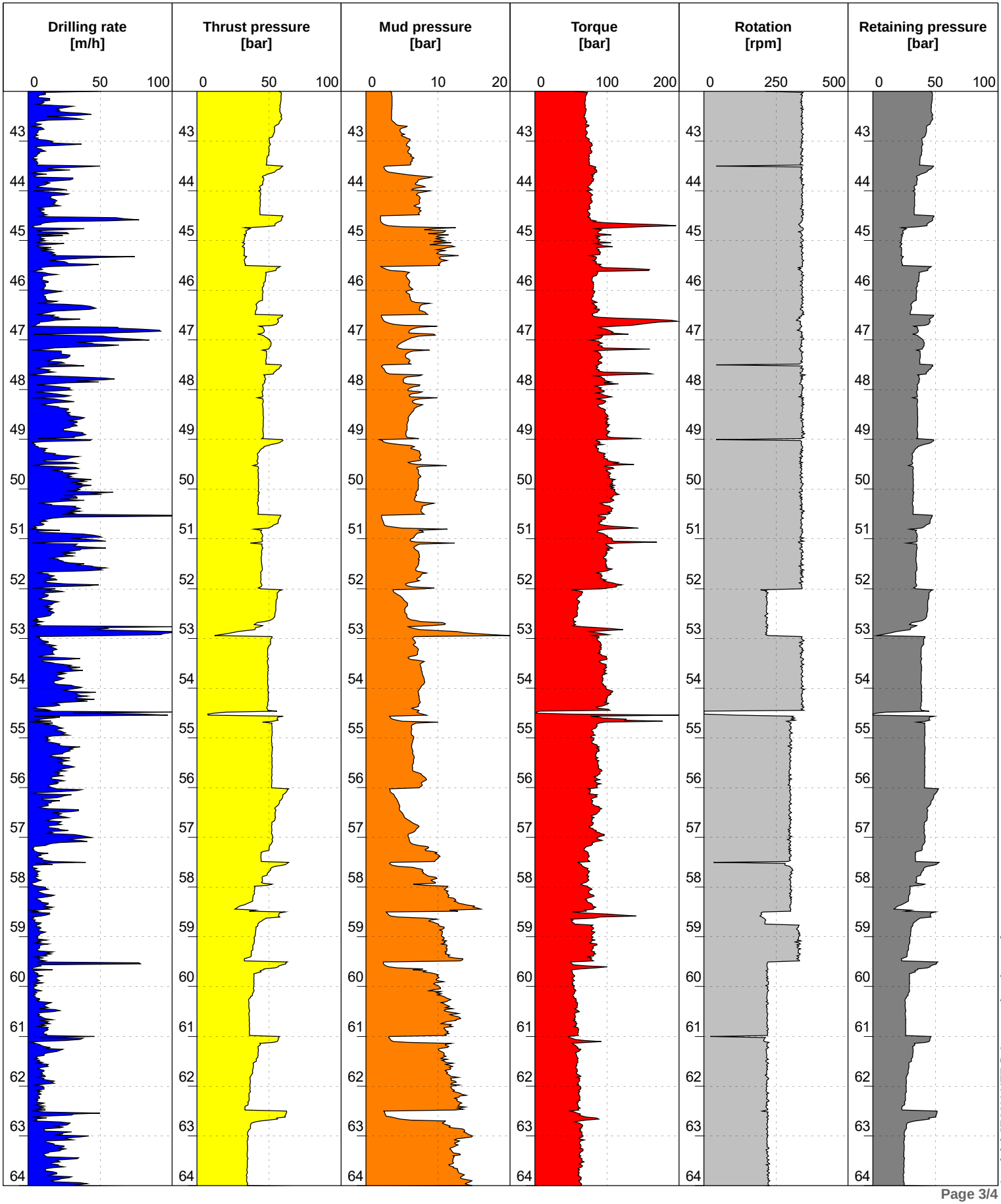
1/100

BH01



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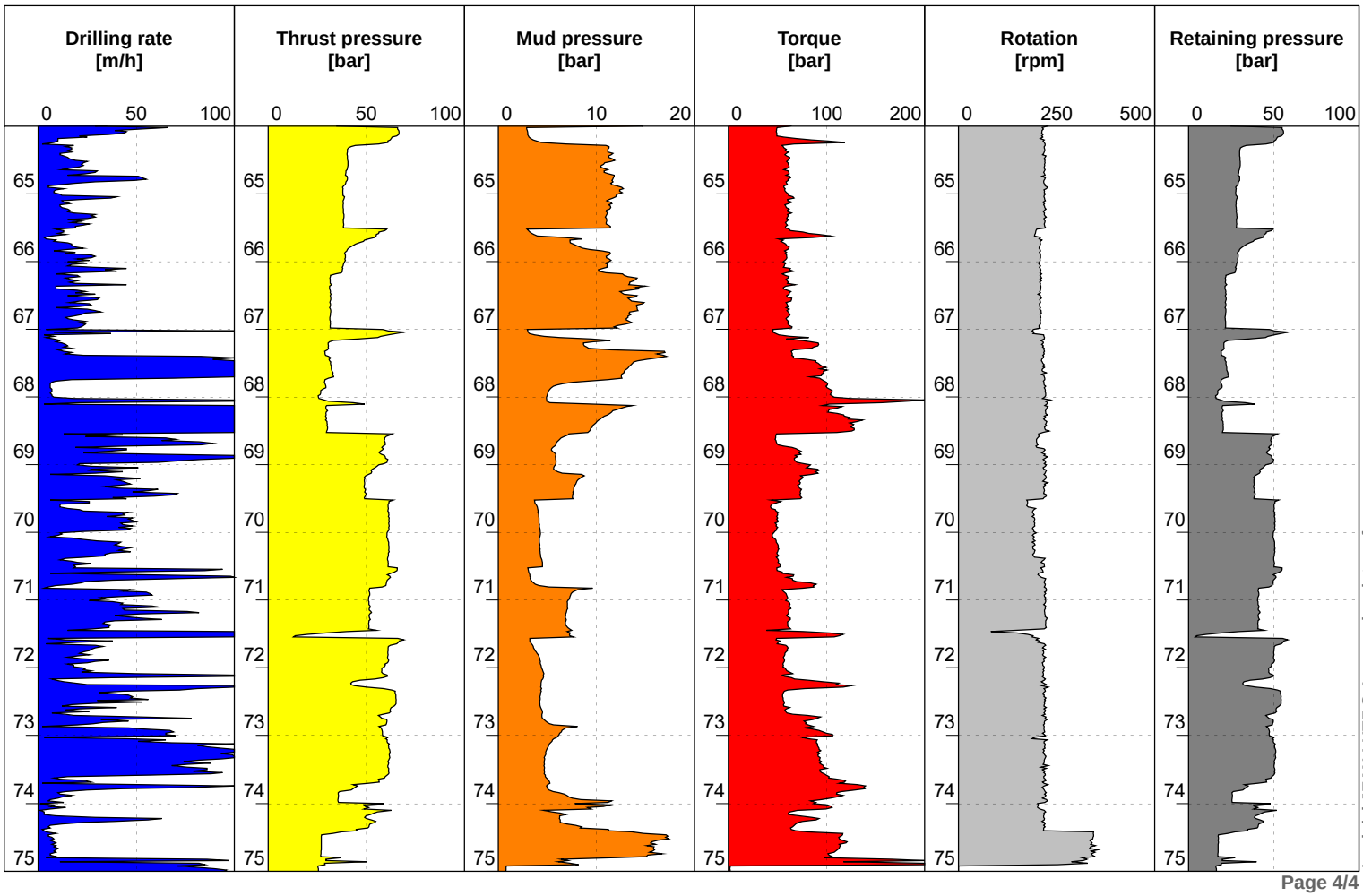
1/100

BH01



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Project No. F186642

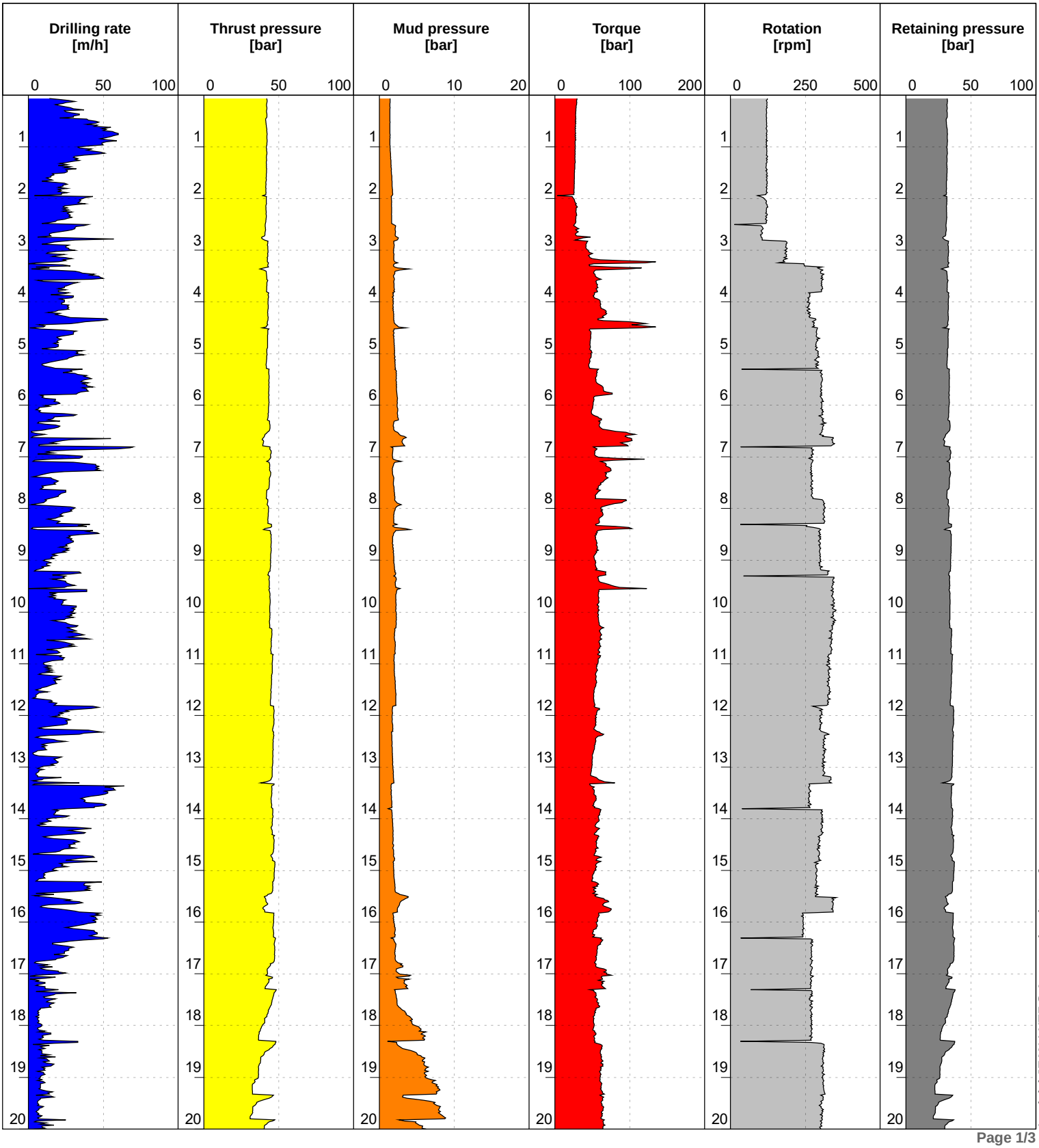
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jul 9, 2022	Elevation [m LAT]	: - 19.40	Method	: RORC	Tool	: NCD	Easting [m]	: 301523.68
End date	: Jul 13, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 5856887.61
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 57.86 m

1/100

Drill : BH08

EXEPF 5.34/LB2EPF580EN



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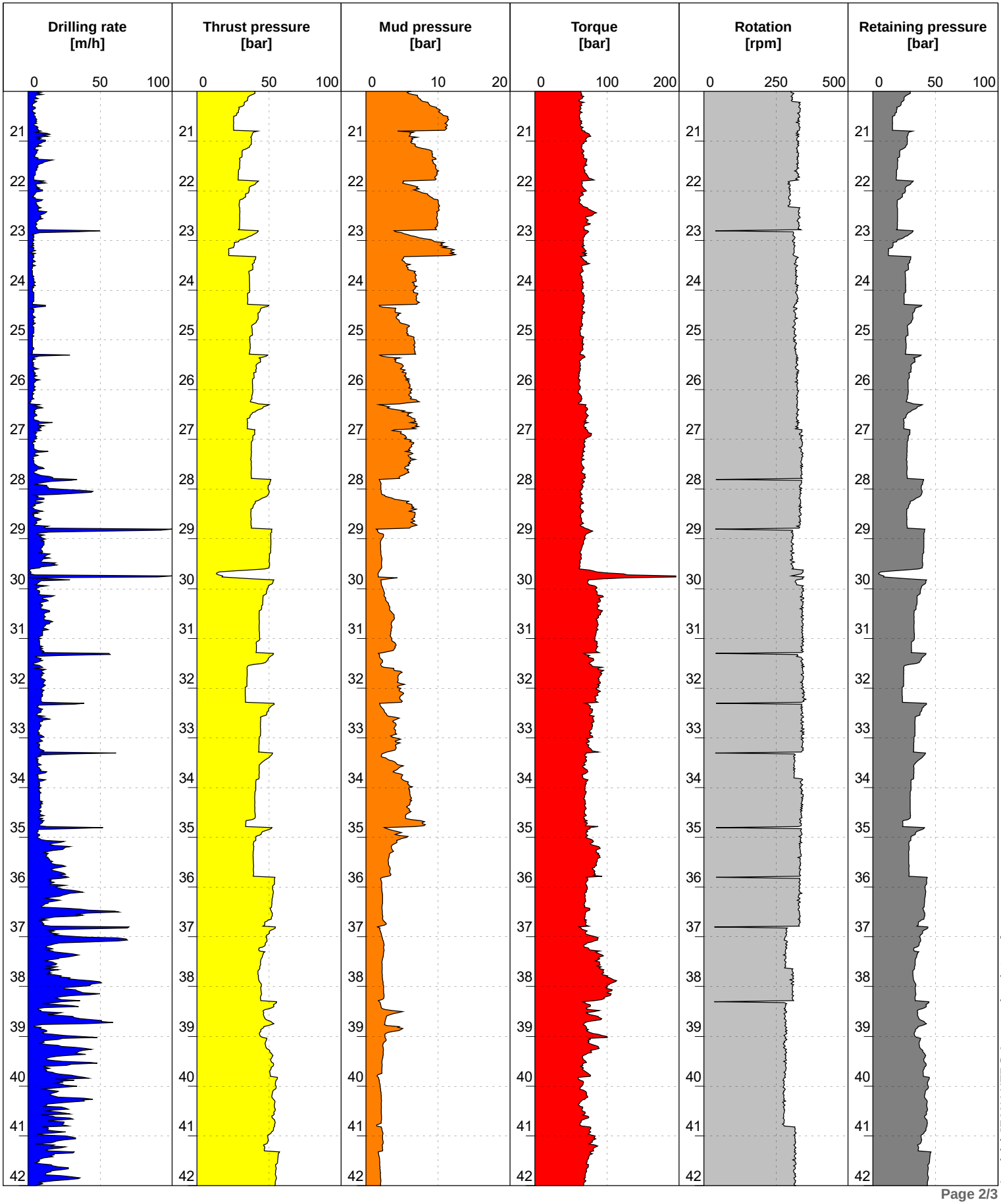
1/100

BH08



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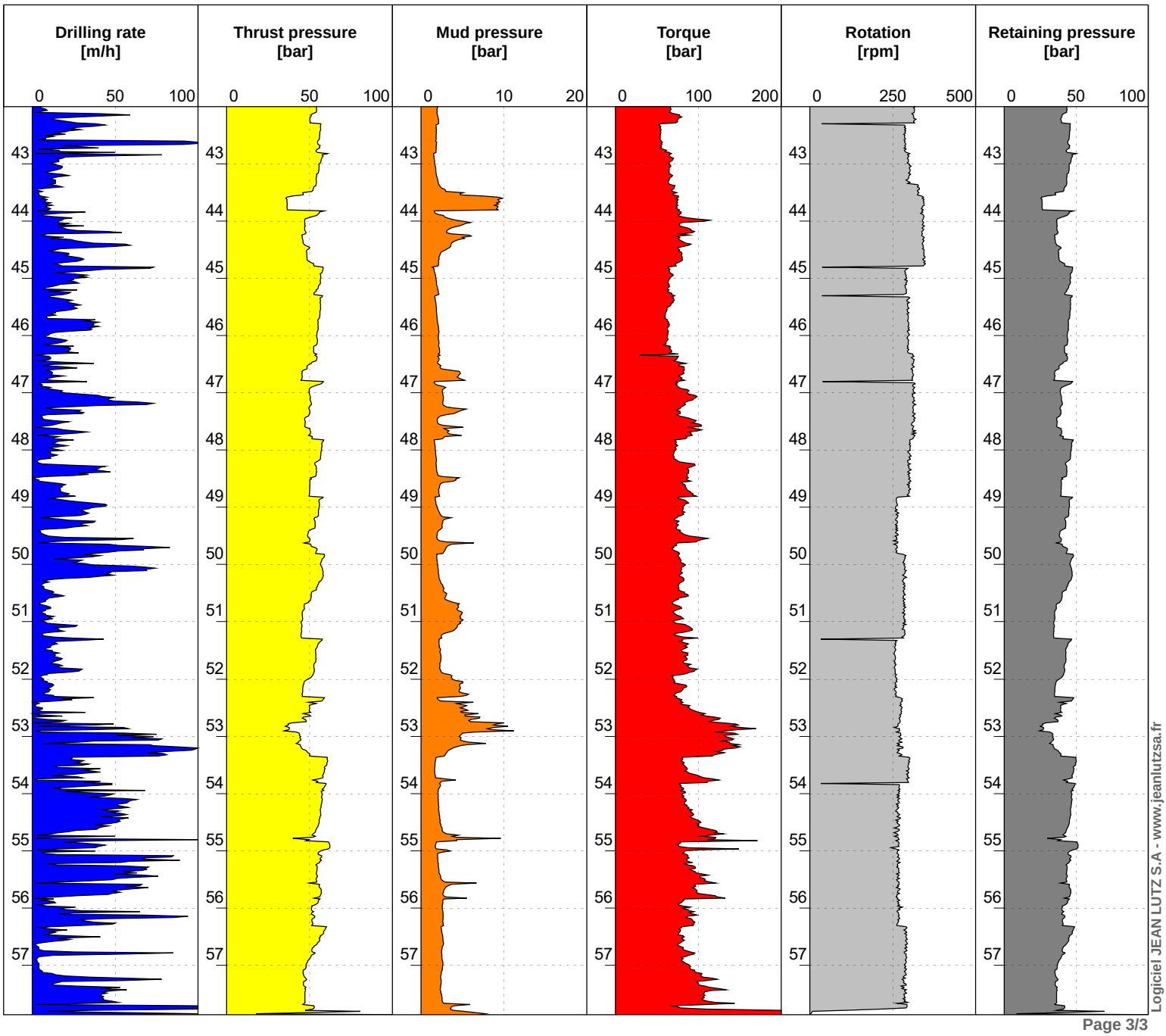
1/100

BH08



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Project No. F186642

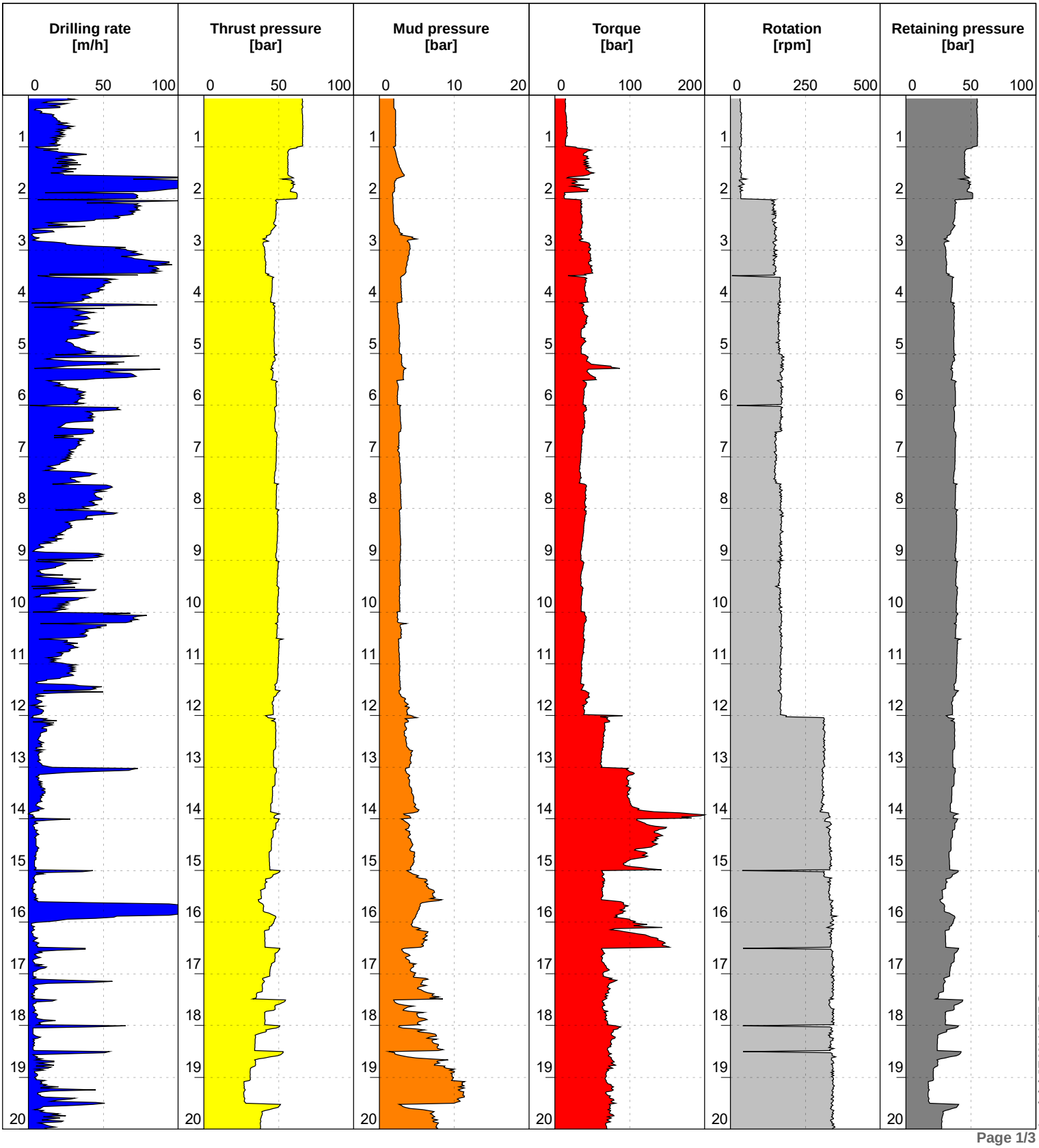
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jun 15, 2022	Elevation [m LAT]	: - 30.50	Method	: RORC	Tool	: NCD	Easting [m]	: 300261.50
End date	: Jun 19, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 583958.52
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 55.50 m

1/100

Drill : BH09

EXEPF 5.34/LB2EPF580EN



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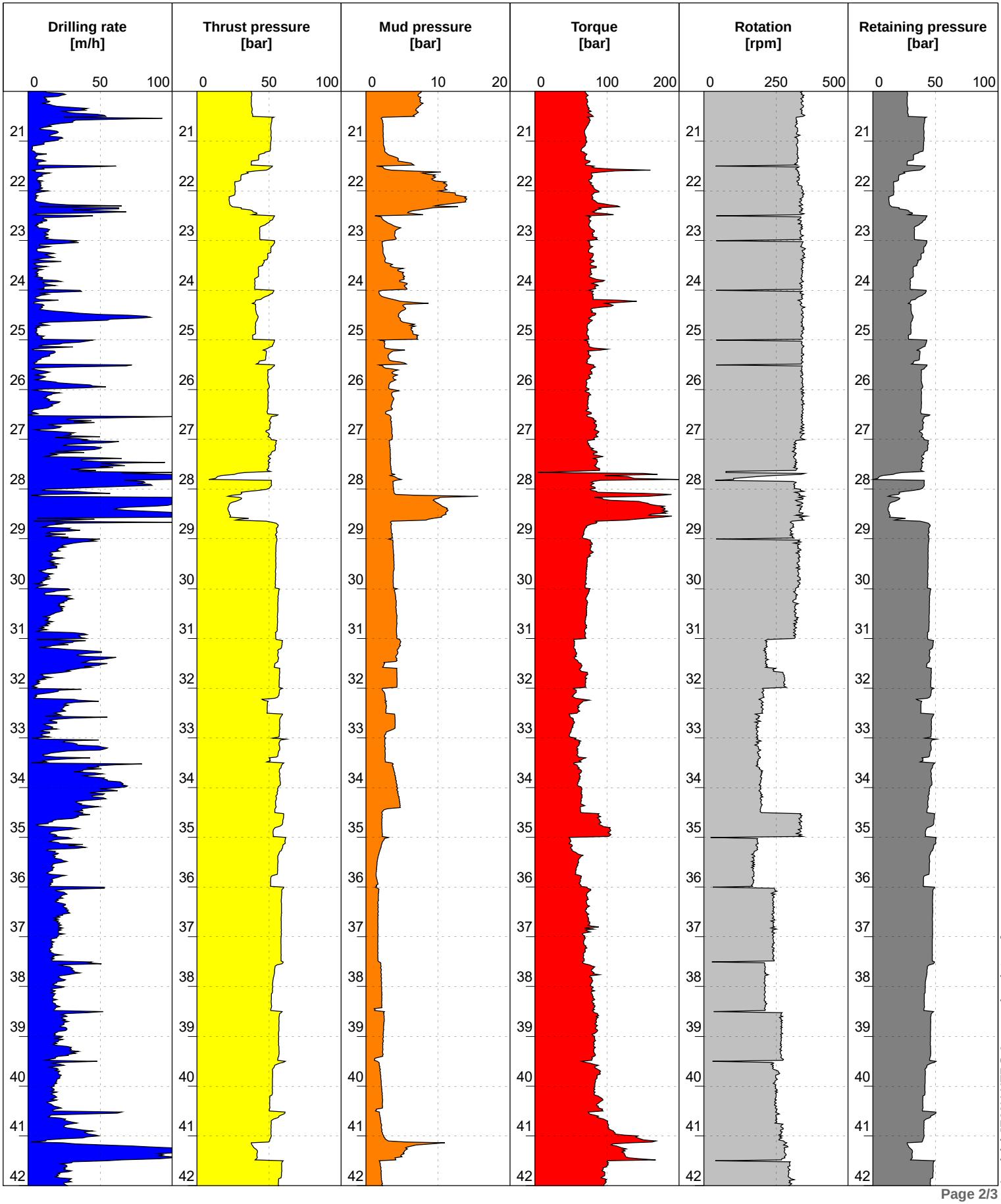
1/100

BH09



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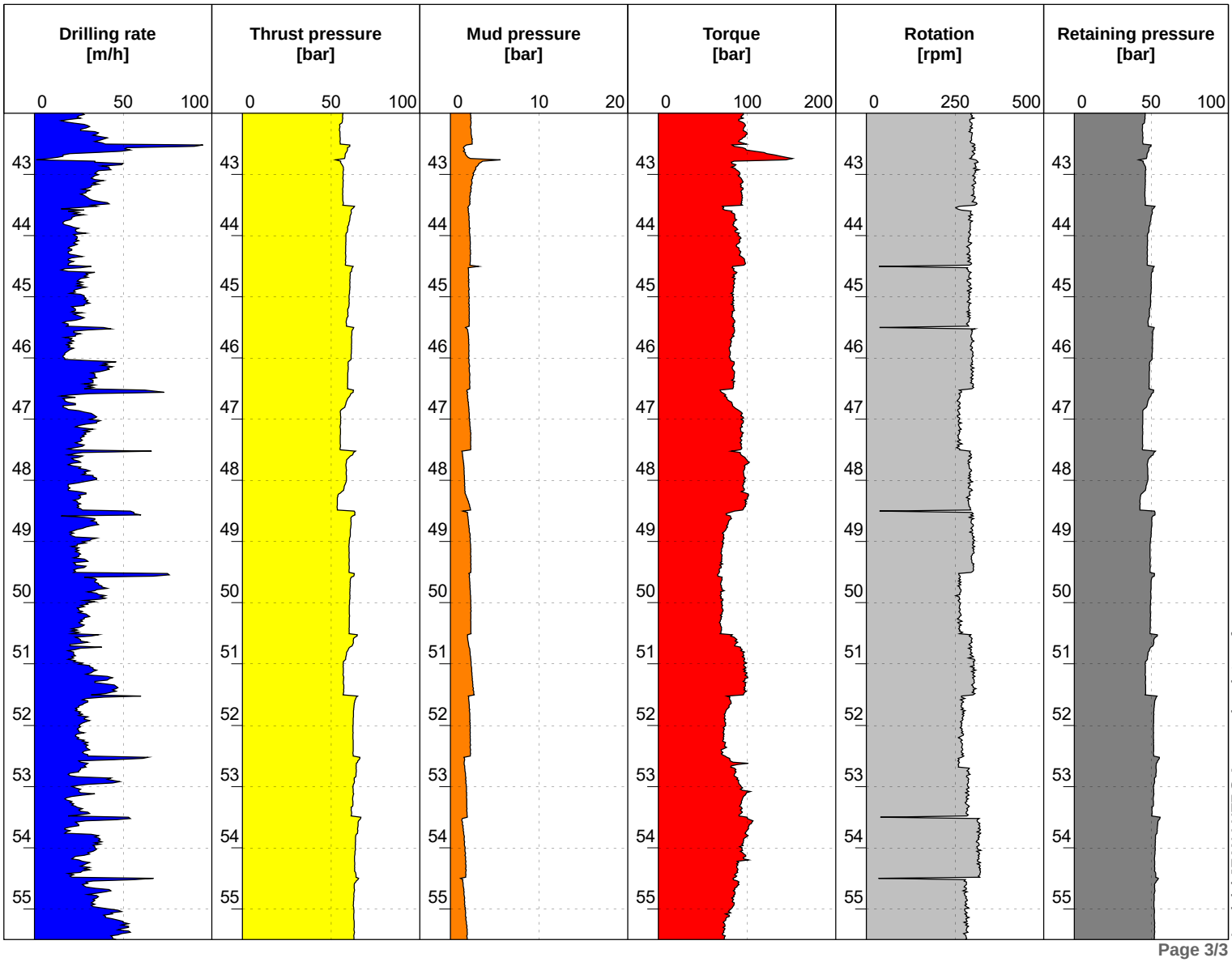
1/100

BH09



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Project No. F186642

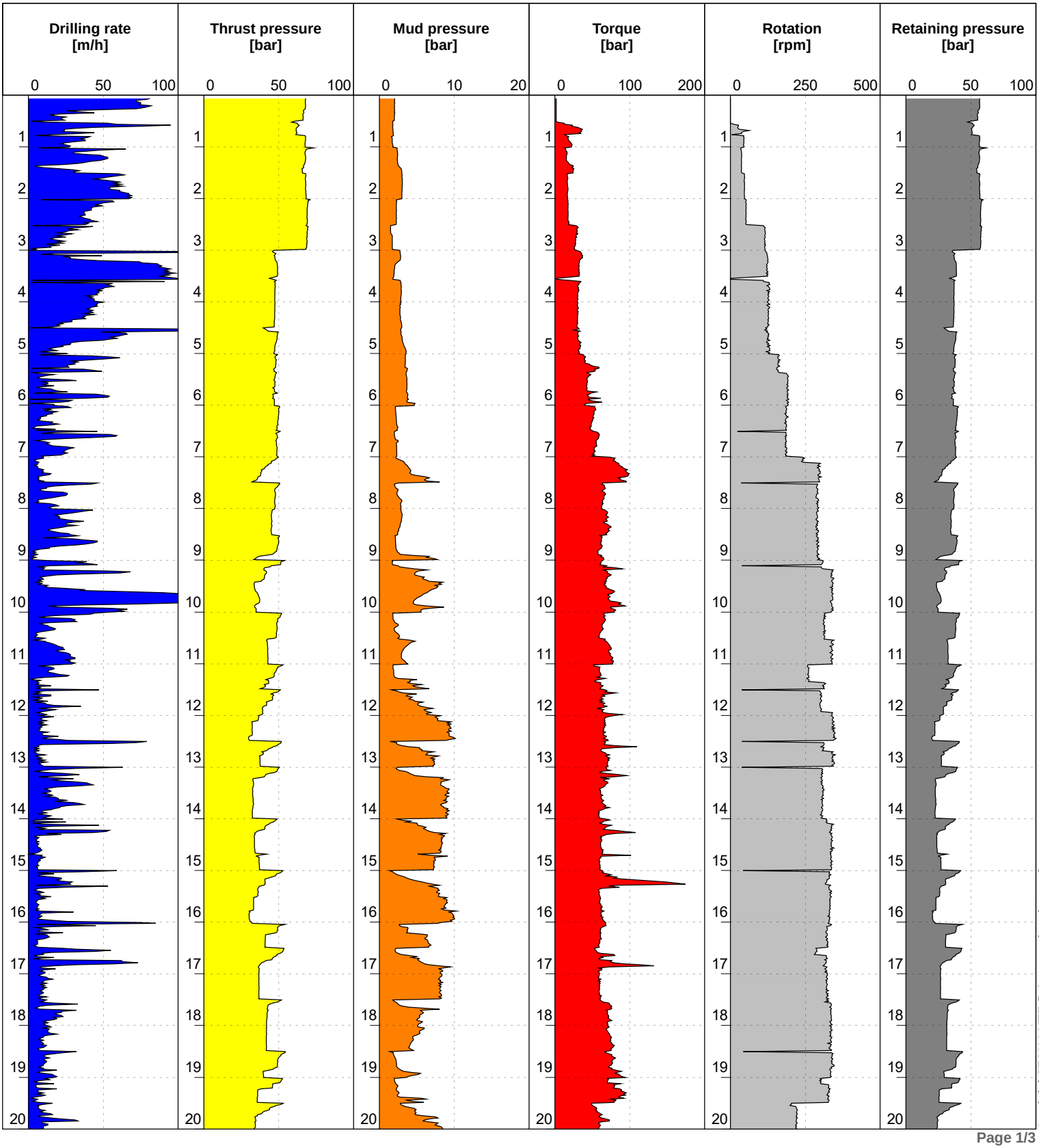
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jun 29, 2022	Elevation [m LAT]	: - 32.50	Method	: RORC	Tool	: NCD	Easting [m]	: 301945.77
End date	: Jul 2, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 5852228.48
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 62.48 m

1/100

Drill : BH10

EXEPF 5.34/LB2EPF580EN



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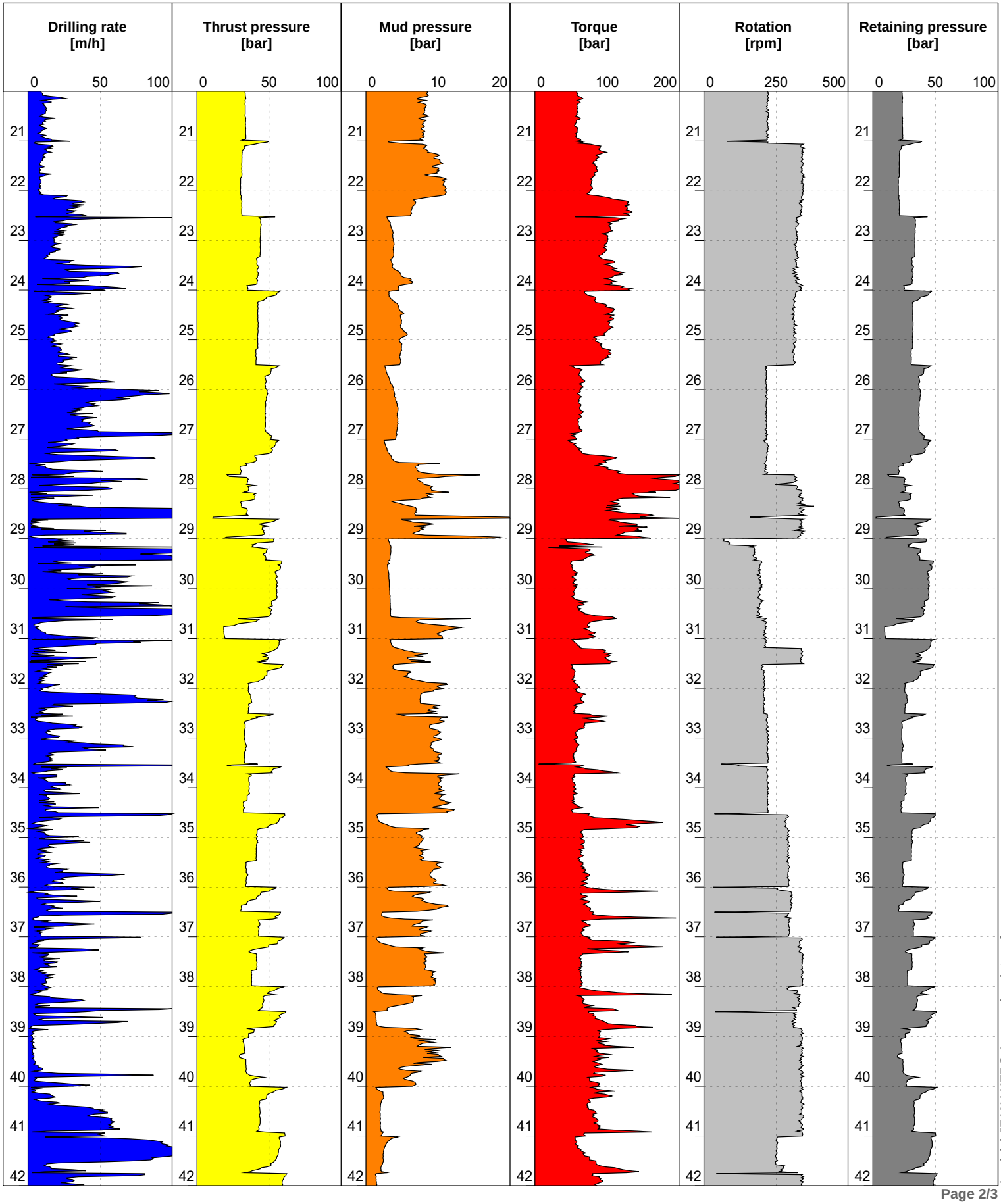
1/100

BH10



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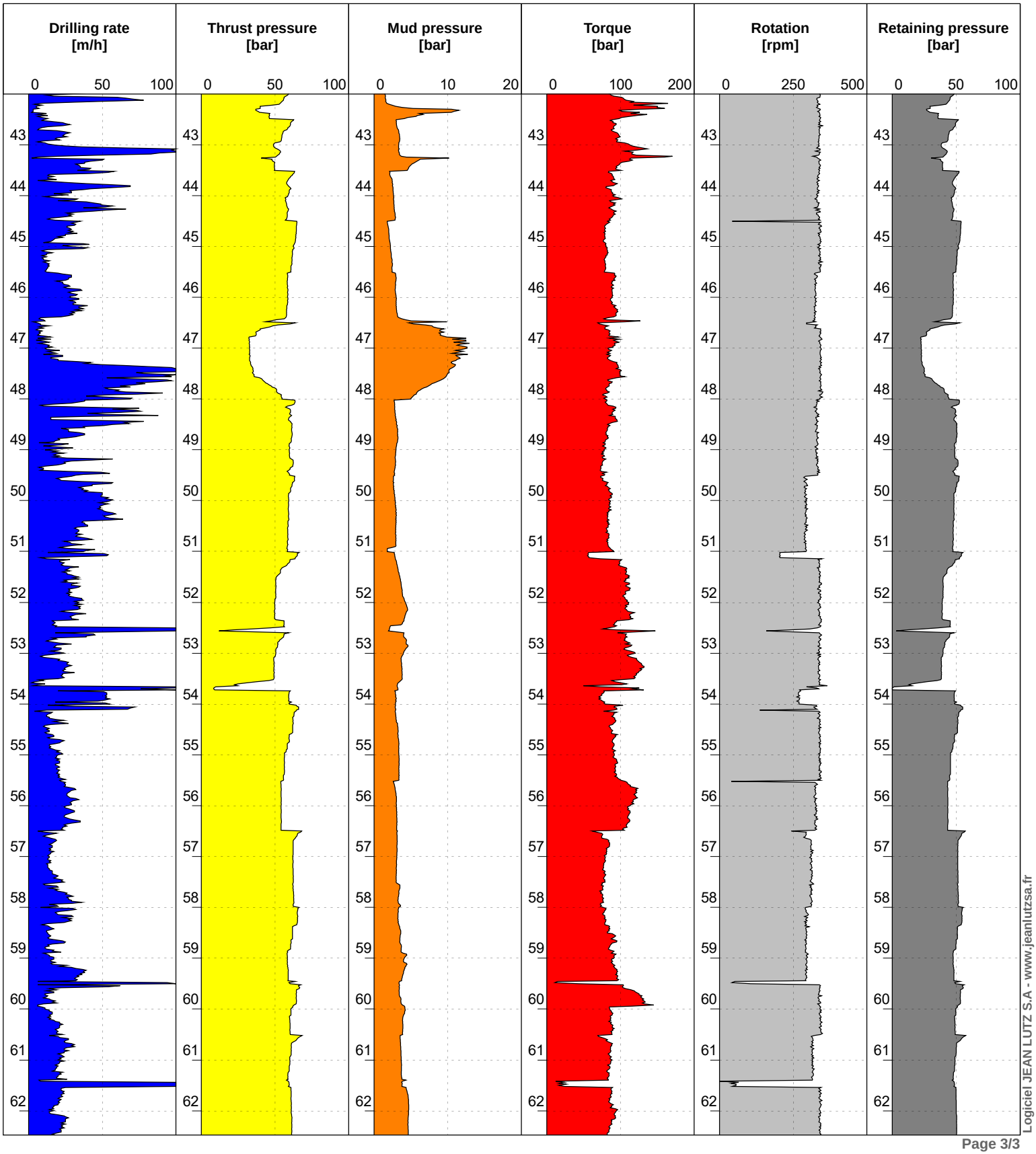
1/100

BH10



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Project No. F186642

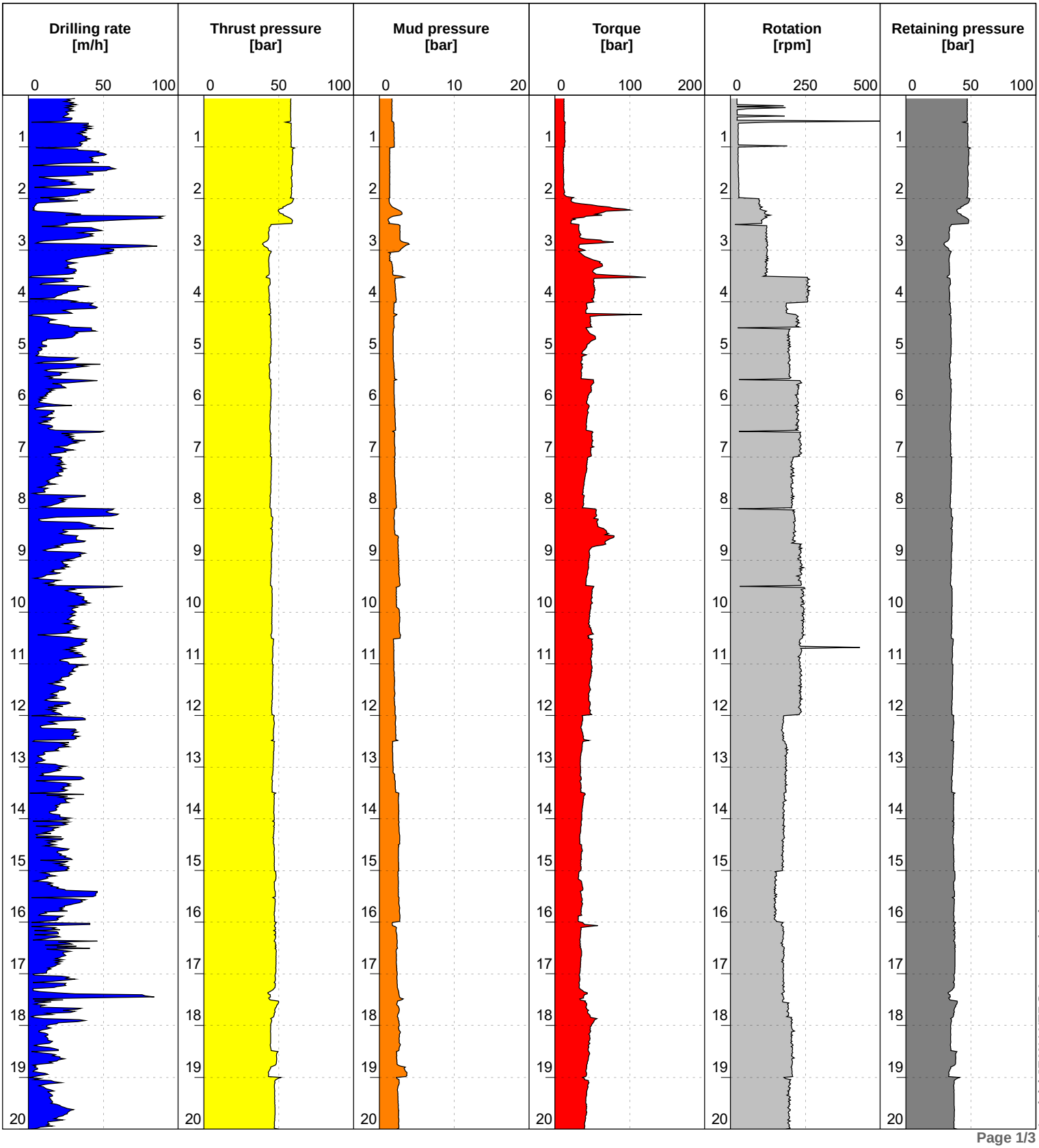
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jun 19, 2022	Elevation [m LAT]	: - 20.40	Method	: RORC	Tool	: NCD	Easting [m]	: 299352.92
End date	: Jun 23, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 5847931.47
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 53.48 m

1/100

Drill : BH12

EXEPF 5.34/LB2EPF580EN



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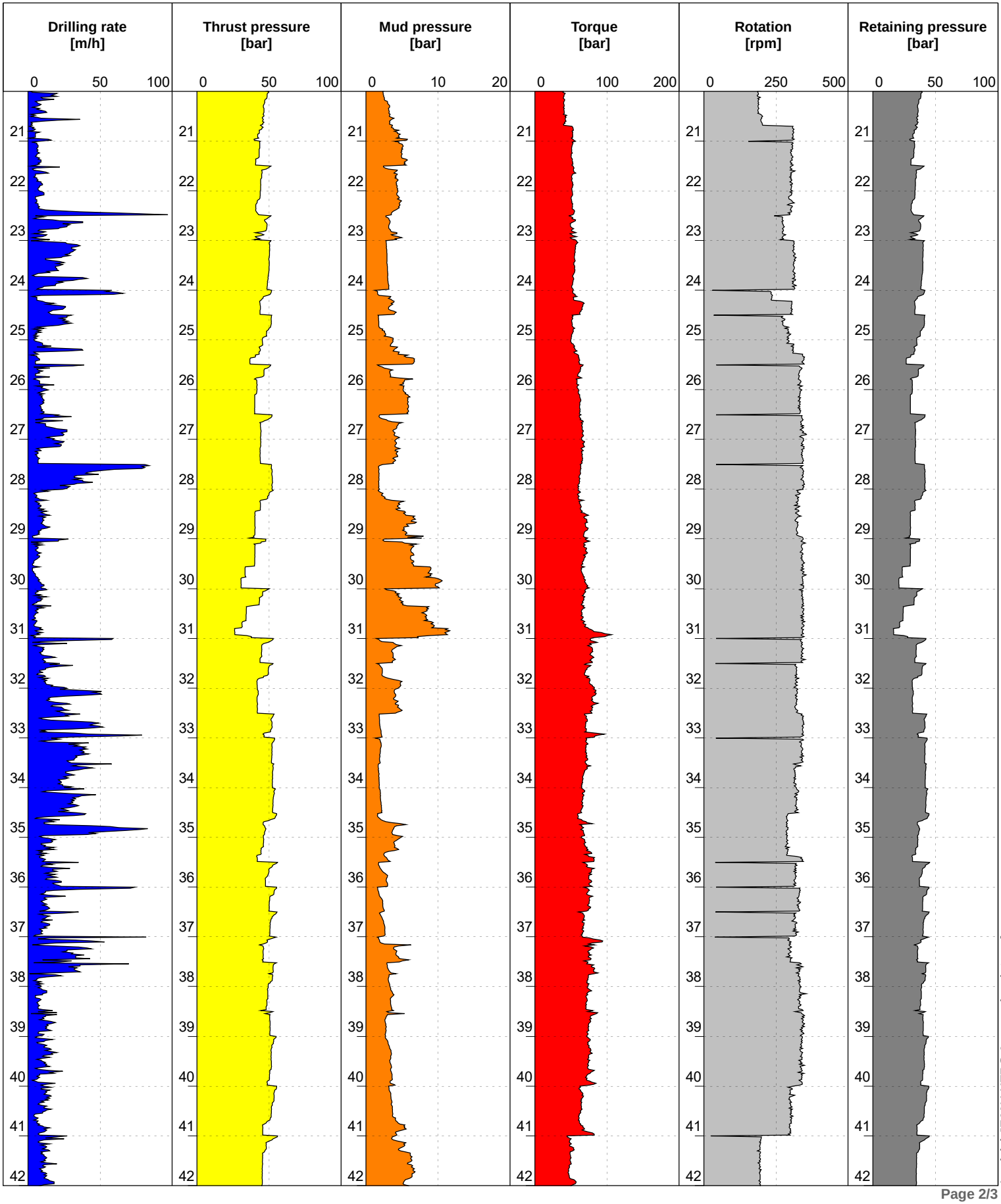
1/100

BH12



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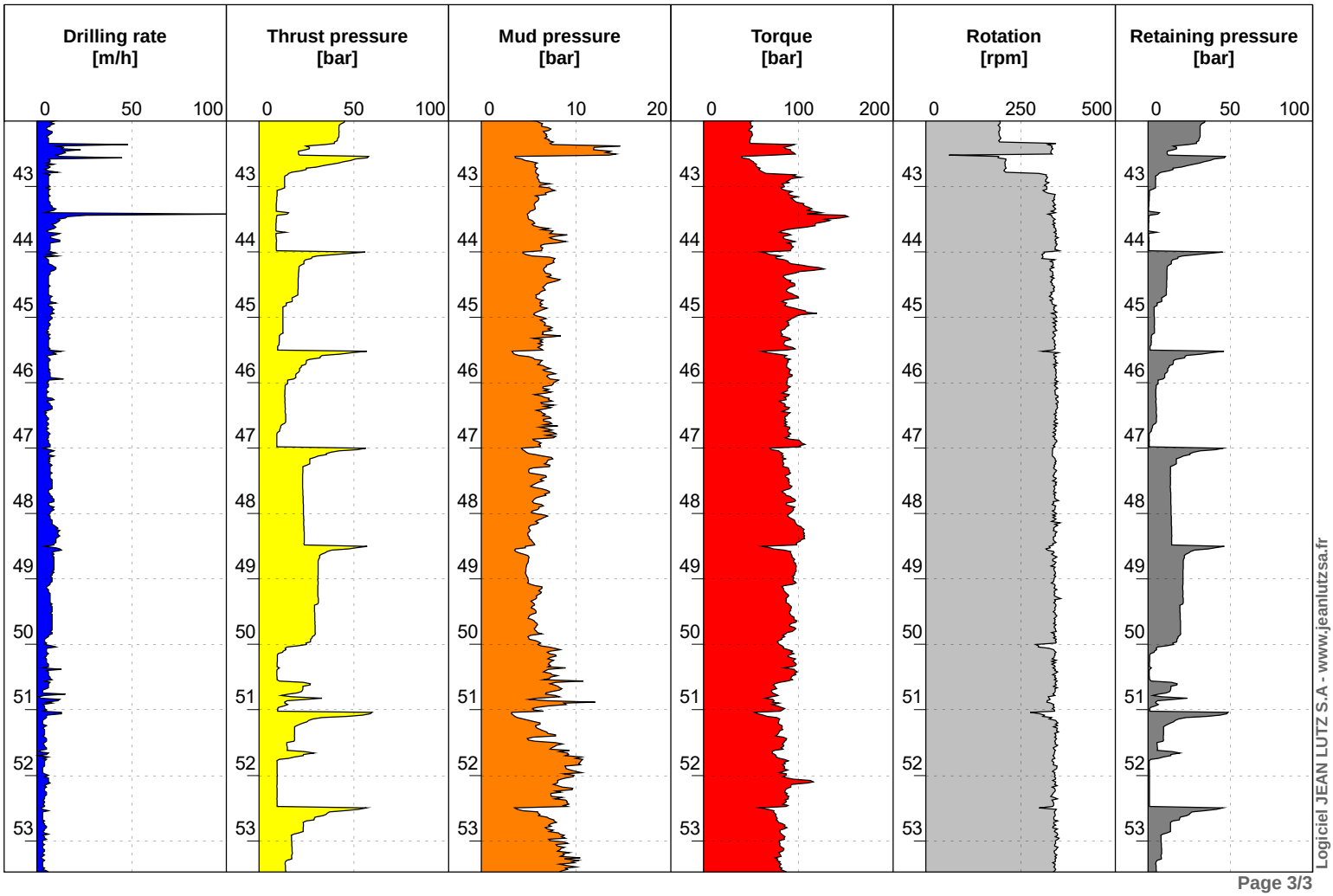
1/100

BH12



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Project No. F186642

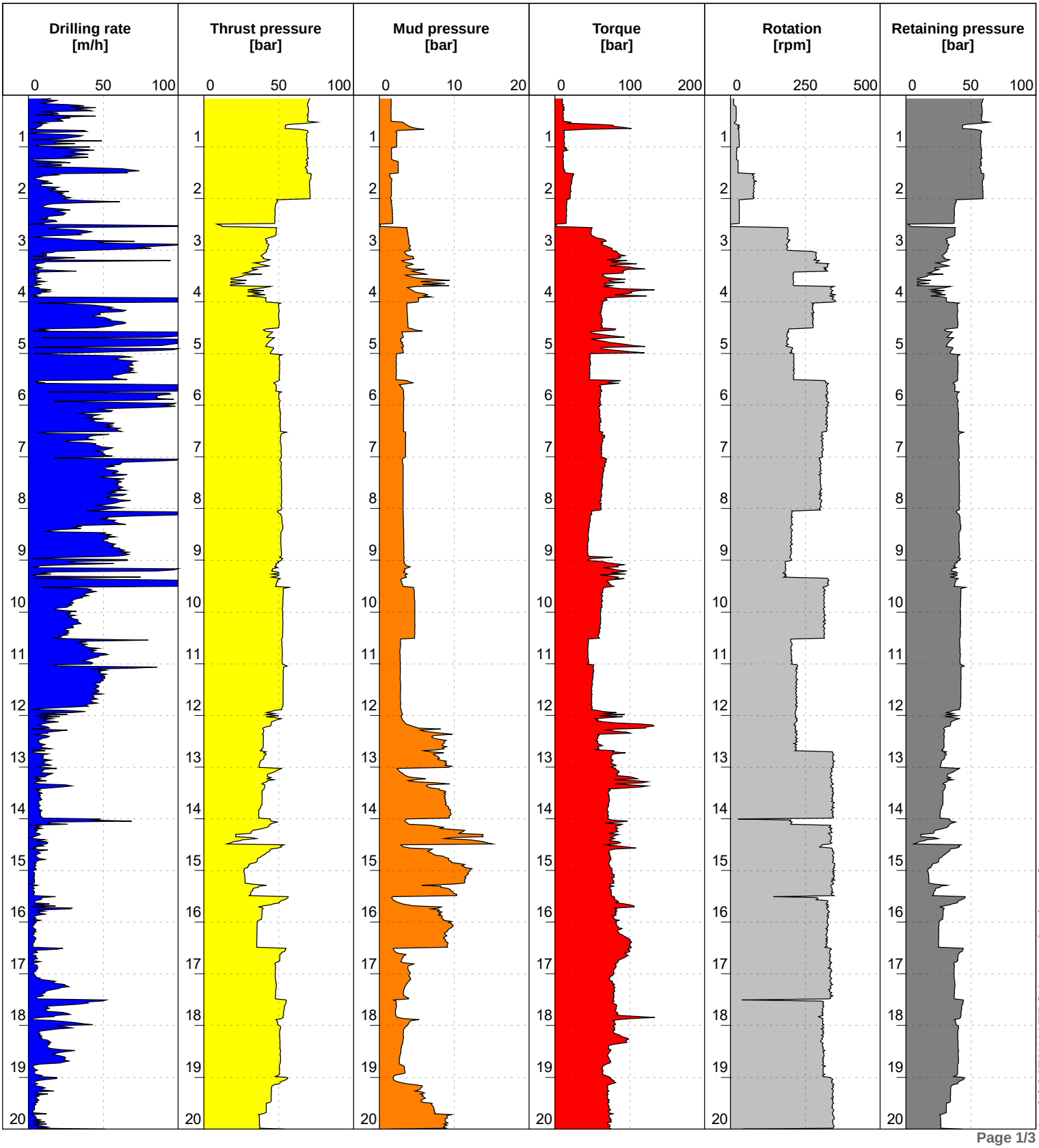
Arklwo Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: **Jul 3, 2022**	Elevation [m LAT]	: **- 38.10**	Method	: **RORC**	Tool	: **NCD**	Easting [m]	: **300820.59**
End date	: **Jul 5, 2022**	Machine	: **Commachio MC1200**	Fluid	: **Water/PureBore**	Diameter [mm]	: **146**	Northing [m]	: **5847130.59**
		Angle	: **90**	Casing	: **Geobor-S**			Depth [BSL]	: **0.00 - 51.48 m**

1/100

Drill : BH13

EXEPF 5.34/LB2EPF580EN



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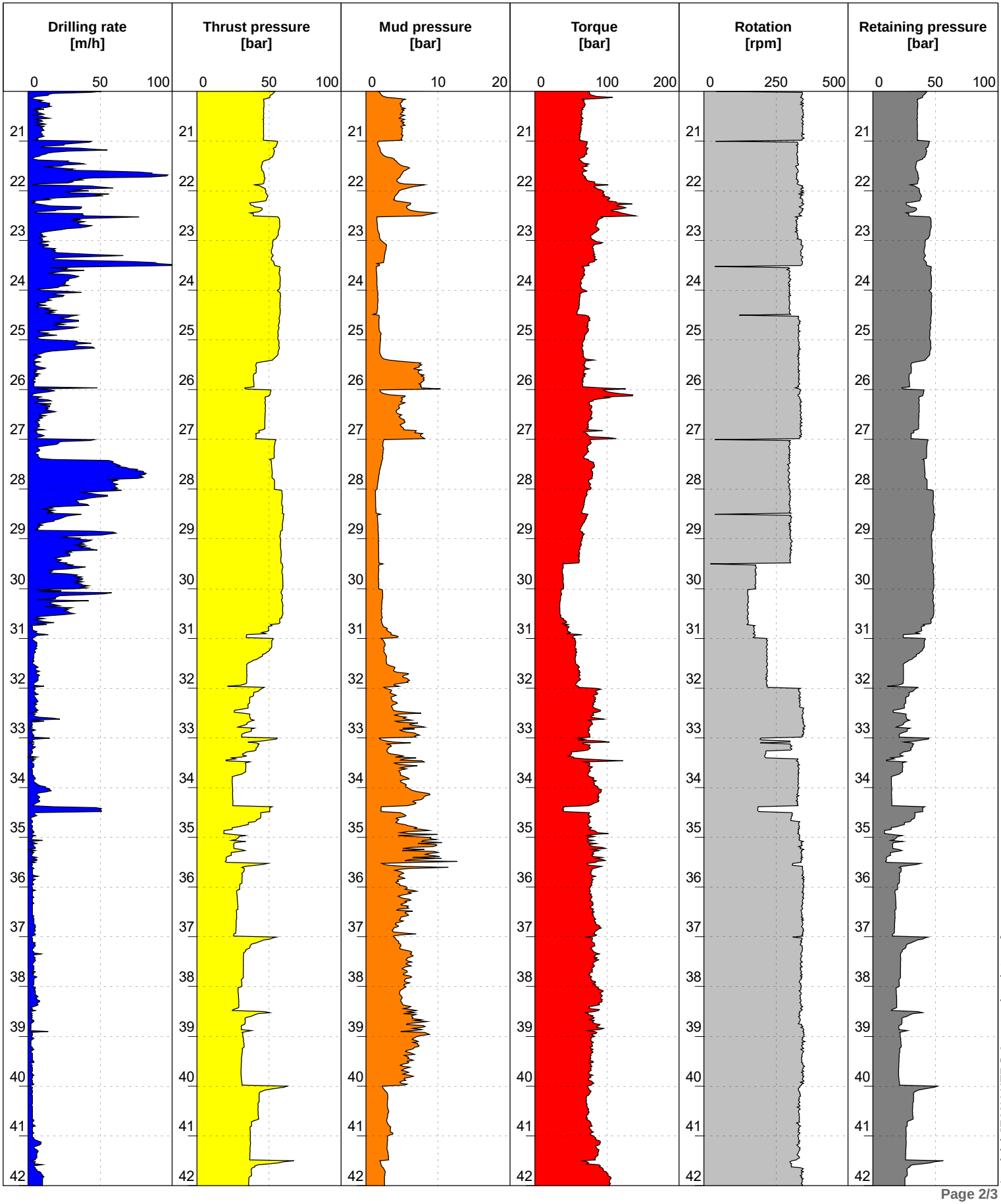
1/100

BH13



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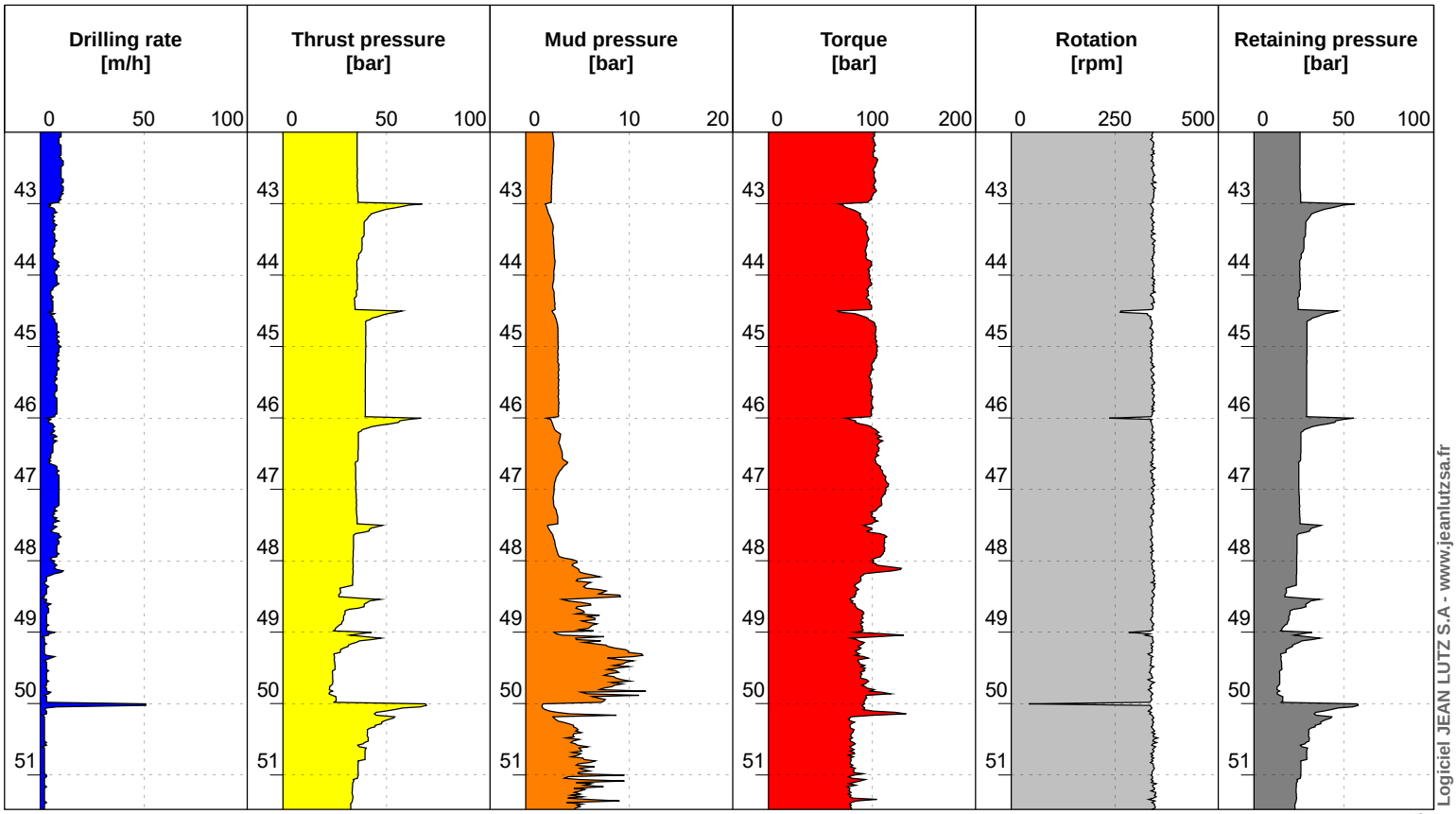
1/100

BH13



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Project No. F186642

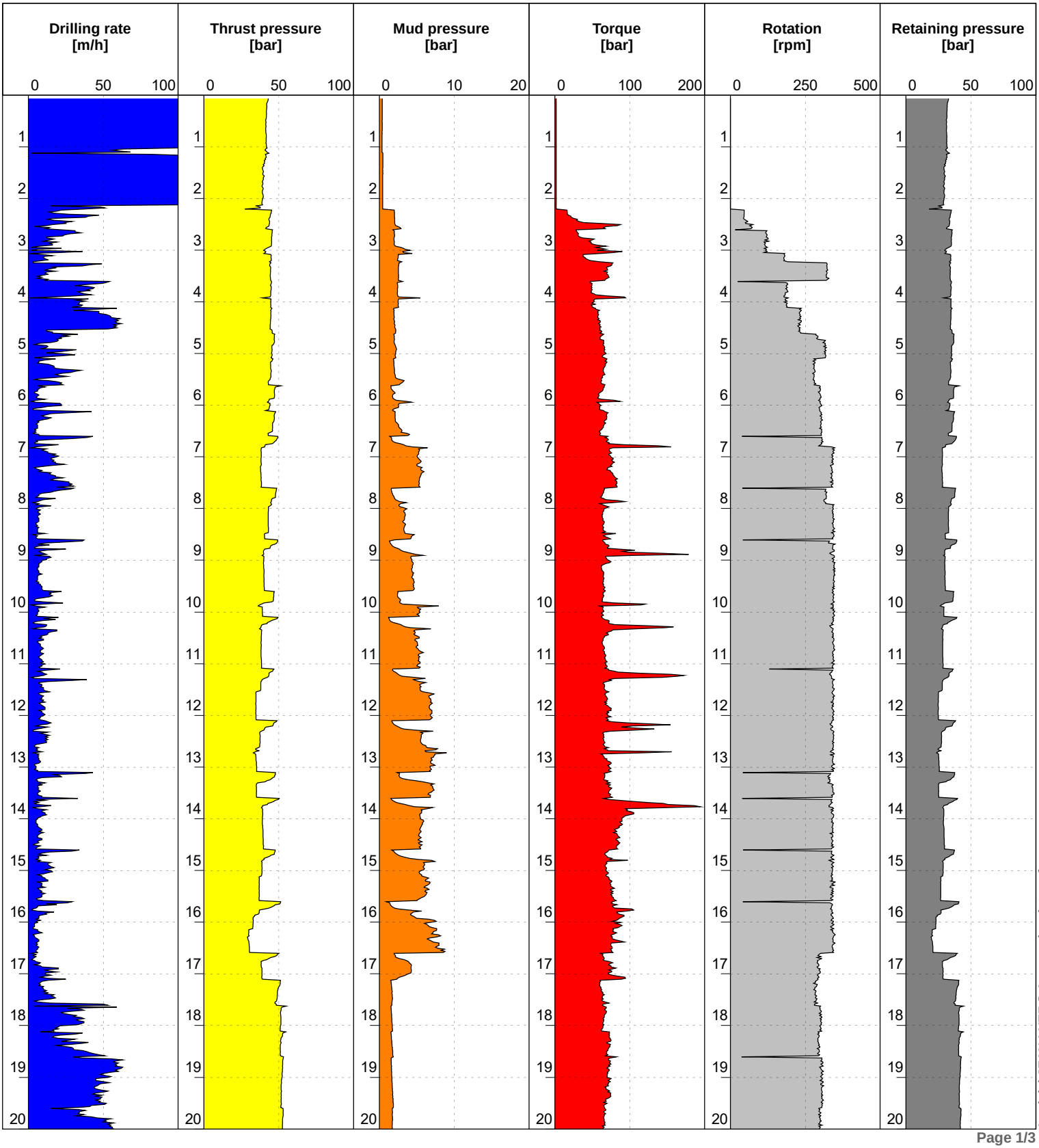
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: **Jul 7, 2022**	Elevation [m LAT]	: **- 28.40**	Method	: **RORC**	Tool	: **NCD**	Easting [m]	: **303136.14**
End date	: **Jul 9, 2022**	Machine	: **Comacchio MC1200**	Fluid	: **Water/PureBore**	Diameter [mm]	: **146**	Northing [m]	: **5857856.82**
		Angle	: **90**	Casing	: **Geobor-S**			Depth [BSL]	: **0.00 - 59.60 m**

1/100

Drill : BH20

EXEPF 5.34/LB2EPF580EN



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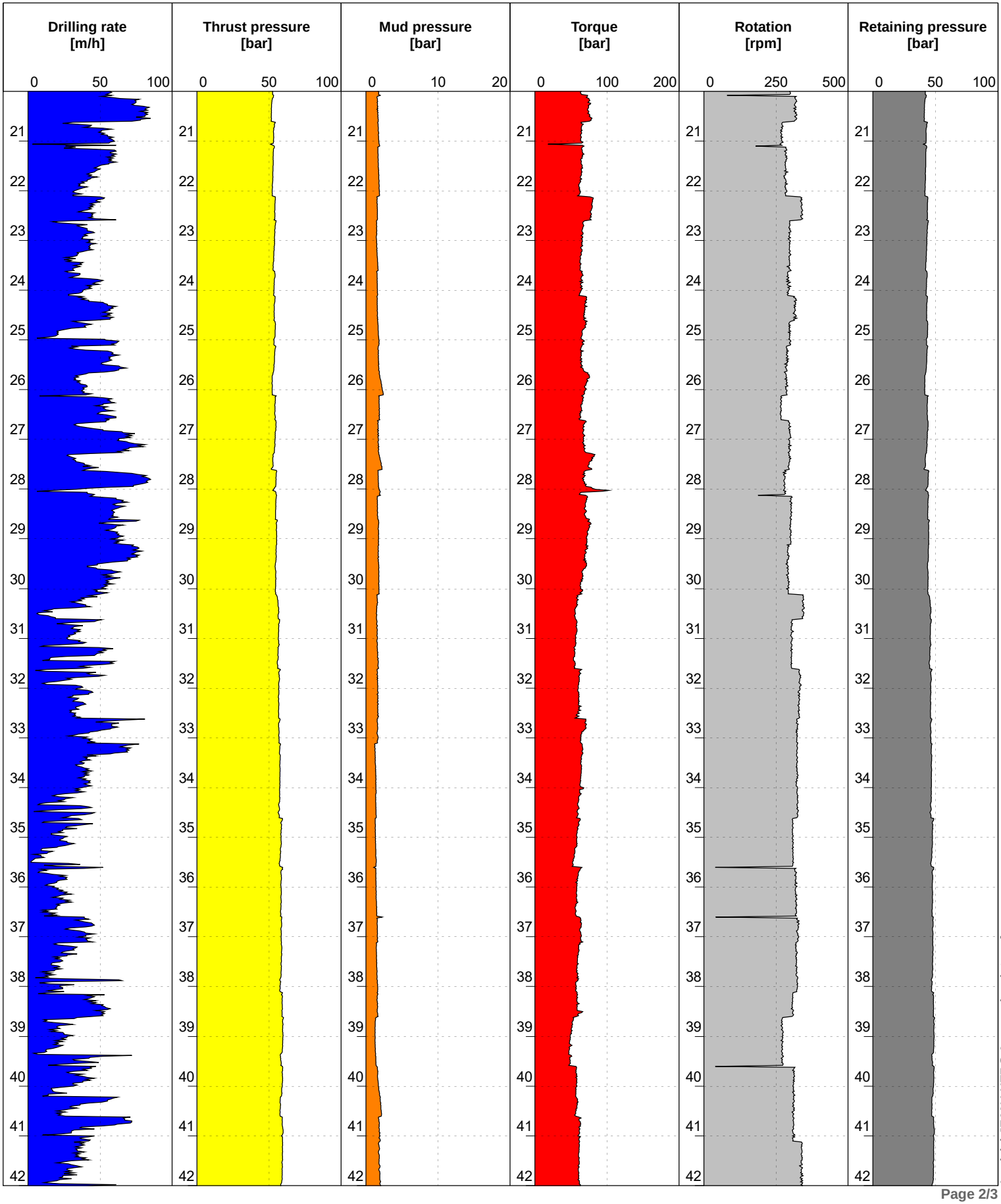
1/100

BH20



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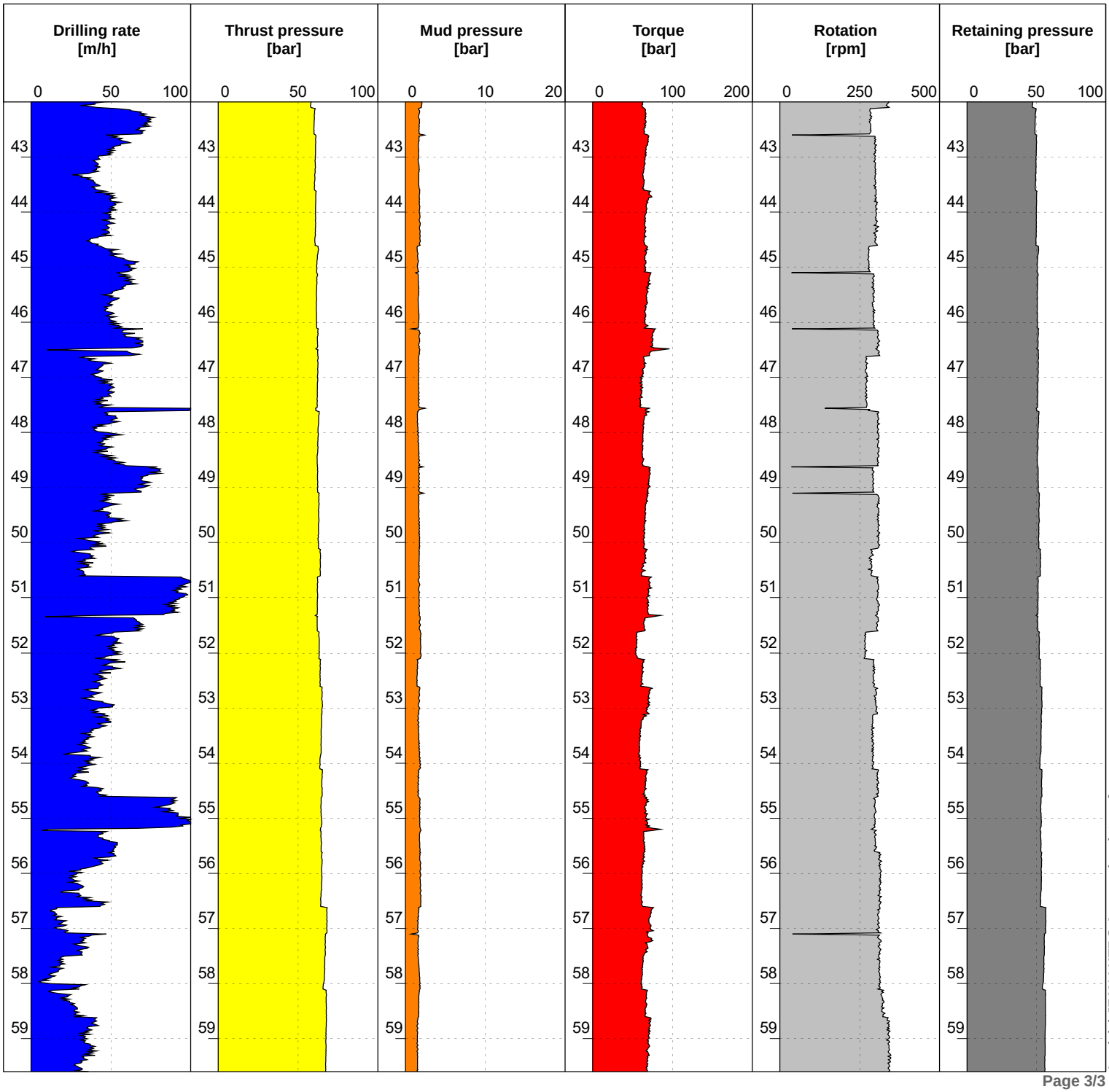
1/100

BH20



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Project No. F186642

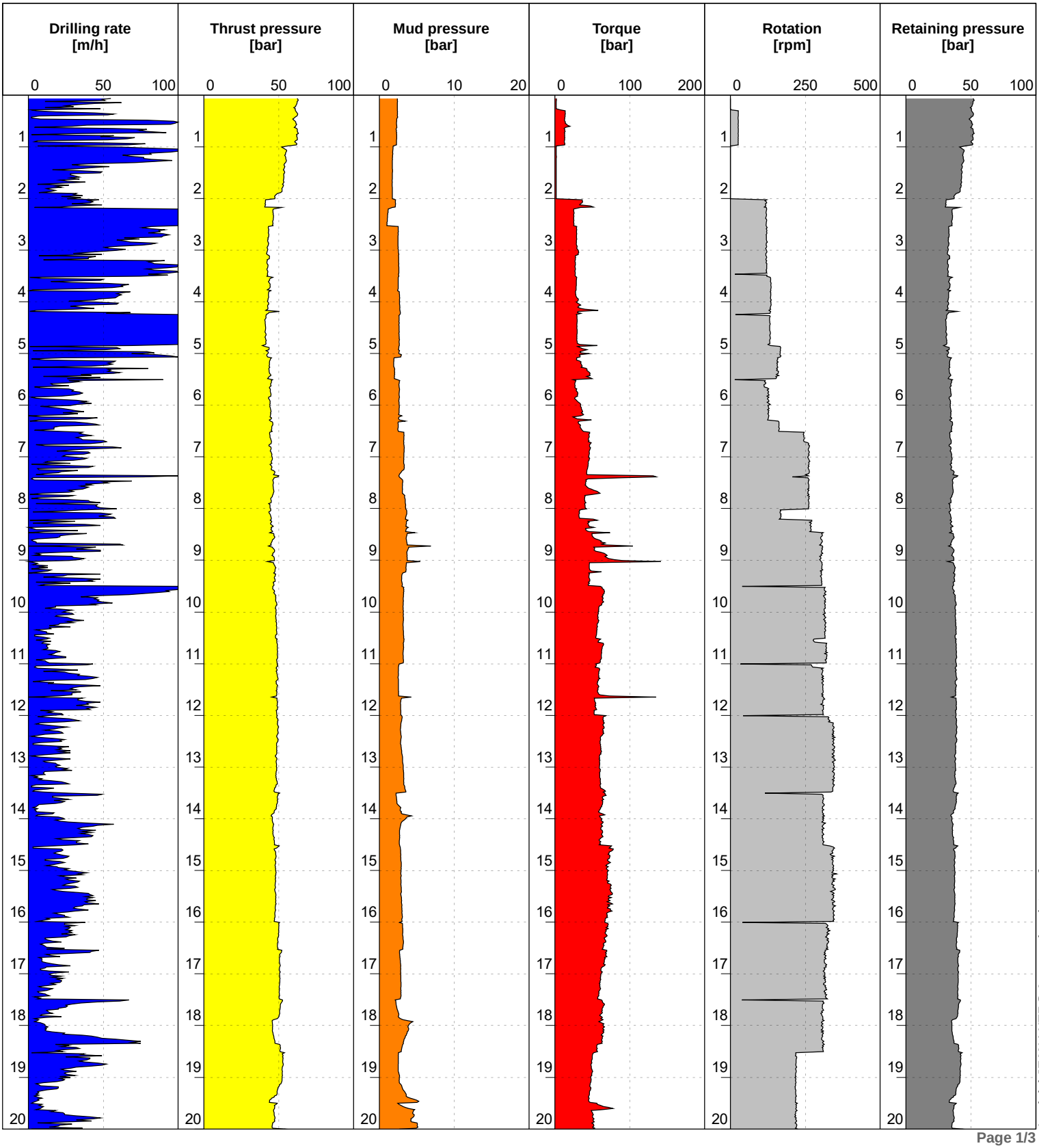
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: **Jun 1, 2022**	Elevation [m LAT]	: **- 37.80**	Method	: **RORC**	Tool	: **NCD**	Easting [m]	: **297804.74**
End date	: **Jun 4, 2022**	Machine	: **Comacchio MC1200**	Fluid	: **Water/PureBore**	Diameter [mm]	: **146**	Northing [m]	: **5842066.43**
		Angle	: **90**	Casing	: **Geobor-S**			Depth [BSL]	: **0.00 - 59.28 m**

1/100

Drill : BH26

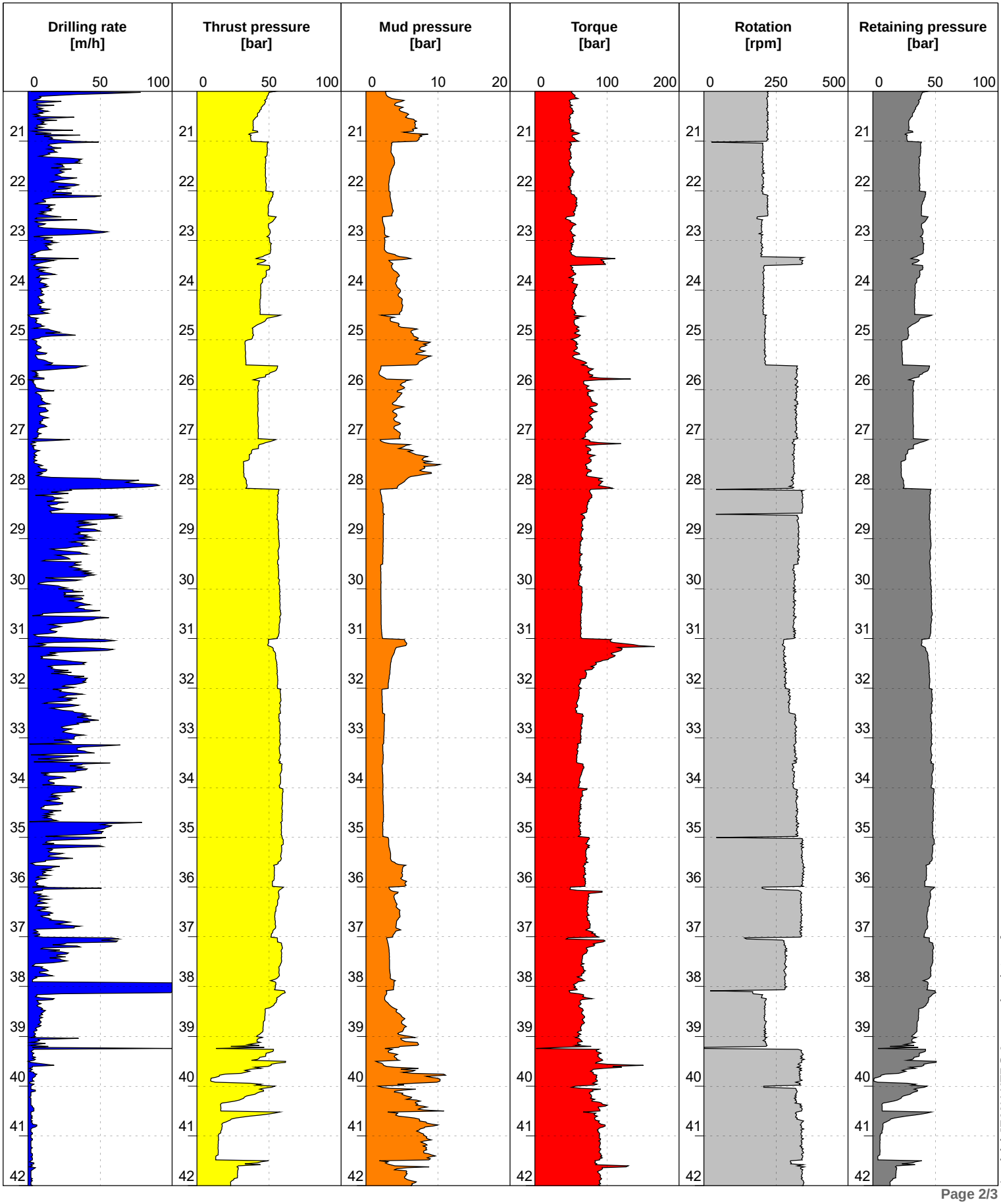
EXEPF 5.34/LB2EPF580EN



Logiciel JEAN LUTZ S.A - www.jeanlutzsa.fr

1/100

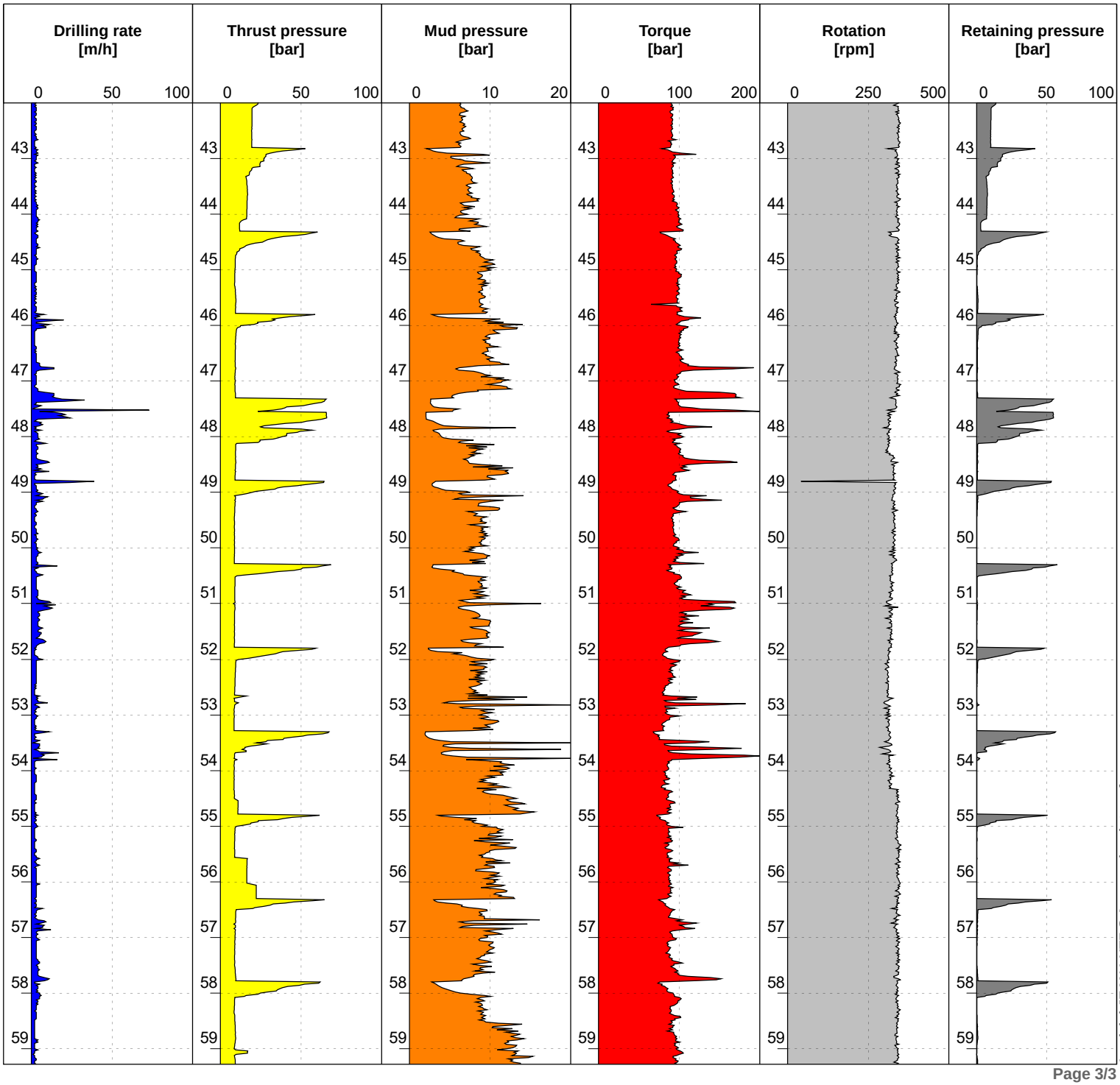
BH26



Logiciel JEAN LUTZ S.A - www.jeanlutzsa.fr

1/100

BH26



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Project No. F186642

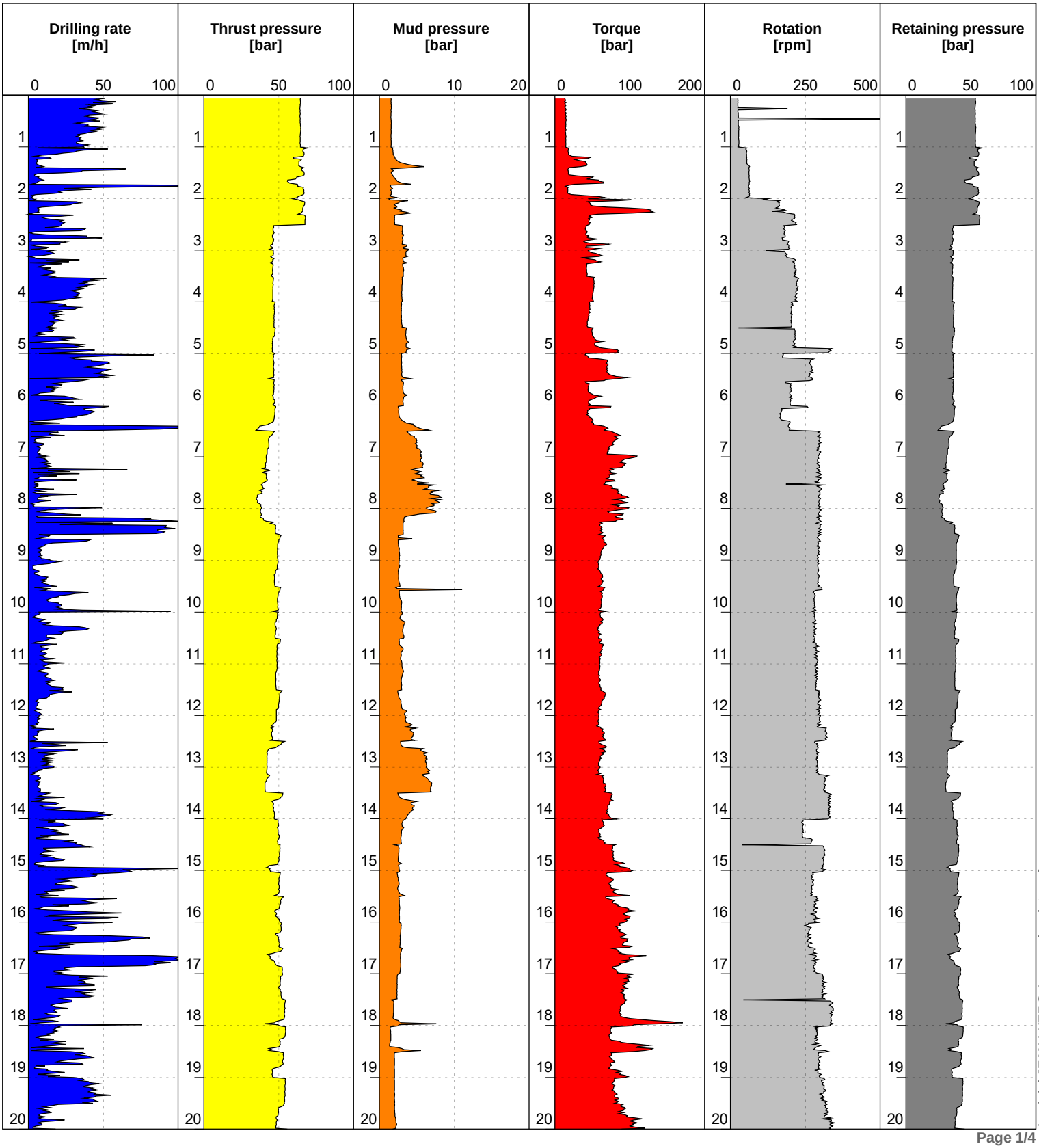
Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Begin date	: Jun 12, 2022	Elevation [m LAT]	: - 28.70	Method	: RORC	Tool	: NCD	Easting [m]	: 302479.91
End date	: Jun 15, 2022	Machine	: Comacchio MC1200	Fluid	: Water/PureBore	Diameter [mm]	: 146	Northing [m]	: 5863159.00
		Angle	: 90	Casing	: Geobor-S			Depth [BSL]	: 0.00 - 69.48 m

1/100

Drill : BH28

EXEPF 5.34/LB2EPF580EN



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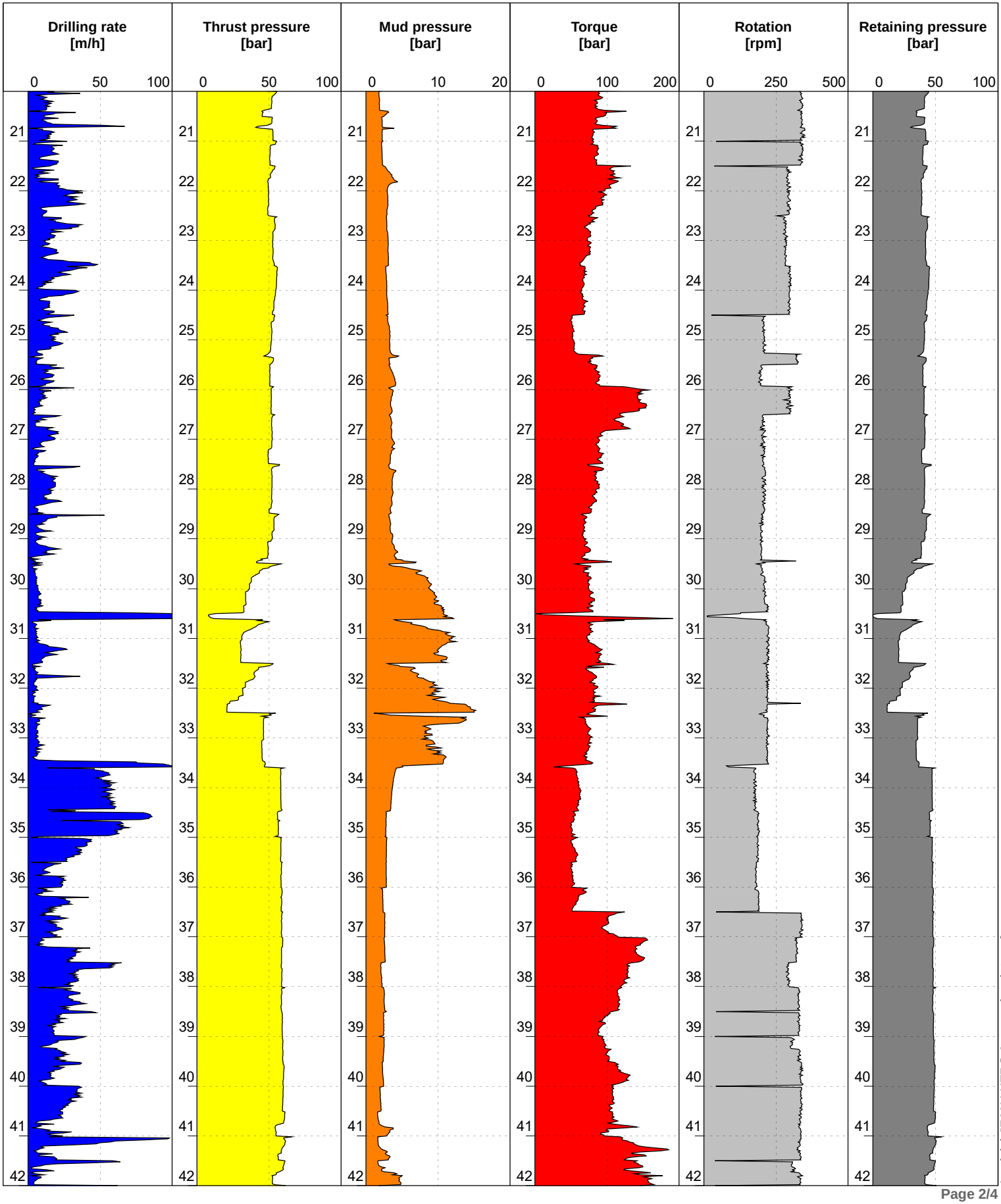
1/100

BH28



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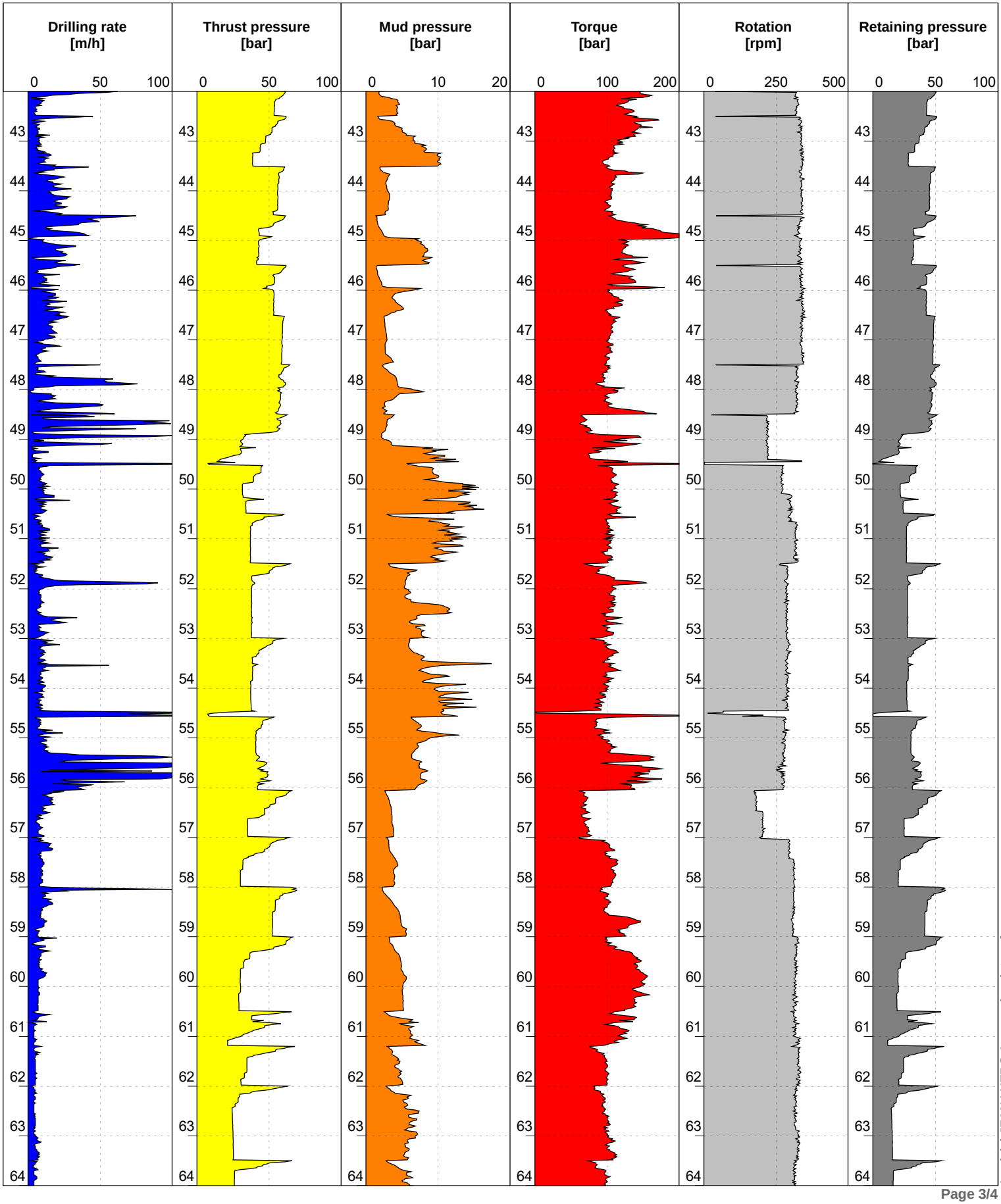
1/100

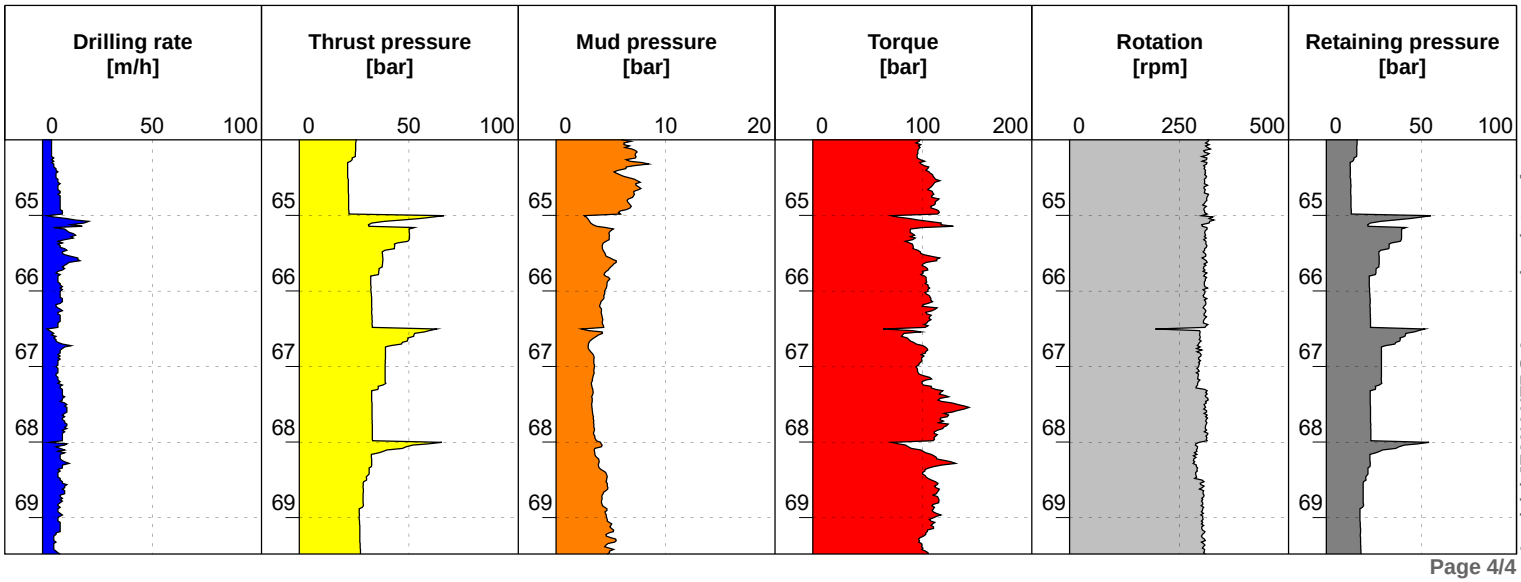
BH28



Logiciel JEAN LUTZ S.A - www.jeanlutzsa.fr

1/100

BH28



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3. In Situ Data

Title	Plate No.
Cone Penetration Testing	
CPT Calibration Certificates – Reference by Cone Serial Number	3.1 to 3.40
Measured and Derived Plots with Zero Load and Application Class – Reference by Location ID	3.41 to 3.125
Geophysical Testing	
Equipment Calibration Certificates	3.126 to 3.141
Results Plots – Referenced by Type	3.141 to 3.277

CALIBRATION CERTIFICATE

Applicant	**Fugro GeoServices Ltd.**
	Fugro House, Hithercroft Road
	OX10 9RB, Wallingford
	United Kingdom

Certificate Number
FCN21024725

Instrument	**Cone Penetrometer**
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658

Calibration method The instrument was calibrated according to Fugro procedures using a comparison technique against a reference standard.

Environmental Conditions	
Temperature during calibration	20.5 ± 3 °C
Atmospheric pressure during calibration	1000 ± 100 mbar

Result The condition of the cone penetrometer meets the requirements of ISO 22476-1:2012 Section 4.1 through 4.7. The calibration results are reported on the next page(s).

The calibration results indicate that the cone penetrometer meets the requirements for use in Application Class 1 as defined in ISO 22476-1:2012 Section 5.2.

Uncertainty The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides a confidence level of approximately 95%. The standard uncertainty has been determined in accordance with EA-4/02.

Traceability Fugro reference standards are periodically recertified and are traceable to the International System of Units (SI). Fugro's calibration system meets or exceeds the requirements of ISO 9001:2008, ISO 10012:2003 and ISO/IEC 17025:2017.

Calibration date 23-dec-2021

Calibrate before 23-dec-2022

Calibrated Sensor	**Manufacturer / Type**	**Calibrated Range**	**Maximum Rating**	**Procedure**
Cone [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Cone+Fric. [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Pore 2 [Pressure]	Keller PA-8/100bar (8467.8)	0 to 10 MPa	0 to 15 MPa	FEBV.CAL.PRO.004
Slope [Inclination]	ADXL	0 to 15 Deg	0 to 20 Deg	FEBV.CAL.PRO.005

	Before adjustment		**After adjustment**		**Drift**	
Calibrated Sensor	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**
Cone [Force]	25.0 µV/V/kN	-2.49 µV/V	25.0 µV/V/kN	0.585 µV/V	0.06 %	0.12 %
Cone+Fric. [Force]	24.9 µV/V/kN	1.23 µV/V	25.0 µV/V/kN	1.44 µV/V	0.07 %	0.01 %
Pore 2 [Pressure]	3.75 mV/V/MPa	-1.87 mV/V	3.75 mV/V/MPa	-1.88 mV/V	0.04 %	-0.02 %

Nootdorp, 24-dec-2021

This certificate is issued provided that Fugro assumes no liability.

Gerry Sinjorgo
Manager Transducer Workshop

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CONE CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

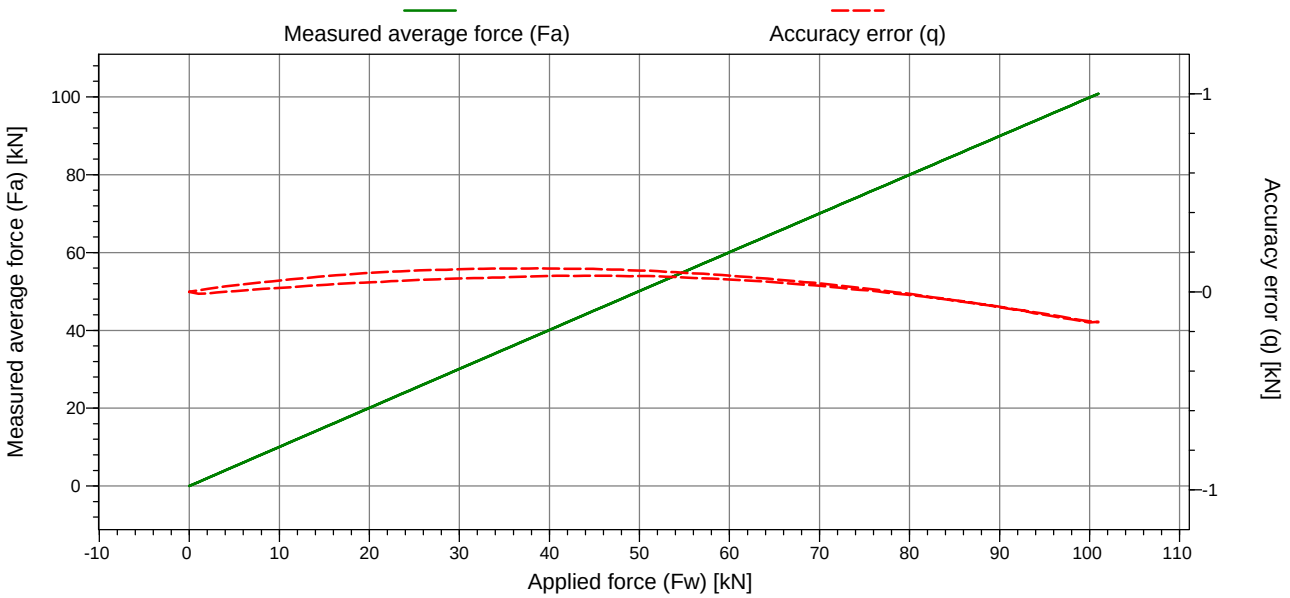
Sensor	
Channel	Cone [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0003
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 07:59:57
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024725

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.155
Max repeatability error (b)	[kN]	0.007
Max reversibility error (v)	[kN]	0.048
Zero load error (Fc0)	[kN]	0.001
Zero load offset (F0)	[kN]	-0.017
Resolution	[kN]	3.73E-05
Noise RMS	[kN]	0.000



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	0.001	-0.001	0.000	0.000	0.000	0.002		0.016
20.000	20.049	20.047	20.047	20.047	0.047	0.002	0.048	0.101
40.000	40.084	40.079	40.079	40.081	0.081	0.005	0.037	0.145
60.000	60.063	60.060	60.063	60.062	0.062	0.003	0.019	0.201
80.000	79.986	79.982	79.983	79.984	-0.016	0.004	0.006	0.262
100.000	99.848	99.844	99.842	99.845	-0.155	0.006		0.323
80.000	79.992	79.991	79.986	79.990	-0.010	0.006	0.006	0.262
60.000	60.086	60.080	60.079	60.082	0.082	0.007	0.019	0.201
40.000	40.121	40.116	40.116	40.118	0.118	0.005	0.037	0.145
20.000	20.098	20.093	20.095	20.095	0.095	0.005	0.048	0.101
0.000	0.002	0.001	0.001	0.001	0.001	0.001		0.016

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CONE+FRIC. CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

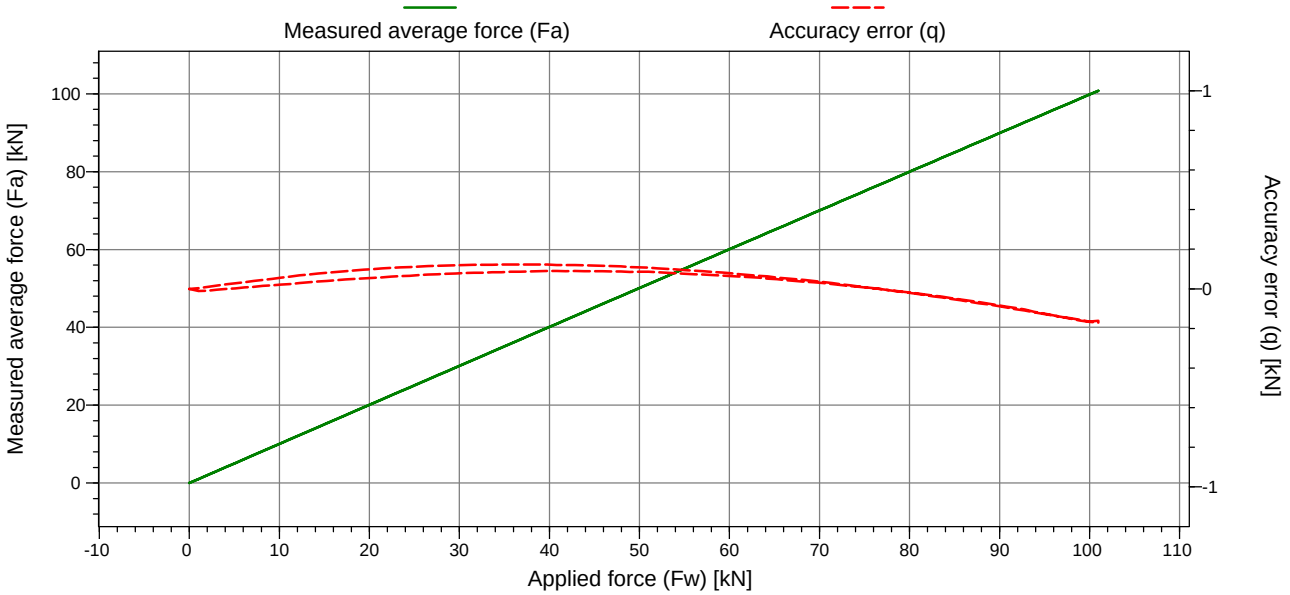
Sensor	
Channel	Cone+Fric. [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0003
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 07:59:57
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024725

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.166
Max repeatability error (b)	[kN]	0.005
Max reversibility error (v)	[kN]	0.045
Zero load error (Fc0)	[kN]	0.001
Zero load offset (F0)	[kN]	-0.014
Resolution	[kN]	3.73E-05
Noise RMS	[kN]	0.001
Tip-Sleeve Interaction %	[%]	0.030



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	0.001	0.000	-0.001	0.000	0.000	0.002		0.016
20.000	20.054	20.054	20.053	20.054	0.054	0.001	0.045	0.098
40.000	40.092	40.091	40.088	40.090	0.090	0.004	0.032	0.143
60.000	60.065	60.065	60.065	60.065	0.065	0.001	0.014	0.201
80.000	79.982	79.981	79.982	79.981	-0.019	0.002	-0.001	0.261
100.000	99.835	99.834	99.833	99.834	-0.166	0.002		0.323
80.000	79.979	79.983	79.979	79.980	-0.020	0.005	-0.001	0.261
60.000	60.080	60.078	60.077	60.079	0.079	0.003	0.014	0.201
40.000	40.122	40.121	40.122	40.122	0.122	0.001	0.032	0.143
20.000	20.100	20.098	20.099	20.099	0.099	0.003	0.045	0.098
0.000	0.000	-0.001	-0.002	-0.001	-0.001	0.002		0.016

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PORE 2 CALIBRATION RESULT [PRESSURE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

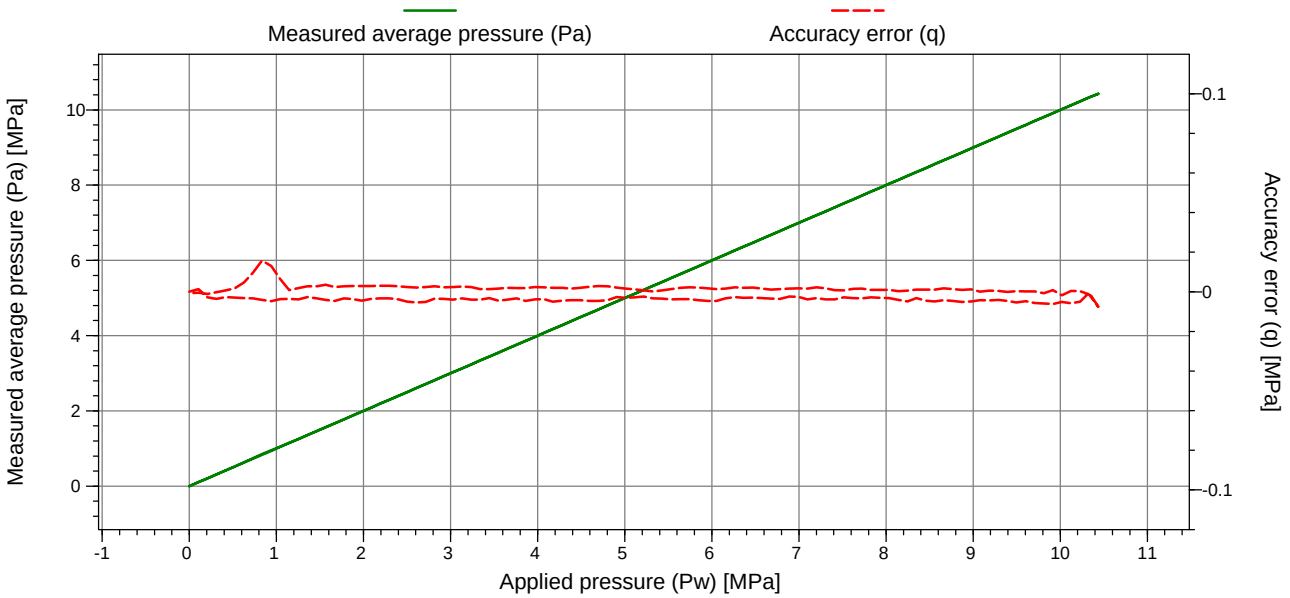
Sensor	
Channel	Pore 2 [Pressure]
Manufacturer / Type	Keller PA-8/100bar (8467.8)
Calibrated Range	0 to 10 MPa
Maximum Rating	0 to 15 MPa

Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Calibration Details	
Calibration Date	23 dec 2021 08:43:47
Procedure	FEBV.CAL.PRO.004
Software Version	3.4.1.50595

Certificate Number
FCN21024725

Characteristics	Unit	Value
Max accuracy error (q)	[MPa]	0.005
Max repeatability error (b)	[MPa]	0.003
Max reversibility error (v)	[MPa]	0.007
Zero load error (Pc0)	[MPa]	0.001
Zero load offset (P0)	[MPa]	0.003
Resolution	[MPa]	1.98E-06
Noise RMS	[MPa]	0.000



Applied pressure (Pw) [MPa]	Measured pressure 1 (Pa,1) [MPa]	Measured pressure 2 (Pa,2) [MPa]	Measured pressure 3 (Pa,3) [MPa]	Measured average pressure (Pa) [MPa]	Accuracy error (q) [MPa]	Repeatability error (b) [MPa]	Reversibility error (v) [MPa]	Expanded Uncertainty (U) [MPa]
0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.003
2.000	1.996	1.995	1.996	1.996	-0.004	0.001	0.007	0.021
4.000	3.995	3.997	3.997	3.997	-0.003	0.002	0.006	0.012
6.000	5.993	5.996	5.997	5.995	-0.005	0.003	0.006	0.012
8.000	7.998	7.997	7.996	7.997	-0.003	0.002	0.004	0.009
10.000	9.996	9.995	9.993	9.995	-0.005	0.003		0.008
8.000	8.001	8.003	8.000	8.001	0.001	0.003	0.004	0.009
6.000	6.002	6.000	6.002	6.001	0.001	0.002	0.006	0.012
4.000	4.001	4.004	4.002	4.002	0.002	0.003	0.006	0.012
2.000	2.003	2.003	2.003	2.003	0.003	0.001	0.007	0.020
0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000		0.003

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SLOPE CALIBRATION RESULT [INCLINATION]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

Sensor	
Channel	Slope [Inclination]
Manufacturer / Type	ADXL
Calibrated Range	0 to 15 Deg
Maximum Rating	0 to 20 Deg

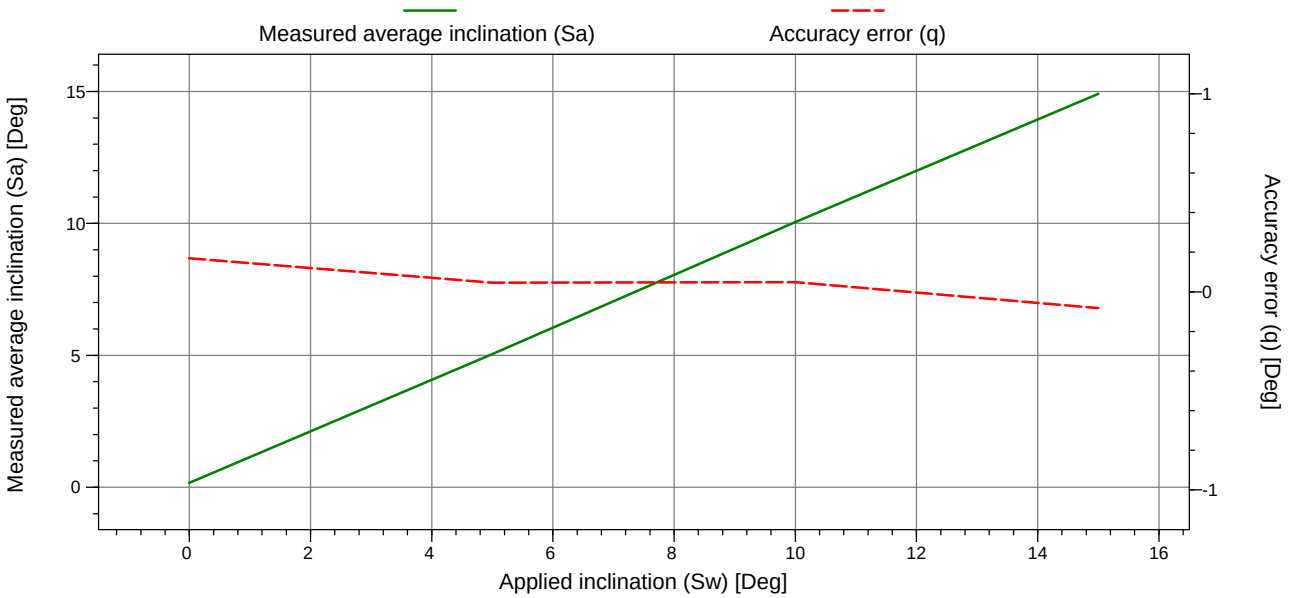
Reference	
Manufacturer	Hoek-O-Mat
Serial Number	2109-0002
Uncertainty	0.6 [Deg]

Calibration Details	
Calibration Date	23 dec 2021 08:04:49
Procedure	FEBV.CAL.PRO.005
Software Version	3.4.1.50595

Certificate Number
FCN21024725

Characteristics	Unit	Value
Max accuracy error (q)	[Deg]	0.2
Max repeatability error (b)	[Deg]	0.1
Zero load error (Sc0)	[Deg]	0.0
Zero load offset (S0)	[Deg]	0.1
Resolution	[Deg]	1.3E-05
Noise RMS	[Deg]	0.0

Inclination is defined as the angular deviation of the cone penetrometer from the vertical.



Applied inclination (Sw) [Deg]	Measured inclination 1 (Sa,1) [Deg]	Measured inclination 2 (Sa,2) [Deg]	Measured inclination 3 (Sa,3) [Deg]	Measured average inclination (Sa) [Deg]	Accuracy error (q) [Deg]	Repeatability error (b) [Deg]	Expanded Uncertainty (U) [Deg]
0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.7
5.0	5.1	5.0	5.0	5.0	0.0	0.0	0.7
10.0	10.0	10.1	10.0	10.0	0.0	0.1	0.7
15.0	14.9	15.0	14.9	14.9	-0.1	0.1	0.7

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Certificate Number
FCN21024725

Symbols and Definitions (general)

b	Repeatability error, defined as the maximum difference between the measurements of the instrument at the applied value.
Noise RMS	Signal noise, defined as the quadratic mean when the sensor is not subjected to load.
q	Accuracy error, defined as the difference between the average indicated value by the instrument and the applied value.
Resolution	Smallest change in a quantity being measured that causes a perceptible change in the corresponding indication.
U	The stated uncertainty is that of the average indicated quantity, and includes the entire calibration method, including the reference and calibrated sensor, but excludes the difference between average indicated value by the instrument and the applied value.
v	Reversibility error, defined as the difference between the average indicated value by the instrument at a certain applied value when it was increased and when it was decreased.

Symbols and Definitions (quantity specific: Q may be substituted for F, P or S, as appropriate)

Q0	Zero load offset, instrument output where the specified measured quantity value is zero.
Qa	Average indicated quantity value by the instrument.
Qa,x	Quantity value indicated by the instrument at measurement x.
Qc0	Zero load error, defined as the difference between the average indicated value by the instrument before and after the load cycle has been applied.
Qw	Applied reference quantity value.

Quantities

F	Force
P	Pressure
S	Inclination

References

International Organization for Standardization, 2012. *ISO 22476-1:2012 Geotechnical investigation and testing, Field testing, Electrical cone and piezocone penetration test.* Geneva: ISO.

European Co-operation For Accreditation, 2013. *Evaluation of the uncertainty of measurement in calibration.* European Co-operation For Accreditation, Publication; EA-4/02 M:2013.

International Organization for Standardization, 2005. *ISO 17025:2005 General requirements for the competence of testing and calibration laboratories.* Geneva: ISO.

International Organization for Standardization, 2003. *ISO 10012:2003 Measurement management systems - requirements for measurement processes and measuring equipment.* Geneva: ISO.

International Organization for Standardization, 2008. *ISO 9001:2008 Quality management systems - Requirements.* Geneva: ISO.

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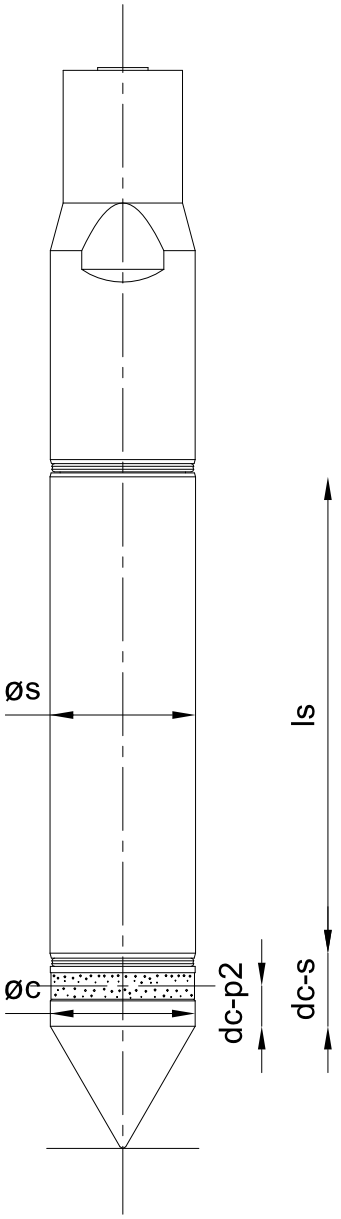
TYPICAL DIMENSIONS

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658

Appendix Applicable to Certificate Number FCN21024725



Typical Dimensions		
Ac	Cross-sectional projected area of the cone	0.001 m²
As	Surface area of the friction sleeve	0.015 m²
af	Cone net area ratio	0.75
scf	Friction sleeve net area ratio	0
øc	Diameter of the cylindrical part of the cone	35.8 mm
øs	Diameter of the friction sleeve	36.1 mm
ls	Length of the friction sleeve	132.7 mm
dc-s	Cone - friction sleeve distance	13.5 mm
dc-p2	Cone - pore 2 distance	5 mm

Diagram is not to scale

CONE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

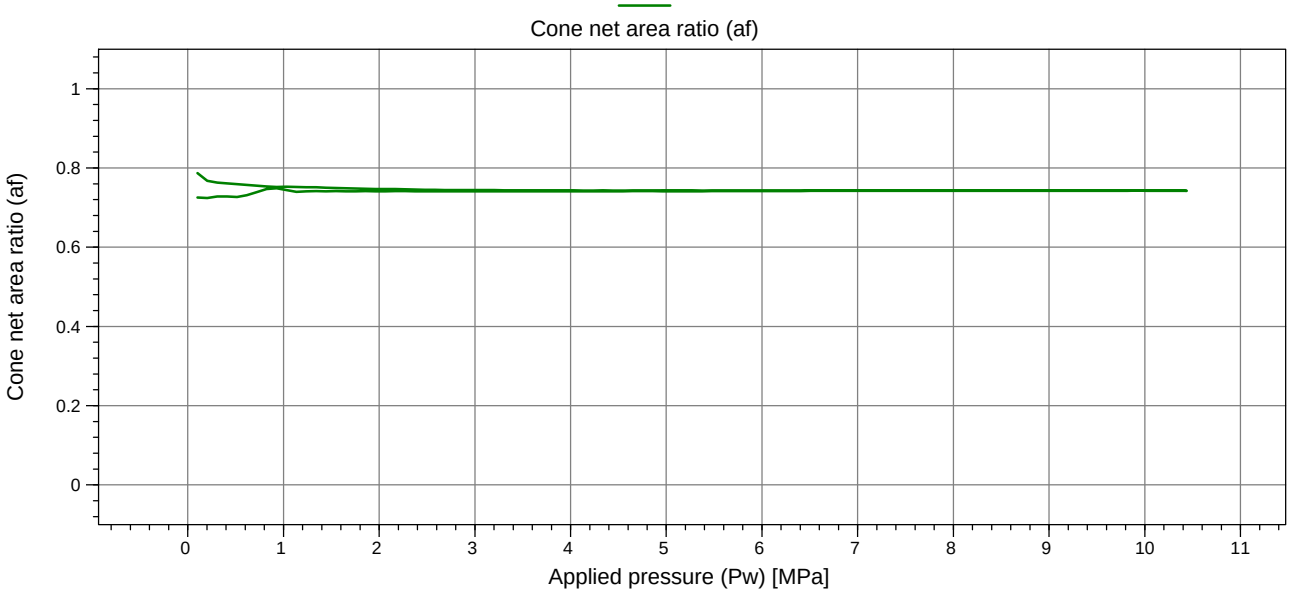
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 08:43:47
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024725

Characteristics	Unit	Value
Cone net area ratio (af)	[-]	0.74

The cone net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured cone net area ratio 1 (af,1)	Measured cone net area ratio 2 (af,2)	Measured cone net area ratio 3 (af,3)	Measured average cone net area ratio (af)
2.000	0.747	0.747	0.747	0.747
4.000	0.743	0.744	0.744	0.743
6.000	0.743	0.743	0.743	0.743
8.000	0.743	0.743	0.743	0.743
10.000	0.744	0.743	0.743	0.743
8.000	0.743	0.742	0.742	0.742
6.000	0.742	0.742	0.742	0.742
4.000	0.741	0.741	0.741	0.741
2.000	0.741	0.741	0.741	0.741

FRICTION SLEEVE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2658
Electronics	8433
Node Type	7001
Hardware Version	5.01
Software Version	7.11

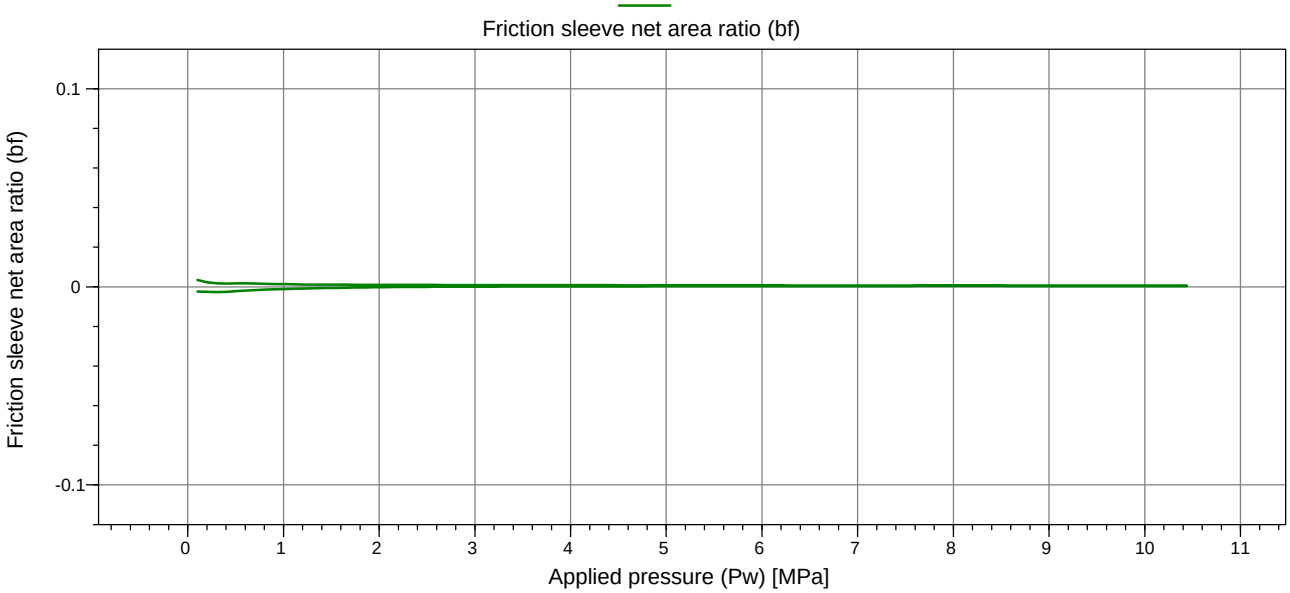
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 08:43:47
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024725

Characteristics	Unit	Value
Friction sleeve net area ratio (bf)	[-]	0.00045

The friction sleeve net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured friction sleeve net area ratio (bf) 1 (bf,1)	Measured friction sleeve net area ratio (bf) 2 (bf,2)	Measured friction sleeve net area ratio (bf) 3 (bf,3)	Measured average Friction sleeve net area ratio (bf)
2.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000
8.000	0.001	0.001	0.001	0.001
6.000	0.001	0.001	0.001	0.001
4.000	0.001	0.001	0.001	0.001
2.000	0.001	0.001	0.001	0.001

Appendix Applicable to Certificate Number FCN21024725

Symbols and Definitions (general)

af	Cone net area ratio, defined as the factor between the applied pressure to the instrument and the indicated cone resistance.
af,x	Measured cone net area ratio at measurement x.
bf	Friction sleeve net area ratio, defined as the factor between the applied pressure to the instrument and the indicated sleeve friction.
bf,x	The measured friction sleeve net area ratio at measurement x.

Symbols and Definitions (quantity specific: Q may be substituted for P, as appropriate)

Qw	Applied reference quantity value.

Quantities

P	Pressure

CALIBRATION CERTIFICATE

Applicant	**Fugro GeoServices Ltd.**
	Fugro House, Hithercroft Road
	OX10 9RB, Wallingford
	United Kingdom

Certificate Number
FCN21024728

Instrument	**Cone Penetrometer**
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659

Calibration method The instrument was calibrated according to Fugro procedures using a comparison technique against a reference standard.

Environmental Conditions	
Temperature during calibration	20.5 ± 3 °C
Atmospheric pressure during calibration	1000 ± 100 mbar

Result The condition of the cone penetrometer meets the requirements of ISO 22476-1:2012 Section 4.1 through 4.7. The calibration results are reported on the next page(s).

The calibration results indicate that the cone penetrometer meets the requirements for use in Application Class 1 as defined in ISO 22476-1:2012 Section 5.2.

Uncertainty The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides a confidence level of approximately 95%. The standard uncertainty has been determined in accordance with EA-4/02.

Traceability Fugro reference standards are periodically recertified and are traceable to the International System of Units (SI). Fugro's calibration system meets or exceeds the requirements of ISO 9001:2008, ISO 10012:2003 and ISO/IEC 17025:2017.

Calibration date 23-dec-2021

Calibrate before 23-dec-2022

Calibrated Sensor	**Manufacturer / Type**	**Calibrated Range**	**Maximum Rating**	**Procedure**
Cone [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Cone+Fric. [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Pore 2 [Pressure]	Keller PA-8/100bar (8467.8)	0 to 10 MPa	0 to 15 MPa	FEBV.CAL.PRO.004
Slope [Inclination]	ADXL	0 to 15 Deg	0 to 20 Deg	FEBV.CAL.PRO.005

	Before adjustment		**After adjustment**		**Drift**	
Calibrated Sensor	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**
Cone [Force]	25.1 µV/V/kN	3.16 µV/V	25.1 µV/V/kN	8.06 µV/V	0.08 %	0.20 %
Cone+Fric. [Force]	25.0 µV/V/kN	3.22 µV/V	25.0 µV/V/kN	9.01 µV/V	0.12 %	0.23 %
Pore 2 [Pressure]	1.53 mV/V/MPa	185 µV/V	1.53 mV/V/MPa	168 µV/V	0.00 %	-0.11 %

Nootdorp, 24-dec-2021

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Gerry Sinjorgo
Manager Transducer Workshop

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CONE CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

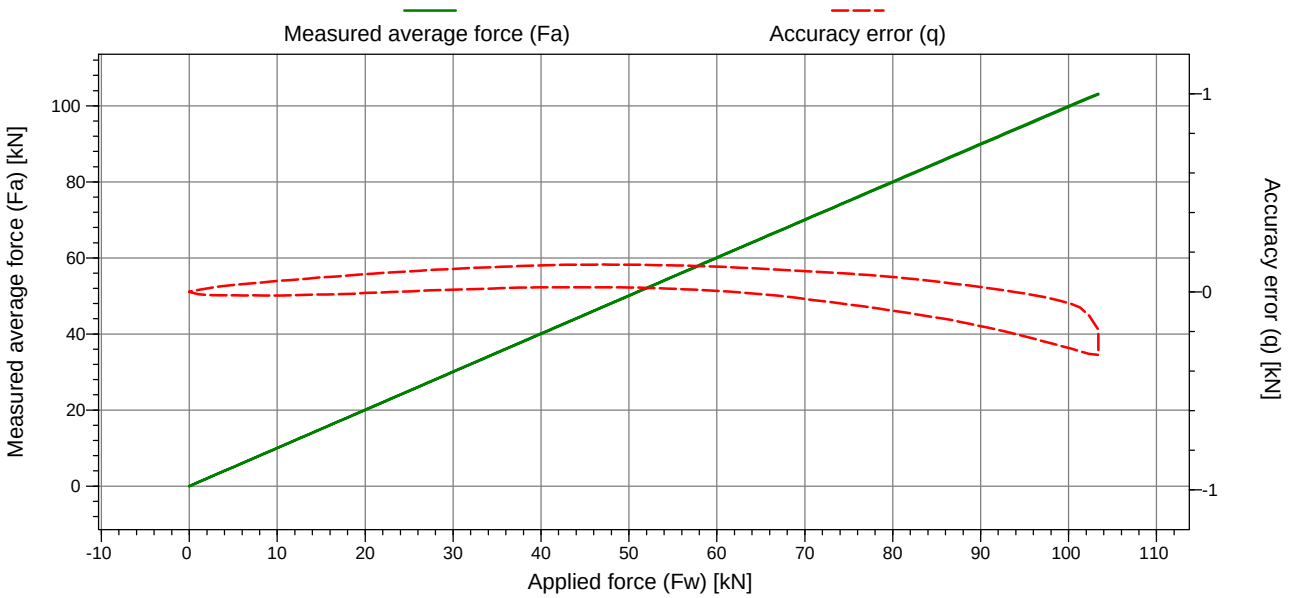
Sensor	
Channel	Cone [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0002
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 08:47:23
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024728

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.284
Max repeatability error (b)	[kN]	0.012
Max reversibility error (v)	[kN]	0.170
Zero load error (Fc0)	[kN]	0.001
Zero load offset (F0)	[kN]	-0.015
Resolution	[kN]	3.7E-05
Noise RMS	[kN]	0.000



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	-0.002	0.001	0.001	0.000	0.000	0.003		0.016
20.000	19.995	19.994	19.994	19.994	-0.006	0.001	0.095	0.190
40.000	40.023	40.022	40.021	40.022	0.022	0.002	0.111	0.221
60.000	60.003	60.007	60.003	60.005	0.005	0.004	0.123	0.262
80.000	79.900	79.903	79.909	79.904	-0.096	0.009	0.170	0.354
100.000	99.711	99.716	99.723	99.716	-0.284	0.012		0.323
80.000	80.079	80.074	80.070	80.074	0.074	0.010	0.170	0.354
60.000	60.130	60.126	60.126	60.127	0.127	0.004	0.123	0.262
40.000	40.136	40.133	40.131	40.134	0.134	0.005	0.111	0.221
20.000	20.091	20.088	20.087	20.089	0.089	0.004	0.095	0.190
0.000	0.001	0.000	0.002	0.001	0.001	0.001		0.016

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CONE+FRIC. CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

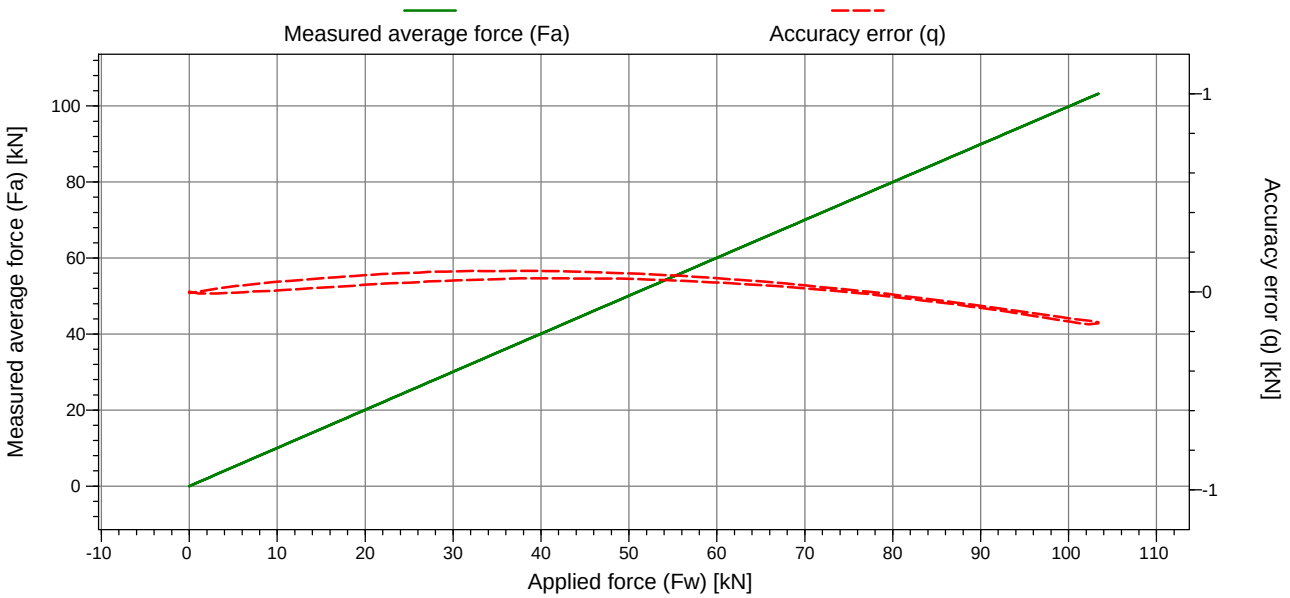
Sensor	
Channel	Cone+Fric. [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0002
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 08:47:23
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024728

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.150
Max repeatability error (b)	[kN]	0.005
Max reversibility error (v)	[kN]	0.048
Zero load error (Fc0)	[kN]	0.005
Zero load offset (F0)	[kN]	-0.009
Resolution	[kN]	3.72E-05
Noise RMS	[kN]	0.001
Tip-Sleeve Interaction %	[%]	0.055



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	0.000	0.000	0.000	0.000	0.000	0.001		0.017
20.000	20.037	20.036	20.034	20.036	0.036	0.003	0.048	0.102
40.000	40.069	40.068	40.067	40.068	0.068	0.002	0.037	0.145
60.000	60.047	60.049	60.044	60.047	0.047	0.005	0.022	0.202
80.000	79.973	79.973	79.975	79.974	-0.026	0.002	0.012	0.262
100.000	99.850	99.849	99.851	99.850	-0.150	0.002		0.323
80.000	79.985	79.987	79.987	79.986	-0.014	0.002	0.012	0.262
60.000	60.069	60.067	60.069	60.069	0.069	0.002	0.022	0.202
40.000	40.107	40.105	40.105	40.106	0.106	0.002	0.037	0.145
20.000	20.086	20.084	20.081	20.084	0.084	0.005	0.048	0.102
0.000	-0.004	-0.006	-0.006	-0.005	-0.005	0.002		0.017

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PORE 2 CALIBRATION RESULT [PRESSURE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

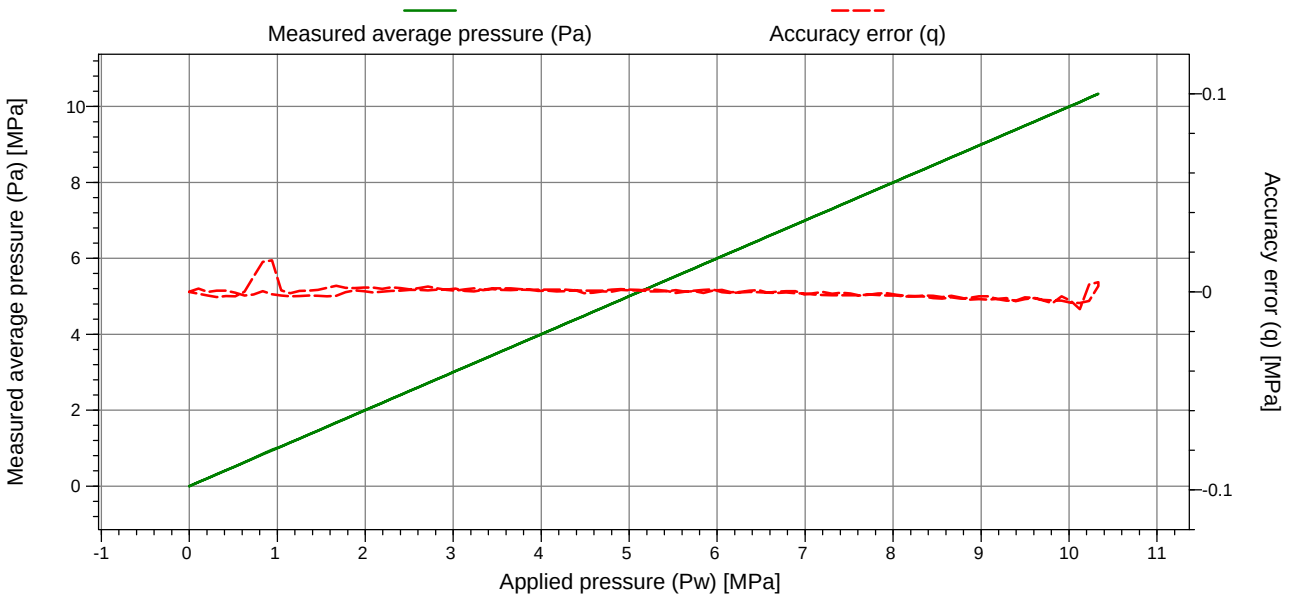
Sensor	
Channel	Pore 2 [Pressure]
Manufacturer / Type	Keller PA-8/100bar (8467.8)
Calibrated Range	0 to 10 MPa
Maximum Rating	0 to 15 MPa

Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Calibration Details	
Calibration Date	23 dec 2021 09:22:16
Procedure	FEBV.CAL.PRO.004
Software Version	3.4.1.50595

Certificate Number
FCN21024728

Characteristics	Unit	Value
Max accuracy error (q)	[MPa]	0.005
Max repeatability error (b)	[MPa]	0.003
Max reversibility error (v)	[MPa]	0.002
Zero load error (Pc0)	[MPa]	0.000
Zero load offset (P0)	[MPa]	-0.001
Resolution	[MPa]	4.88E-06
Noise RMS	[MPa]	0.000



Applied pressure (Pw) [MPa]	Measured pressure 1 (Pa,1) [MPa]	Measured pressure 2 (Pa,2) [MPa]	Measured pressure 3 (Pa,3) [MPa]	Measured average pressure (Pa) [MPa]	Accuracy error (q) [MPa]	Repeatability error (b) [MPa]	Reversibility error (v) [MPa]	Expanded Uncertainty (U) [MPa]
0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.002
2.000	2.001	1.999	2.000	2.000	0.000	0.003	0.002	0.006
4.000	4.001	3.999	4.002	4.001	0.001	0.003	0.001	0.006
6.000	6.002	6.003	5.999	6.001	0.001	0.003	-0.001	0.007
8.000	7.998	7.999	8.000	7.999	-0.001	0.001	-0.001	0.007
10.000	9.993	9.997	9.994	9.995	-0.005	0.003		0.008
8.000	7.999	7.998	7.998	7.998	-0.002	0.001	-0.001	0.006
6.000	6.000	6.001	6.001	6.001	0.001	0.001	-0.001	0.006
4.000	4.002	4.002	4.000	4.001	0.001	0.002	0.001	0.005
2.000	2.002	2.003	2.002	2.002	0.002	0.001	0.002	0.005
0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.003

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SLOPE CALIBRATION RESULT [INCLINATION]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

Sensor	
Channel	Slope [Inclination]
Manufacturer / Type	ADXL
Calibrated Range	0 to 15 Deg
Maximum Rating	0 to 20 Deg

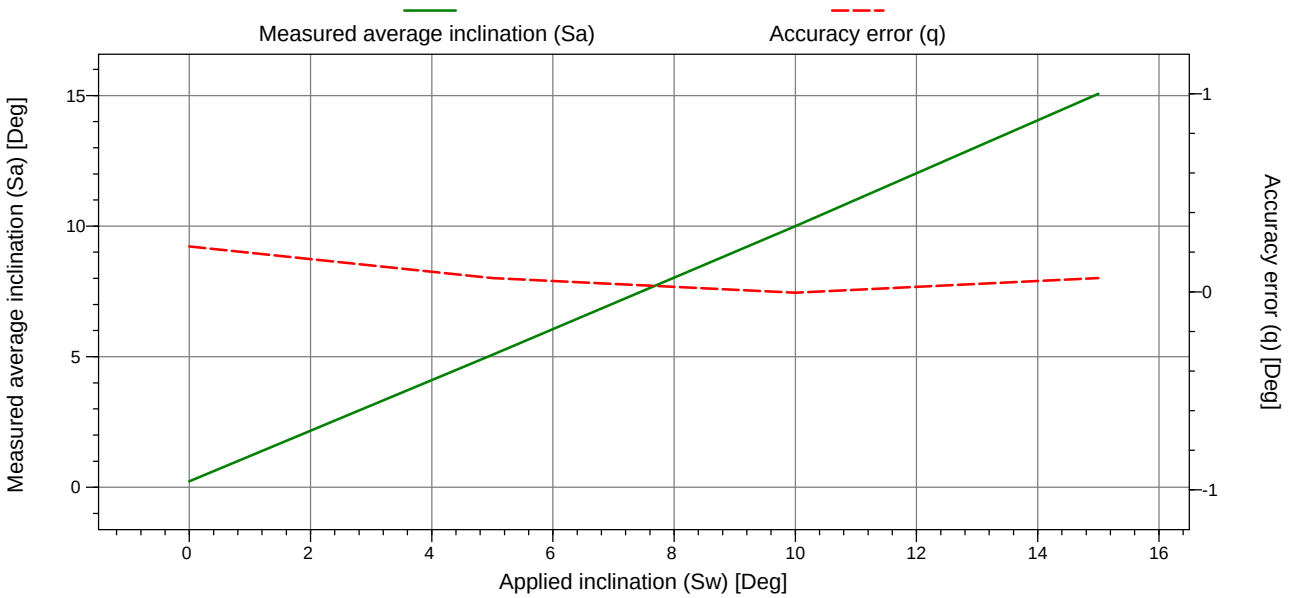
Reference	
Manufacturer	Hoek-O-Mat
Serial Number	2109-0001
Uncertainty	0.6 [Deg]

Calibration Details	
Calibration Date	23 dec 2021 10:07:47
Procedure	FEBV.CAL.PRO.005
Software Version	3.4.1.50595

Certificate Number
FCN21024728

Characteristics	Unit	Value
Max accuracy error (q)	[Deg]	0.2
Max repeatability error (b)	[Deg]	0.2
Zero load error (Sc0)	[Deg]	0.0
Zero load offset (S0)	[Deg]	0.2
Resolution	[Deg]	1.29E-05
Noise RMS	[Deg]	0.0

Inclination is defined as the angular deviation of the cone penetrometer from the vertical.



Applied inclination (Sw) [Deg]	Measured inclination 1 (Sa,1) [Deg]	Measured inclination 2 (Sa,2) [Deg]	Measured inclination 3 (Sa,3) [Deg]	Measured average inclination (Sa) [Deg]	Accuracy error (q) [Deg]	Repeatability error (b) [Deg]	Expanded Uncertainty (U) [Deg]
0.0	0.2	0.3	0.2	0.2	0.2	0.0	0.7
5.0	5.1	5.0	5.1	5.1	0.1	0.1	0.7
10.0	10.1	9.9	10.0	10.0	0.0	0.1	0.7
15.0	15.2	15.0	15.0	15.1	0.1	0.2	0.7

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Certificate Number
FCN21024728

Symbols and Definitions (general)

b	Repeatability error, defined as the maximum difference between the measurements of the instrument at the applied value.
Noise RMS	Signal noise, defined as the quadratic mean when the sensor is not subjected to load.
q	Accuracy error, defined as the difference between the average indicated value by the instrument and the applied value.
Resolution	Smallest change in a quantity being measured that causes a perceptible change in the corresponding indication.
U	The stated uncertainty is that of the average indicated quantity, and includes the entire calibration method, including the reference and calibrated sensor, but excludes the difference between average indicated value by the instrument and the applied value.
v	Reversibility error, defined as the difference between the average indicated value by the instrument at a certain applied value when it was increased and when it was decreased.

Symbols and Definitions (quantity specific: Q may be substituted for F, P or S, as appropriate)

Q0	Zero load offset, instrument output where the specified measured quantity value is zero.
Qa	Average indicated quantity value by the instrument.
Qa,x	Quantity value indicated by the instrument at measurement x.
Qc0	Zero load error, defined as the difference between the average indicated value by the instrument before and after the load cycle has been applied.
Qw	Applied reference quantity value.

Quantities

F	Force
P	Pressure
S	Inclination

References

International Organization for Standardization, 2012. *ISO 22476-1:2012 Geotechnical investigation and testing, Field testing, Electrical cone and piezocone penetration test.* Geneva: ISO.

European Co-operation For Accreditation, 2013. *Evaluation of the uncertainty of measurement in calibration.* European Co-operation For Accreditation, Publication; EA-4/02 M:2013.

International Organization for Standardization, 2005. *ISO 17025:2005 General requirements for the competence of testing and calibration laboratories.* Geneva: ISO.

International Organization for Standardization, 2003. *ISO 10012:2003 Measurement management systems - requirements for measurement processes and measuring equipment.* Geneva: ISO.

International Organization for Standardization, 2008. *ISO 9001:2008 Quality management systems - Requirements.* Geneva: ISO.

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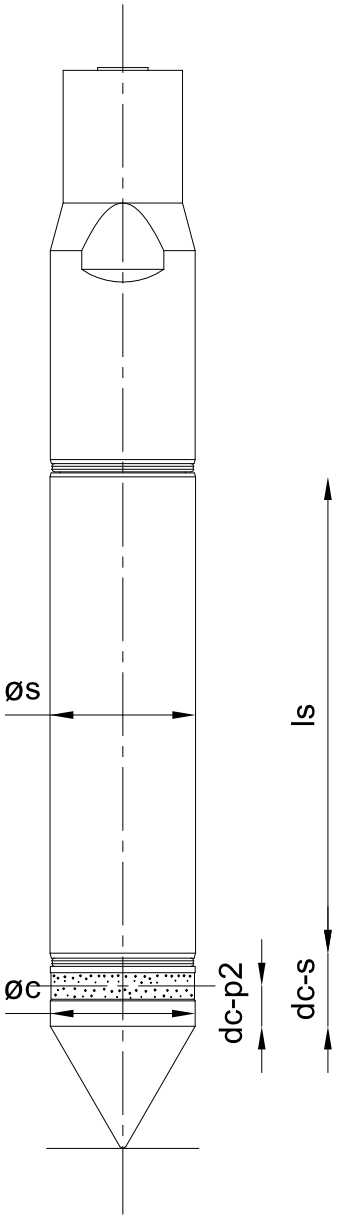
Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659

Appendix Applicable to Certificate Number FCN21024728



Typical Dimensions		
Ac	Cross-sectional projected area of the cone	0.001 m²
As	Surface area of the friction sleeve	0.015 m²
af	Cone net area ratio	0.75
scf	Friction sleeve net area ratio	0
øc	Diameter of the cylindrical part of the cone	35.8 mm
øs	Diameter of the friction sleeve	36.1 mm
ls	Length of the friction sleeve	132.7 mm
dc-s	Cone - friction sleeve distance	13.5 mm
dc-p2	Cone - pore 2 distance	5 mm

Diagram is not to scale

CONE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

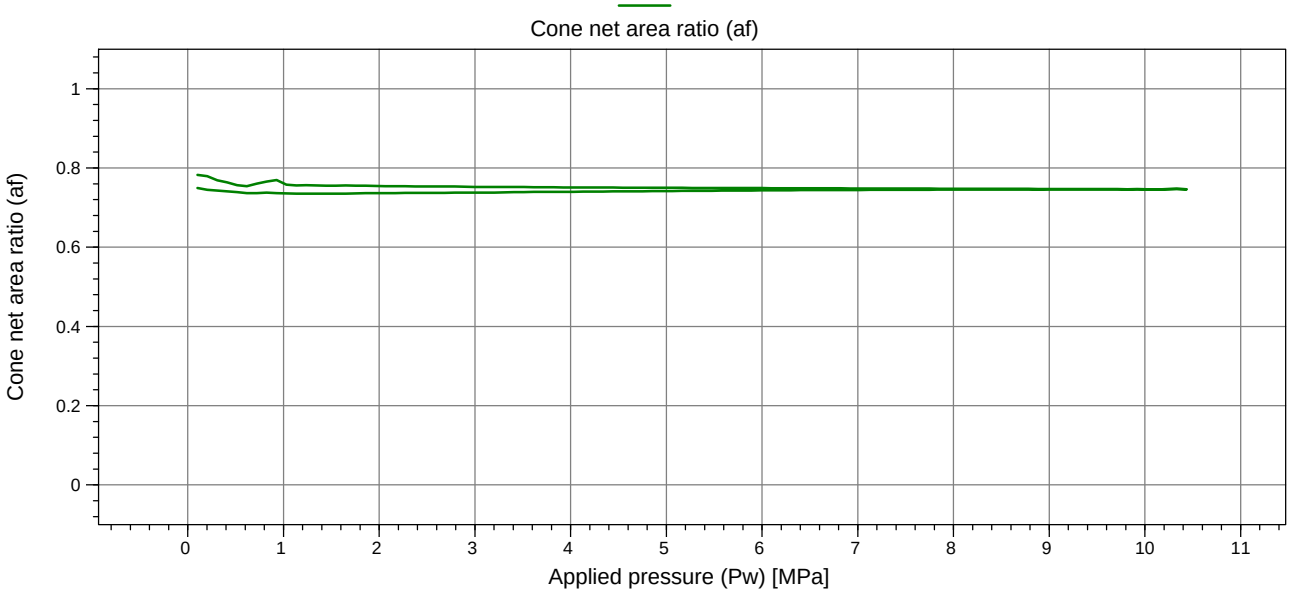
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 09:22:16
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024728

Characteristics	Unit	Value
Cone net area ratio (af)	[-]	0.75

The cone net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured cone net area ratio 1 (af,1)	Measured cone net area ratio 2 (af,2)	Measured cone net area ratio 3 (af,3)	Measured average cone net area ratio (af)
2.000	0.737	0.736	0.736	0.736
4.000	0.740	0.740	0.740	0.740
6.000	0.744	0.744	0.743	0.743
8.000	0.745	0.745	0.745	0.745
10.000	0.746	0.746	0.746	0.746
8.000	0.748	0.748	0.748	0.748
6.000	0.749	0.749	0.749	0.749
4.000	0.751	0.751	0.751	0.751
2.000	0.754	0.755	0.754	0.755

FRICTION SLEEVE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2659
Electronics	8412
Node Type	7001
Hardware Version	5.01
Software Version	7.11

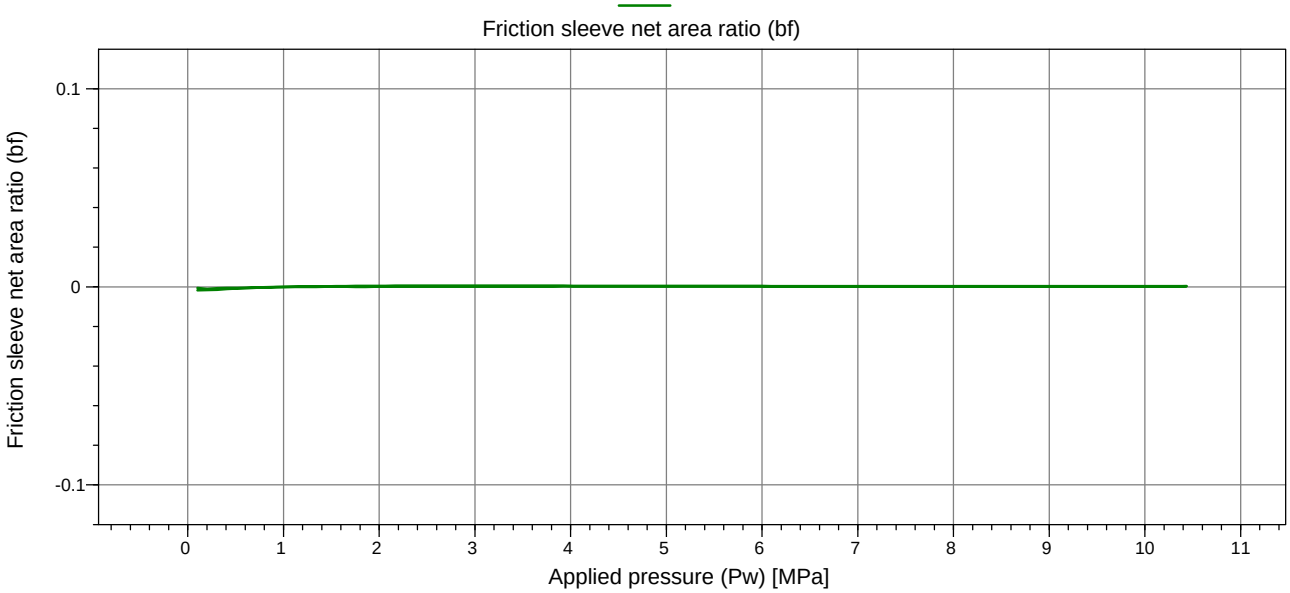
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 09:22:16
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024728

Characteristics	Unit	Value
Friction sleeve net area ratio (bf)	[-]	0.00026

The friction sleeve net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured friction sleeve net area ratio (bf) 1 (bf,1)	Measured friction sleeve net area ratio (bf) 2 (bf,2)	Measured friction sleeve net area ratio (bf) 3 (bf,3)	Measured average Friction sleeve net area ratio (bf)
2.000	0.001	0.000	0.001	0.000
4.000	0.001	0.001	0.001	0.001
6.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000

Appendix Applicable to Certificate Number FCN21024728

Symbols and Definitions (general)

af	Cone net area ratio, defined as the factor between the applied pressure to the instrument and the indicated cone resistance.
af,x	Measured cone net area ratio at measurement x.
bf	Friction sleeve net area ratio, defined as the factor between the applied pressure to the instrument and the indicated sleeve friction.
bf,x	The measured friction sleeve net area ratio at measurement x.

Symbols and Definitions (quantity specific: Q may be substituted for P, as appropriate)

Qw	Applied reference quantity value.

Quantities

P	Pressure

CALIBRATION CERTIFICATE

Applicant	**Fugro GeoServices Ltd.**
	Fugro House, Hithercroft Road
	OX10 9RB, Wallingford
	United Kingdom

Certificate Number
FCN21024724

Instrument	**Cone Penetrometer**
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662

Calibration method The instrument was calibrated according to Fugro procedures using a comparison technique against a reference standard.

Environmental Conditions	
Temperature during calibration	20.5 ± 3 °C
Atmospheric pressure during calibration	1000 ± 100 mbar

Result The condition of the cone penetrometer meets the requirements of ISO 22476-1:2012 Section 4.1 through 4.7. The calibration results are reported on the next page(s).

The calibration results indicate that the cone penetrometer meets the requirements for use in Application Class 1 as defined in ISO 22476-1:2012 Section 5.2.

Uncertainty The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides a confidence level of approximately 95%. The standard uncertainty has been determined in accordance with EA-4/02.

Traceability Fugro reference standards are periodically recertified and are traceable to the International System of Units (SI). Fugro's calibration system meets or exceeds the requirements of ISO 9001:2008, ISO 10012:2003 and ISO/IEC 17025:2017.

Calibration date 23-dec-2021

Calibrate before 23-dec-2022

Calibrated Sensor	**Manufacturer / Type**	**Calibrated Range**	**Maximum Rating**	**Procedure**
Cone [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Cone+Fric. [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Pore 2 [Pressure]	Keller PA-8/100bar (8467.8)	0 to 10 MPa	0 to 15 MPa	FEBV.CAL.PRO.004
Slope [Inclination]	ADXL	0 to 15 Deg	0 to 20 Deg	FEBV.CAL.PRO.005

	Before adjustment		**After adjustment**		**Drift**	
Calibrated Sensor	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**
Cone [Force]	25.0 µV/V/kN	3.44 µV/V	25.1 µV/V/kN	6.49 µV/V	0.22 %	0.12 %
Cone+Fric. [Force]	24.9 µV/V/kN	2.47 µV/V	25.0 µV/V/kN	6.77 µV/V	0.29 %	0.17 %
Pore 2 [Pressure]	3.28 mV/V/MPa	892 µV/V	3.28 mV/V/MPa	882 µV/V	-0.01 %	-0.03 %

Nootdorp, 24-dec-2021

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Gerry Sinjorgo
Manager Transducer Workshop

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CONE CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

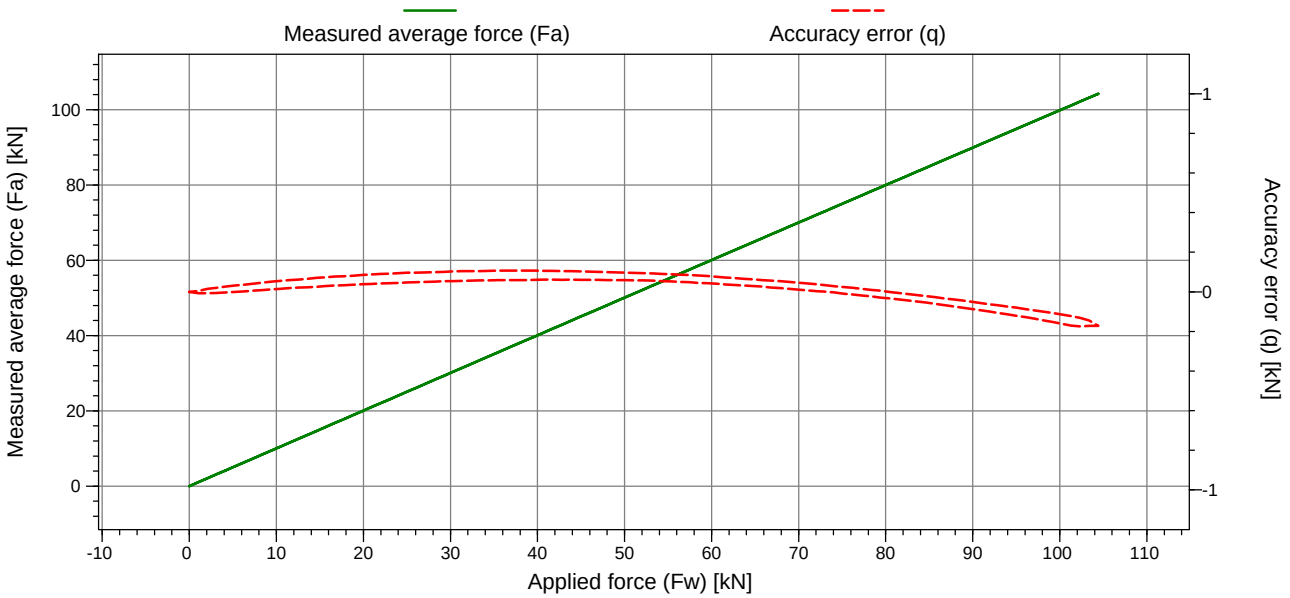
Sensor	
Channel	Cone [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0002
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 07:54:46
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024724

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.159
Max repeatability error (b)	[kN]	0.004
Max reversibility error (v)	[kN]	0.046
Zero load error (Fc0)	[kN]	0.001
Zero load offset (F0)	[kN]	-0.003
Resolution	[kN]	3.71E-05
Noise RMS	[kN]	0.000



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	-0.001	0.001	0.000	0.000	0.000	0.002		0.016
20.000	20.038	20.040	20.039	20.039	0.039	0.002	0.046	0.100
40.000	40.061	40.061	40.060	40.061	0.061	0.000	0.046	0.149
60.000	60.043	60.041	60.041	60.042	0.042	0.002	0.036	0.204
80.000	79.970	79.967	79.969	79.969	-0.031	0.003	0.034	0.264
100.000	99.840	99.841	99.842	99.841	-0.159	0.002		0.323
80.000	80.002	80.004	80.000	80.002	0.002	0.004	0.034	0.264
60.000	60.078	60.079	60.076	60.078	0.078	0.003	0.036	0.204
40.000	40.108	40.106	40.105	40.106	0.106	0.003	0.046	0.149
20.000	20.087	20.086	20.083	20.085	0.085	0.004	0.046	0.100
0.000	0.001	-0.001	-0.003	-0.001	-0.001	0.003		0.016

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CONE+FRIC. CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

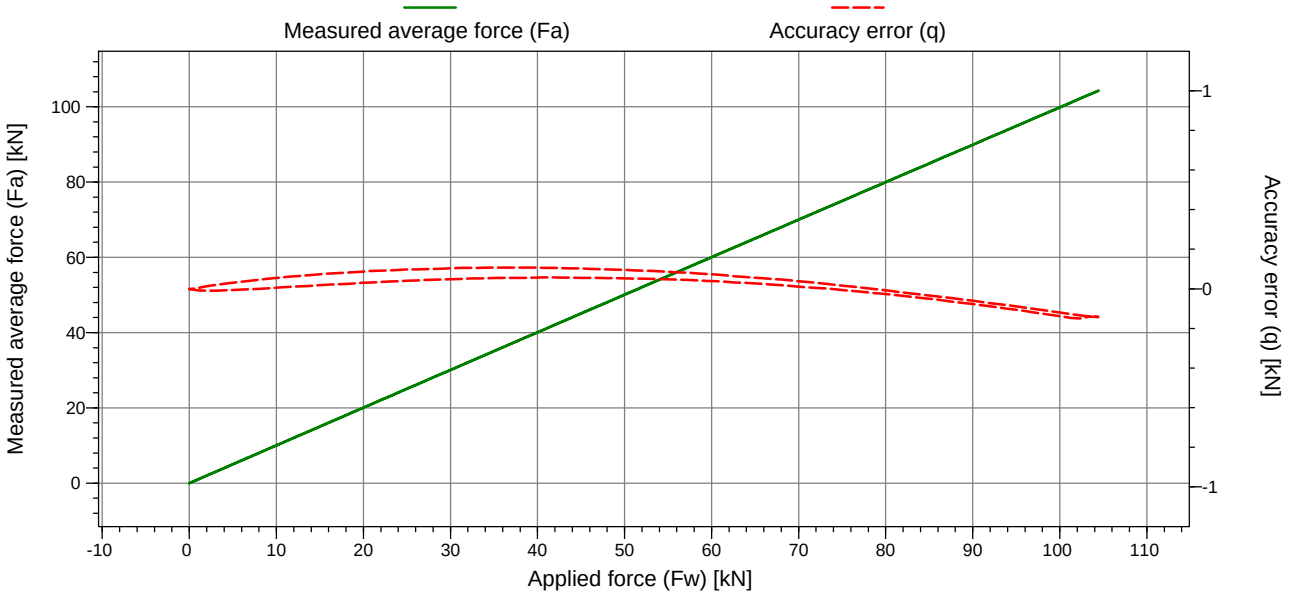
Sensor	
Channel	Cone+Fric. [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0002
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 07:54:46
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024724

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.138
Max repeatability error (b)	[kN]	0.006
Max reversibility error (v)	[kN]	0.057
Zero load error (Fc0)	[kN]	0.002
Zero load offset (F0)	[kN]	-0.006
Resolution	[kN]	3.72E-05
Noise RMS	[kN]	0.000
Tip-Sleeve Interaction %	[%]	0.013



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	-0.001	0.002	0.000	0.000	0.000	0.003		0.016
20.000	20.031	20.032	20.030	20.031	0.031	0.002	0.057	0.113
40.000	40.059	40.057	40.055	40.057	0.057	0.004	0.050	0.151
60.000	60.042	60.038	60.036	60.039	0.039	0.006	0.034	0.204
80.000	79.977	79.972	79.971	79.973	-0.027	0.005	0.020	0.262
100.000	99.864	99.862	99.860	99.862	-0.138	0.004		0.323
80.000	79.995	79.994	79.989	79.993	-0.007	0.006	0.020	0.263
60.000	60.075	60.075	60.071	60.073	0.073	0.004	0.034	0.204
40.000	40.109	40.107	40.104	40.107	0.107	0.005	0.050	0.151
20.000	20.090	20.088	20.084	20.087	0.087	0.005	0.057	0.114
0.000	0.000	-0.002	-0.004	-0.002	-0.002	0.004		0.016

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PORE 2 CALIBRATION RESULT [PRESSURE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

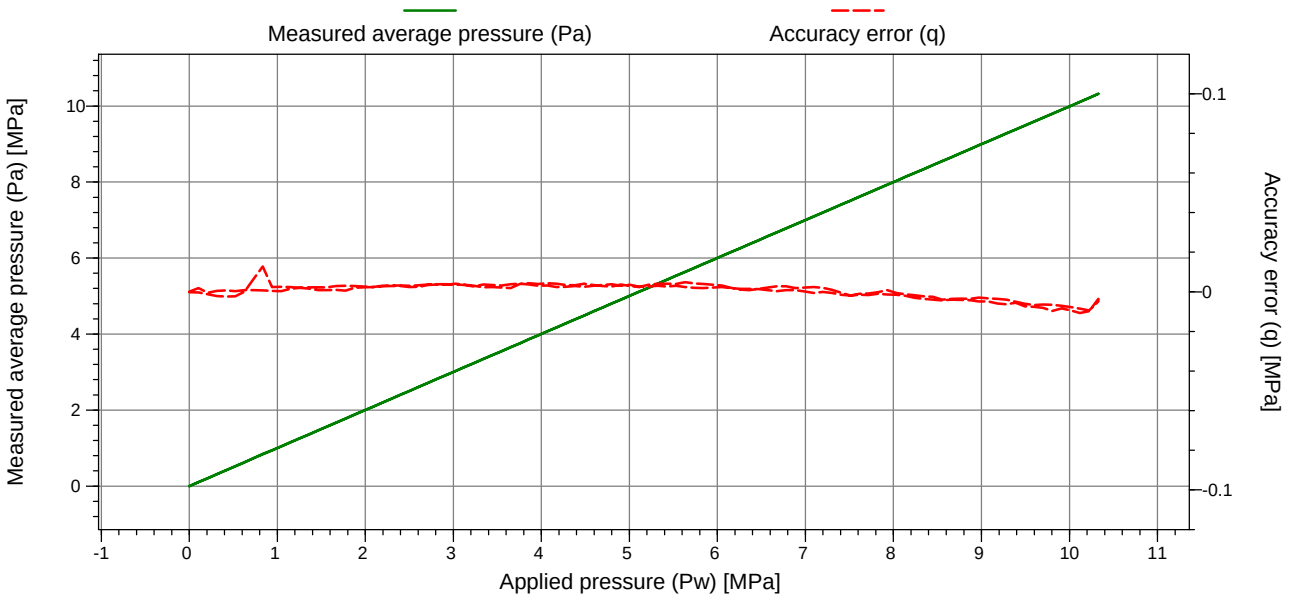
Sensor	
Channel	Pore 2 [Pressure]
Manufacturer / Type	Keller PA-8/100bar (8467.8)
Calibrated Range	0 to 10 MPa
Maximum Rating	0 to 15 MPa

Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Calibration Details	
Calibration Date	23 dec 2021 08:25:32
Procedure	FEBV.CAL.PRO.004
Software Version	3.4.1.50595

Certificate Number
FCN21024724

Characteristics	Unit	Value
Max accuracy error (q)	[MPa]	0.008
Max repeatability error (b)	[MPa]	0.003
Max reversibility error (v)	[MPa]	0.002
Zero load error (Pc0)	[MPa]	0.000
Zero load offset (P0)	[MPa]	-0.001
Resolution	[MPa]	2.27E-06
Noise RMS	[MPa]	0.000



Applied pressure (Pw) [MPa]	Measured pressure 1 (Pa,1) [MPa]	Measured pressure 2 (Pa,2) [MPa]	Measured pressure 3 (Pa,3) [MPa]	Measured average pressure (Pa) [MPa]	Accuracy error (q) [MPa]	Repeatability error (b) [MPa]	Reversibility error (v) [MPa]	Expanded Uncertainty (U) [MPa]
0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.002
2.000	2.001	2.002	2.003	2.002	0.002	0.001	0.000	0.004
4.000	4.004	4.003	4.006	4.004	0.004	0.002	-0.001	0.006
6.000	6.005	6.002	6.003	6.003	0.003	0.003	-0.001	0.007
8.000	8.001	7.998	8.001	8.000	0.000	0.002	-0.002	0.007
10.000	9.993	9.993	9.990	9.992	-0.008	0.003		0.008
8.000	8.000	7.999	7.997	7.998	-0.002	0.002	-0.002	0.007
6.000	6.001	6.004	6.001	6.002	0.002	0.003	-0.001	0.006
4.000	4.002	4.002	4.005	4.003	0.003	0.003	-0.001	0.006
2.000	2.002	2.002	2.003	2.003	0.003	0.001	0.000	0.004
0.000	0.000	0.000	0.000	0.000	0.000	0.001		0.003

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SLOPE CALIBRATION RESULT [INCLINATION]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

Sensor	
Channel	Slope [Inclination]
Manufacturer / Type	ADXL
Calibrated Range	0 to 15 Deg
Maximum Rating	0 to 20 Deg

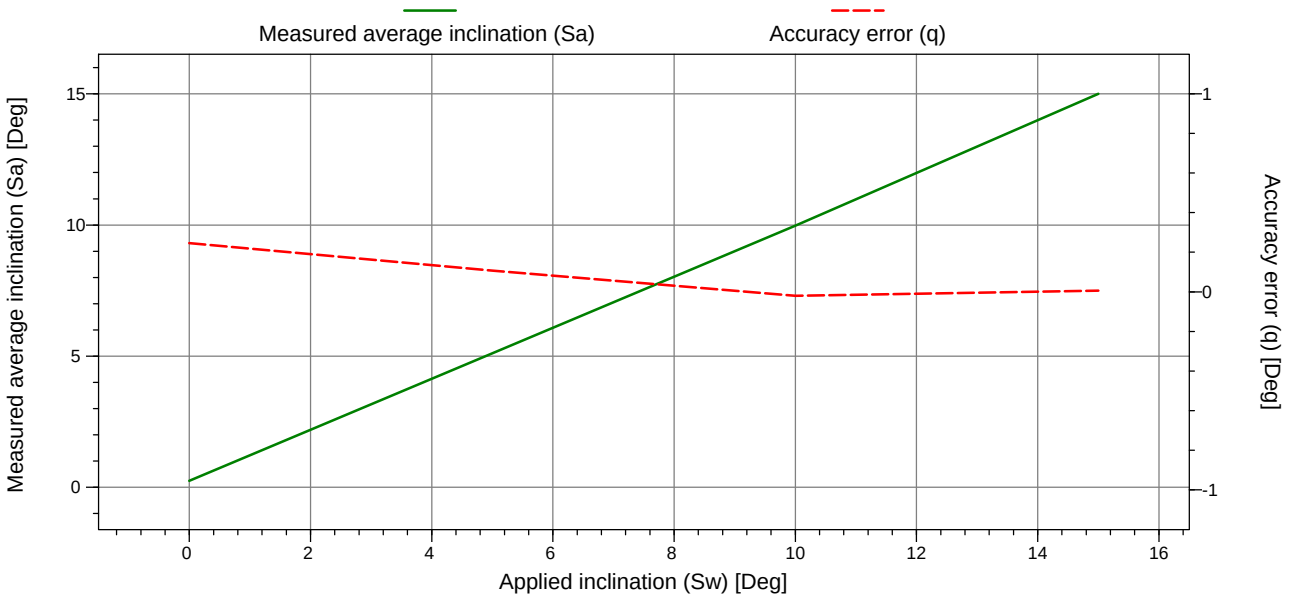
Reference	
Manufacturer	Hoek-O-Mat
Serial Number	2109-0001
Uncertainty	0.6 [Deg]

Calibration Details	
Calibration Date	23 dec 2021 08:03:19
Procedure	FEBV.CAL.PRO.005
Software Version	3.4.1.50595

Certificate Number
FCN21024724

Characteristics	Unit	Value
Max accuracy error (q)	[Deg]	0.2
Max repeatability error (b)	[Deg]	0.2
Zero load error (Sc0)	[Deg]	0.0
Zero load offset (S0)	[Deg]	0.3
Resolution	[Deg]	1.33E-05
Noise RMS	[Deg]	0.0

Inclination is defined as the angular deviation of the cone penetrometer from the vertical.



Applied inclination (Sw) [Deg]	Measured inclination 1 (Sa,1) [Deg]	Measured inclination 2 (Sa,2) [Deg]	Measured inclination 3 (Sa,3) [Deg]	Measured average inclination (Sa) [Deg]	Accuracy error (q) [Deg]	Repeatability error (b) [Deg]	Expanded Uncertainty (U) [Deg]
0.0	0.3	0.2	0.3	0.2	0.2	0.2	0.7
5.0	5.1	5.2	5.1	5.1	0.1	0.1	0.7
10.0	10.0	10.0	10.0	10.0	0.0	0.0	0.7
15.0	15.1	14.9	15.0	15.0	0.0	0.1	0.7

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Certificate Number
FCN21024724

Symbols and Definitions (general)

b	Repeatability error, defined as the maximum difference between the measurements of the instrument at the applied value.
Noise RMS	Signal noise, defined as the quadratic mean when the sensor is not subjected to load.
q	Accuracy error, defined as the difference between the average indicated value by the instrument and the applied value.
Resolution	Smallest change in a quantity being measured that causes a perceptible change in the corresponding indication.
U	The stated uncertainty is that of the average indicated quantity, and includes the entire calibration method, including the reference and calibrated sensor, but excludes the difference between average indicated value by the instrument and the applied value.
v	Reversibility error, defined as the difference between the average indicated value by the instrument at a certain applied value when it was increased and when it was decreased.

Symbols and Definitions (quantity specific: Q may be substituted for F, P or S, as appropriate)

Q0	Zero load offset, instrument output where the specified measured quantity value is zero.
Qa	Average indicated quantity value by the instrument.
Qa,x	Quantity value indicated by the instrument at measurement x.
Qc0	Zero load error, defined as the difference between the average indicated value by the instrument before and after the load cycle has been applied.
Qw	Applied reference quantity value.

Quantities

F	Force
P	Pressure
S	Inclination

References

International Organization for Standardization, 2012. *ISO 22476-1:2012 Geotechnical investigation and testing, Field testing, Electrical cone and piezocone penetration test.* Geneva: ISO.

European Co-operation For Accreditation, 2013. *Evaluation of the uncertainty of measurement in calibration.* European Co-operation For Accreditation, Publication; EA-4/02 M:2013.

International Organization for Standardization, 2005. *ISO 17025:2005 General requirements for the competence of testing and calibration laboratories.* Geneva: ISO.

International Organization for Standardization, 2003. *ISO 10012:2003 Measurement management systems - requirements for measurement processes and measuring equipment.* Geneva: ISO.

International Organization for Standardization, 2008. *ISO 9001:2008 Quality management systems - Requirements.* Geneva: ISO.

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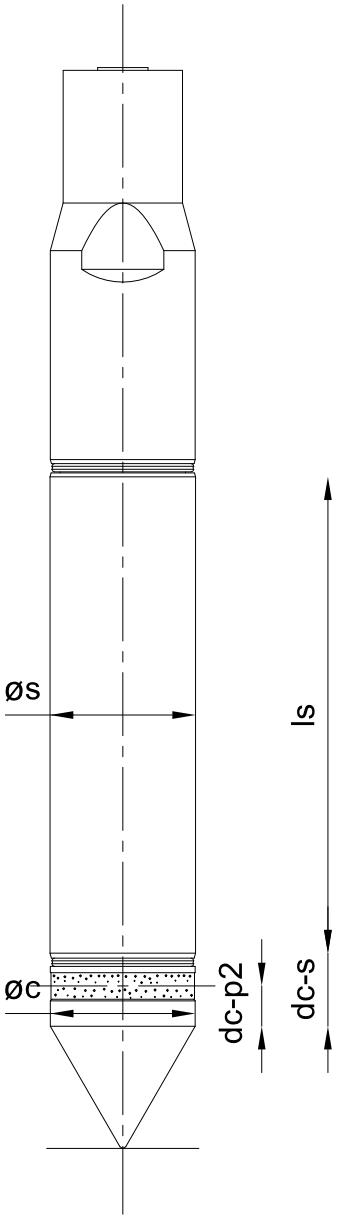
Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662

Appendix Applicable to Certificate Number FCN21024724



Typical Dimensions		
Ac	Cross-sectional projected area of the cone	0.001 m²
As	Surface area of the friction sleeve	0.015 m²
af	Cone net area ratio	0.75
scf	Friction sleeve net area ratio	0
øc	Diameter of the cylindrical part of the cone	35.8 mm
øs	Diameter of the friction sleeve	36.1 mm
ls	Length of the friction sleeve	132.7 mm
dc-s	Cone - friction sleeve distance	13.5 mm
dc-p2	Cone - pore 2 distance	5 mm

Diagram is not to scale

CONE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

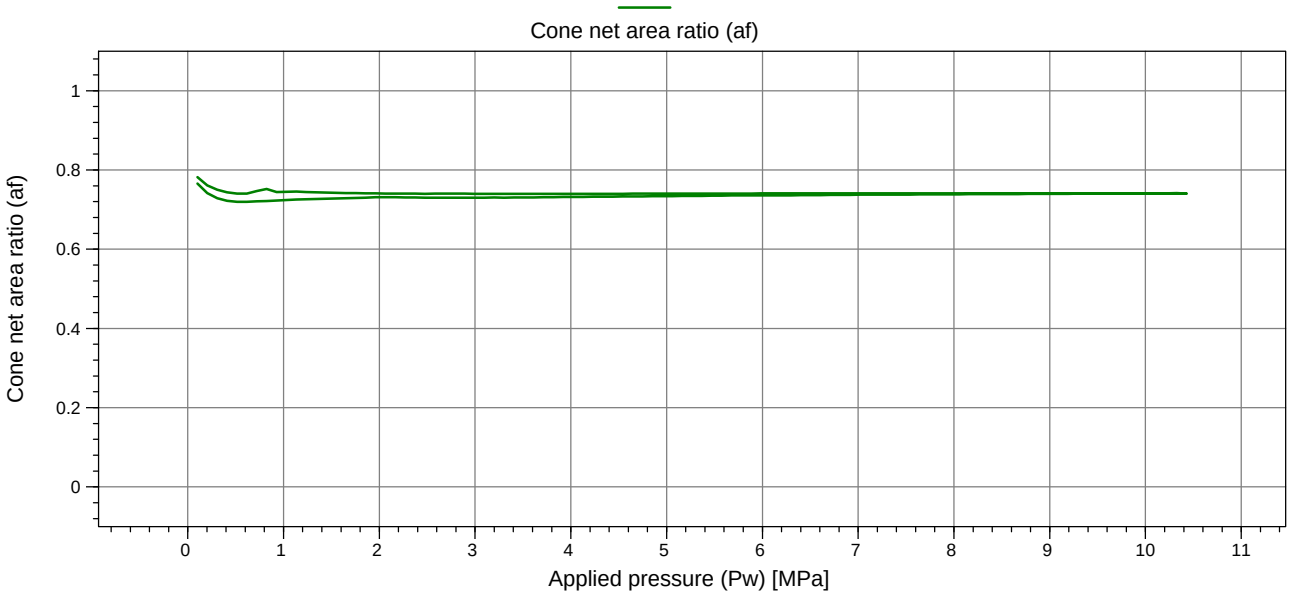
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 08:25:32
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024724

Characteristics	Unit	Value
Cone net area ratio (af)	[-]	0.74

The cone net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured cone net area ratio 1 (af,1)	Measured cone net area ratio 2 (af,2)	Measured cone net area ratio 3 (af,3)	Measured average cone net area ratio (af)
2.000	0.729	0.732	0.732	0.731
4.000	0.730	0.732	0.733	0.732
6.000	0.735	0.736	0.737	0.736
8.000	0.738	0.739	0.739	0.739
10.000	0.740	0.741	0.741	0.741
8.000	0.741	0.741	0.742	0.741
6.000	0.740	0.741	0.741	0.741
4.000	0.739	0.740	0.741	0.740
2.000	0.738	0.741	0.742	0.741

FRICTION SLEEVE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2662
Electronics	8448
Node Type	7001
Hardware Version	5.01
Software Version	7.11

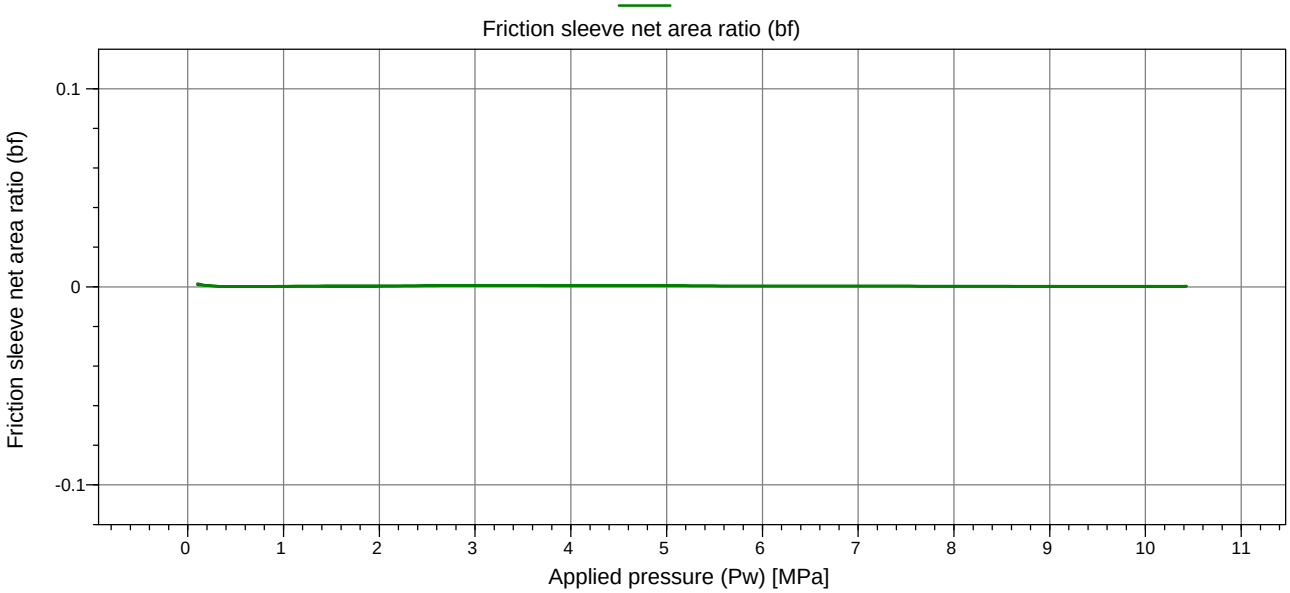
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 08:25:32
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024724

Characteristics	Unit	Value
Friction sleeve net area ratio (bf)	[-]	0.00028

The friction sleeve net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured friction sleeve net area ratio (bf) 1 (bf,1)	Measured friction sleeve net area ratio (bf) 2 (bf,2)	Measured friction sleeve net area ratio (bf) 3 (bf,3)	Measured average Friction sleeve net area ratio (bf)
2.000	0.000	0.000	0.000	0.000
4.000	0.001	0.001	0.001	0.001
6.000	0.001	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000
4.000	0.001	0.000	0.000	0.000
2.000	0.001	0.001	0.001	0.001

Appendix Applicable to Certificate Number FCN21024724

Symbols and Definitions (general)	
af	Cone net area ratio, defined as the factor between the applied pressure to the instrument and the indicated cone resistance.
af,x	Measured cone net area ratio at measurement x.
bf	Friction sleeve net area ratio, defined as the factor between the applied pressure to the instrument and the indicated sleeve friction.
bf,x	The measured friction sleeve net area ratio at measurement x.

Symbols and Definitions (quantity specific: Q may be substituted for P, as appropriate)	
Qw	Applied reference quantity value.

Quantities	
P	Pressure

CALIBRATION CERTIFICATE

Applicant	**Fugro GeoServices Ltd.**
	Fugro House, Hithercroft Road
	OX10 9RB, Wallingford
	United Kingdom

Certificate Number
FCN21024726

Instrument	**Cone Penetrometer**
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663

Calibration method The instrument was calibrated according to Fugro procedures using a comparison technique against a reference standard.

Environmental Conditions	
Temperature during calibration	20.5 ± 3 °C
Atmospheric pressure during calibration	1000 ± 100 mbar

Result The condition of the cone penetrometer meets the requirements of ISO 22476-1:2012 Section 4.1 through 4.7. The calibration results are reported on the next page(s).

The calibration results indicate that the cone penetrometer meets the requirements for use in Application Class 1 as defined in ISO 22476-1:2012 Section 5.2.

Uncertainty The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides a confidence level of approximately 95%. The standard uncertainty has been determined in accordance with EA-4/02.

Traceability Fugro reference standards are periodically recertified and are traceable to the International System of Units (SI). Fugro's calibration system meets or exceeds the requirements of ISO 9001:2008, ISO 10012:2003 and ISO/IEC 17025:2017.

Calibration date 23-dec-2021

Calibrate before 23-dec-2022

Calibrated Sensor	**Manufacturer / Type**	**Calibrated Range**	**Maximum Rating**	**Procedure**
Cone [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Cone+Fric. [Force]	Fugro Loadcell	0 to 100 kN	0 to 100 kN	FEBV.CAL.PRO.003
Pore 2 [Pressure]	Keller PA-8/100bar (8467.8)	0 to 10 MPa	0 to 15 MPa	FEBV.CAL.PRO.004
Slope [Inclination]	ADXL	0 to 15 Deg	0 to 20 Deg	FEBV.CAL.PRO.005

	Before adjustment		**After adjustment**		**Drift**	
Calibrated Sensor	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**	**Sensitivity**	**Zero Load**
Cone [Force]	25.0 µV/V/kN	3.58 µV/V	25.0 µV/V/kN	4.39 µV/V	0.00 %	0.03 %
Cone+Fric. [Force]	24.9 µV/V/kN	4.48 µV/V	25.0 µV/V/kN	10.6 µV/V	0.40 %	0.25 %
Pore 2 [Pressure]	2.40 mV/V/MPa	866 µV/V	2.40 mV/V/MPa	839 µV/V	-0.03 %	-0.11 %

Nootdorp, 24-dec-2021

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Gerry Sinjorgo
Manager Transducer Workshop

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CONE CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

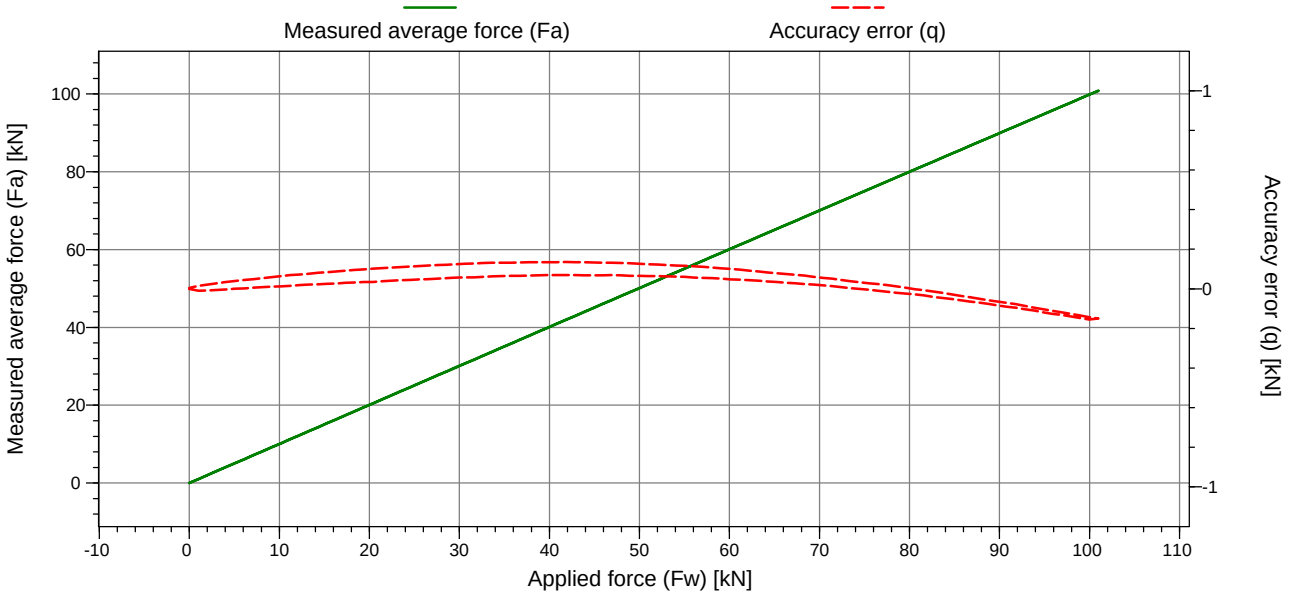
Sensor	
Channel	Cone [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0003
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 08:28:27
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024726

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.156
Max repeatability error (b)	[kN]	0.008
Max reversibility error (v)	[kN]	0.066
Zero load error (Fc0)	[kN]	0.005
Zero load offset (F0)	[kN]	-0.034
Resolution	[kN]	3.73E-05
Noise RMS	[kN]	0.000



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	0.002	0.000	-0.002	0.000	0.000	0.003		0.017
20.000	20.035	20.034	20.034	20.034	0.034	0.001	0.066	0.130
40.000	40.069	40.069	40.071	40.070	0.070	0.002	0.064	0.160
60.000	60.050	60.047	60.049	60.049	0.049	0.004	0.052	0.209
80.000	79.980	79.972	79.972	79.974	-0.026	0.008	0.028	0.264
100.000	99.846	99.842	99.844	99.844	-0.156	0.004		0.323
80.000	80.007	80.001	80.000	80.002	0.002	0.007	0.028	0.264
60.000	60.105	60.101	60.097	60.101	0.101	0.007	0.052	0.209
40.000	40.136	40.133	40.133	40.134	0.134	0.003	0.064	0.160
20.000	20.100	20.101	20.099	20.100	0.100	0.002	0.066	0.130
0.000	0.006	0.005	0.003	0.005	0.005	0.002		0.016

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CONE+FRIC. CALIBRATION RESULT [FORCE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

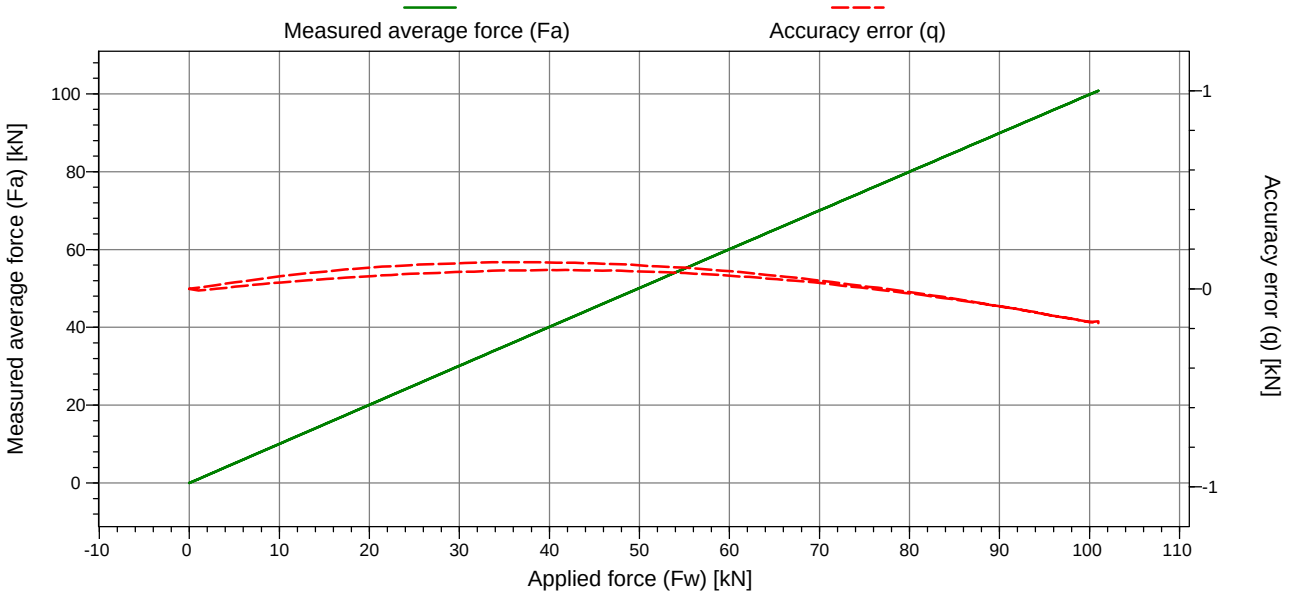
Sensor	
Channel	Cone+Fric. [Force]
Manufacturer / Type	Fugro Loadcell
Calibrated Range	0 to 100 kN
Maximum Rating	0 to 100 kN

Reference	
Manufacturer	Zwick/Roell
Serial Number	6034-0003
Uncertainty	0.003•Fw+0.015 [kN]

Calibration Details	
Calibration Date	23 dec 2021 08:28:27
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Certificate Number
FCN21024726

Characteristics	Unit	Value
Max accuracy error (q)	[kN]	0.168
Max repeatability error (b)	[kN]	0.009
Max reversibility error (v)	[kN]	0.043
Zero load error (Fc0)	[kN]	0.001
Zero load offset (F0)	[kN]	-0.032
Resolution	[kN]	3.73E-05
Noise RMS	[kN]	0.000
Tip-Sleeve Interaction %	[%]	0.054



Applied force (Fw) [kN]	Measured force 1 (Fa,1) [kN]	Measured force 2 (Fa,2) [kN]	Measured force 3 (Fa,3) [kN]	Measured average force (Fa) [kN]	Accuracy error (q) [kN]	Repeatability error (b) [kN]	Reversibility error (v) [kN]	Expanded Uncertainty (U) [kN]
0.000	0.002	0.000	-0.002	0.000	0.000	0.004		0.016
20.000	20.068	20.063	20.060	20.064	0.064	0.008	0.043	0.096
40.000	40.098	40.094	40.094	40.095	0.095	0.004	0.037	0.145
60.000	60.070	60.063	60.065	60.066	0.066	0.007	0.023	0.202
80.000	79.983	79.974	79.975	79.977	-0.023	0.009	0.006	0.262
100.000	99.835	99.828	99.832	99.832	-0.168	0.007		0.323
80.000	79.986	79.981	79.981	79.983	-0.017	0.005	0.006	0.262
60.000	60.093	60.089	60.086	60.089	0.089	0.007	0.023	0.202
40.000	40.136	40.131	40.131	40.132	0.132	0.005	0.037	0.145
20.000	20.109	20.107	20.104	20.107	0.107	0.004	0.043	0.096
0.000	0.001	0.001	0.000	0.001	0.001	0.001		0.015

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PORE 2 CALIBRATION RESULT [PRESSURE]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

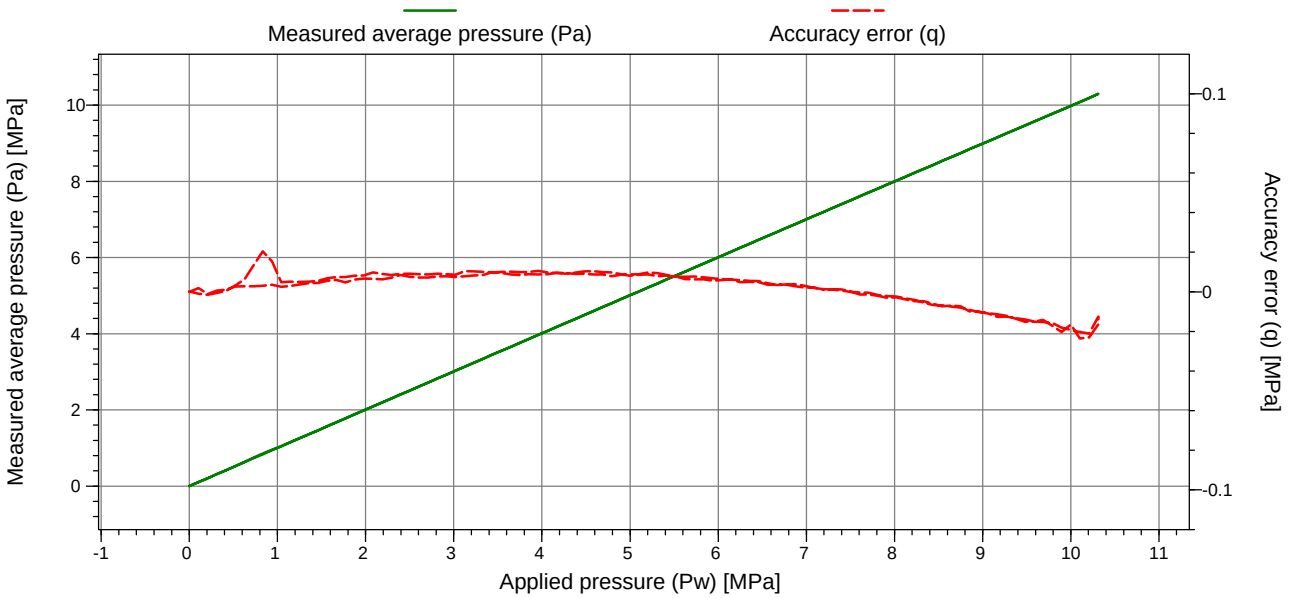
Sensor	
Channel	Pore 2 [Pressure]
Manufacturer / Type	Keller PA-8/100bar (8467.8)
Calibrated Range	0 to 10 MPa
Maximum Rating	0 to 15 MPa

Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Calibration Details	
Calibration Date	23 dec 2021 09:30:30
Procedure	FEBV.CAL.PRO.004
Software Version	3.4.1.50595

Certificate Number
FCN21024726

Characteristics	Unit	Value
Max accuracy error (q)	[MPa]	0.019
Max repeatability error (b)	[MPa]	0.004
Max reversibility error (v)	[MPa]	0.002
Zero load error (Pc0)	[MPa]	0.000
Zero load offset (P0)	[MPa]	-0.001
Resolution	[MPa]	3.1E-06
Noise RMS	[MPa]	0.000



Applied pressure (Pw) [MPa]	Measured pressure 1 (Pa,1) [MPa]	Measured pressure 2 (Pa,2) [MPa]	Measured pressure 3 (Pa,3) [MPa]	Measured average pressure (Pa) [MPa]	Accuracy error (q) [MPa]	Repeatability error (b) [MPa]	Reversibility error (v) [MPa]	Expanded Uncertainty (U) [MPa]
0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.002
2.000	2.007	2.005	2.008	2.007	0.007	0.002	0.002	0.005
4.000	4.009	4.011	4.007	4.009	0.009	0.004	0.001	0.007
6.000	6.006	6.006	6.005	6.006	0.006	0.001	0.001	0.006
8.000	7.999	7.996	7.998	7.998	-0.002	0.003	-0.001	0.007
10.000	9.982	9.980	9.981	9.981	-0.019	0.002		0.008
8.000	7.998	7.997	7.996	7.997	-0.003	0.002	-0.001	0.007
6.000	6.007	6.007	6.006	6.006	0.006	0.002	0.001	0.006
4.000	4.010	4.010	4.011	4.010	0.010	0.001	0.001	0.005
2.000	2.009	2.008	2.009	2.009	0.009	0.001	0.002	0.004
0.000	0.001	0.000	0.000	0.000	0.000	0.001		0.003

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SLOPE CALIBRATION RESULT [INCLINATION]

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

Sensor	
Channel	Slope [Inclination]
Manufacturer / Type	ADXL
Calibrated Range	0 to 15 Deg
Maximum Rating	0 to 20 Deg

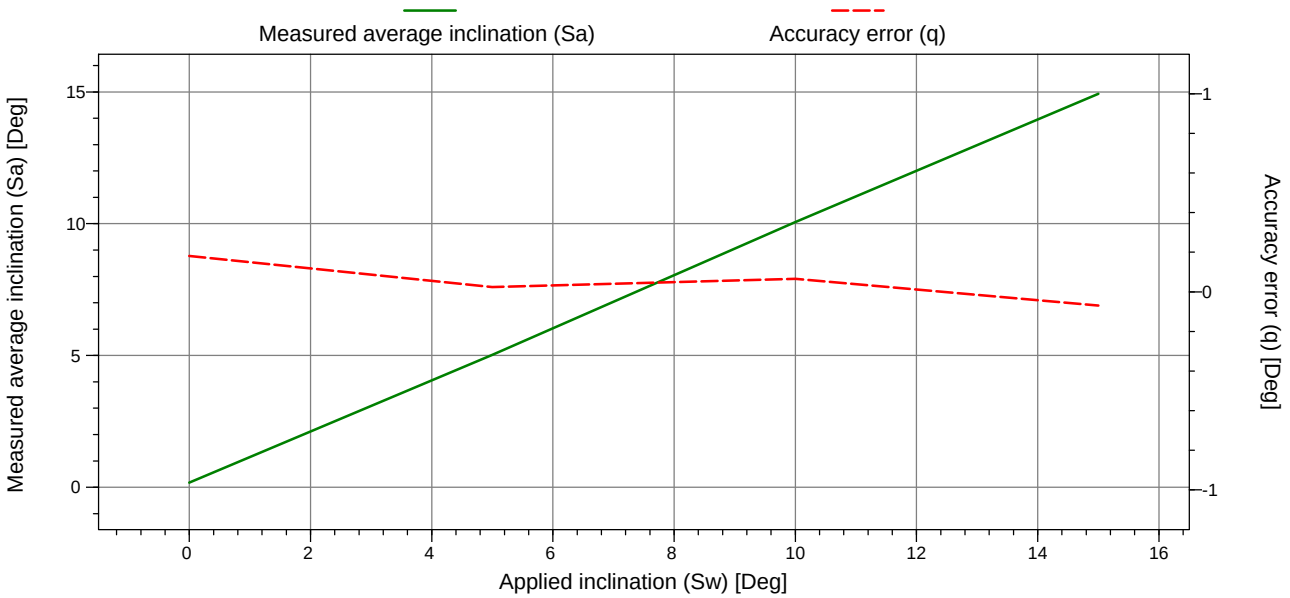
Reference	
Manufacturer	Hoek-O-Mat
Serial Number	2109-0002
Uncertainty	0.6 [Deg]

Calibration Details	
Calibration Date	23 dec 2021 08:33:22
Procedure	FEBV.CAL.PRO.005
Software Version	3.4.1.50595

Certificate Number
FCN21024726

Characteristics	Unit	Value
Max accuracy error (q)	[Deg]	0.2
Max repeatability error (b)	[Deg]	0.2
Zero load error (Sc0)	[Deg]	-0.1
Zero load offset (S0)	[Deg]	0.1
Resolution	[Deg]	1.28E-05
Noise RMS	[Deg]	0.0

Inclination is defined as the angular deviation of the cone penetrometer from the vertical.



Applied inclination (Sw) [Deg]	Measured inclination 1 (Sa,1) [Deg]	Measured inclination 2 (Sa,2) [Deg]	Measured inclination 3 (Sa,3) [Deg]	Measured average inclination (Sa) [Deg]	Accuracy error (q) [Deg]	Repeatability error (b) [Deg]	Expanded Uncertainty (U) [Deg]
0.0	0.1	0.3	0.1	0.2	0.2	0.2	0.7
5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.7
10.0	10.0	10.1	10.1	10.1	0.1	0.1	0.7
15.0	14.9	14.9	14.9	14.9	-0.1	0.0	0.7

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Certificate Number
FCN21024726

Symbols and Definitions (general)

b	Repeatability error, defined as the maximum difference between the measurements of the instrument at the applied value.
Noise RMS	Signal noise, defined as the quadratic mean when the sensor is not subjected to load.
q	Accuracy error, defined as the difference between the average indicated value by the instrument and the applied value.
Resolution	Smallest change in a quantity being measured that causes a perceptible change in the corresponding indication.
U	The stated uncertainty is that of the average indicated quantity, and includes the entire calibration method, including the reference and calibrated sensor, but excludes the difference between average indicated value by the instrument and the applied value.
v	Reversibility error, defined as the difference between the average indicated value by the instrument at a certain applied value when it was increased and when it was decreased.

Symbols and Definitions (quantity specific: Q may be substituted for F, P or S, as appropriate)

Q0	Zero load offset, instrument output where the specified measured quantity value is zero.
Qa	Average indicated quantity value by the instrument.
Qa,x	Quantity value indicated by the instrument at measurement x.
Qc0	Zero load error, defined as the difference between the average indicated value by the instrument before and after the load cycle has been applied.
Qw	Applied reference quantity value.

Quantities

F	Force
P	Pressure
S	Inclination

References

International Organization for Standardization, 2012. *ISO 22476-1:2012 Geotechnical investigation and testing, Field testing, Electrical cone and piezocone penetration test.* Geneva: ISO.

European Co-operation For Accreditation, 2013. *Evaluation of the uncertainty of measurement in calibration.* European Co-operation For Accreditation, Publication; EA-4/02 M:2013.

International Organization for Standardization, 2005. *ISO 17025:2005 General requirements for the competence of testing and calibration laboratories.* Geneva: ISO.

International Organization for Standardization, 2003. *ISO 10012:2003 Measurement management systems - requirements for measurement processes and measuring equipment.* Geneva: ISO.

International Organization for Standardization, 2008. *ISO 9001:2008 Quality management systems - Requirements.* Geneva: ISO.

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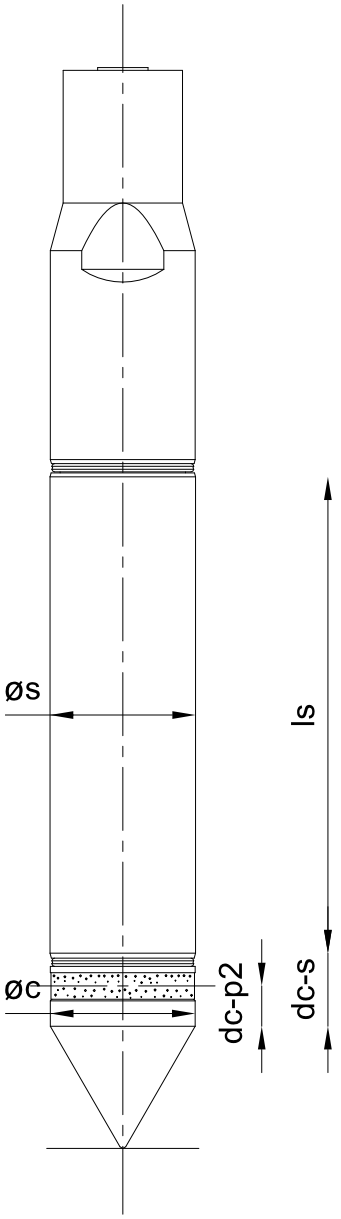
Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663

Appendix Applicable to Certificate Number FCN21024726



Typical Dimensions		
Ac	Cross-sectional projected area of the cone	0.001 m²
As	Surface area of the friction sleeve	0.015 m²
af	Cone net area ratio	0.75
scf	Friction sleeve net area ratio	0
øc	Diameter of the cylindrical part of the cone	35.8 mm
øs	Diameter of the friction sleeve	36.1 mm
ls	Length of the friction sleeve	132.7 mm
dc-s	Cone - friction sleeve distance	13.5 mm
dc-p2	Cone - pore 2 distance	5 mm

Diagram is not to scale

CONE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

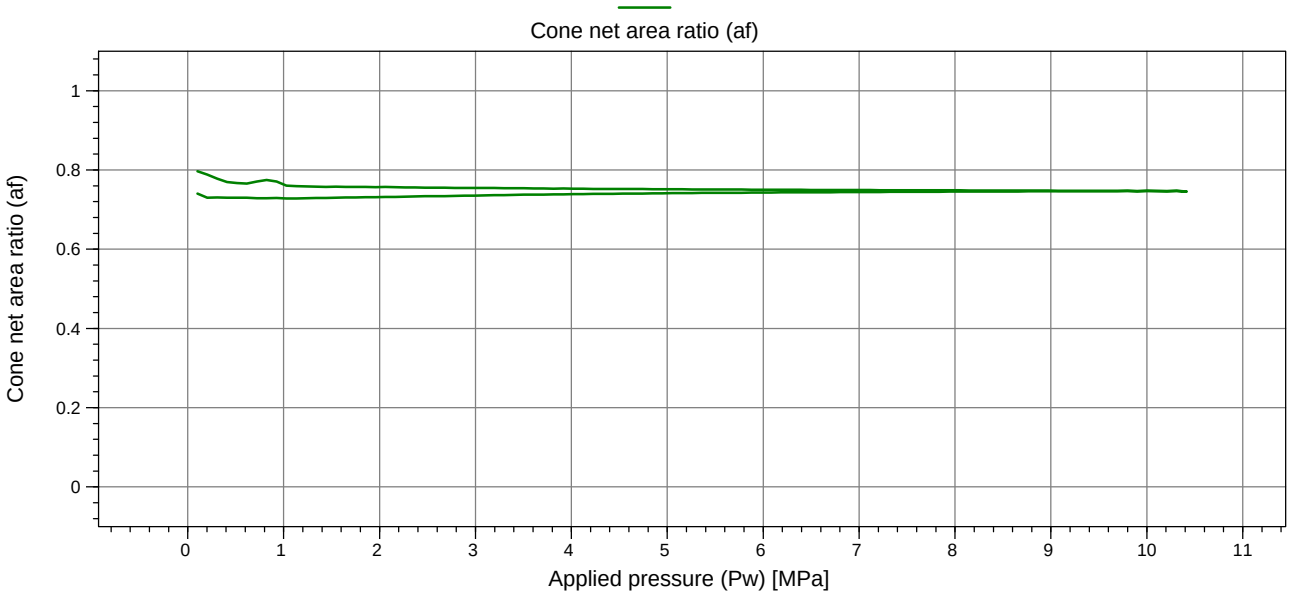
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 09:30:30
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024726

Characteristics	Unit	Value
Cone net area ratio (af)	[-]	0.75

The cone net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured cone net area ratio 1 (af,1)	Measured cone net area ratio 2 (af,2)	Measured cone net area ratio 3 (af,3)	Measured average cone net area ratio (af)
2.000	0.732	0.731	0.732	0.732
4.000	0.739	0.739	0.738	0.739
6.000	0.743	0.743	0.743	0.743
8.000	0.745	0.745	0.745	0.745
10.000	0.747	0.746	0.746	0.747
8.000	0.749	0.749	0.748	0.749
6.000	0.750	0.750	0.750	0.750
4.000	0.753	0.753	0.753	0.753
2.000	0.757	0.757	0.756	0.757

FRICTION SLEEVE NET AREA RATIO RESULT

Instrument	
Manufacturer	Fugro
Type	CP10-CF100PB10SN2-P1E1M1-V1
Serial Number	1706-2663
Electronics	8520
Node Type	7001
Hardware Version	5.01
Software Version	7.11

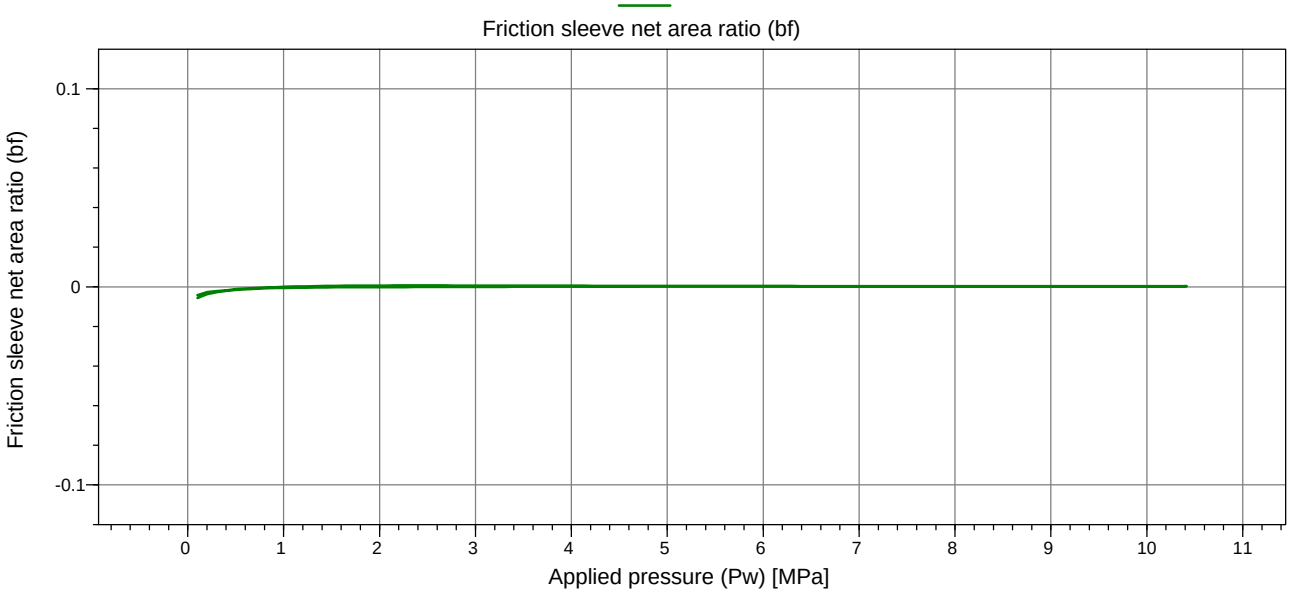
Reference	
Manufacturer	Keller PA-33X
Serial Number	3257-0002
Uncertainty	0.0005•Pw+0.002 [MPa]

Measurement Details	
Measurement Date	23 dec 2021 09:30:30
Procedure	FEBV.CAL.PRO.003
Software Version	3.4.1.50595

Appendix Applicable to Certificate Number FCN21024726

Characteristics	Unit	Value
Friction sleeve net area ratio (bf)	[-]	0.00027

The friction sleeve net area ratio presented above is determined at the maximum applied pressure during the measurement.



Applied pressure (Pw) [MPa]	Measured friction sleeve net area ratio (bf) 1 (bf,1)	Measured friction sleeve net area ratio (bf) 2 (bf,2)	Measured friction sleeve net area ratio (bf) 3 (bf,3)	Measured average Friction sleeve net area ratio (bf)
2.000	0.001	0.001	0.001	0.001
4.000	0.001	0.001	0.001	0.001
6.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000

Appendix Applicable to Certificate Number FCN21024726

Symbols and Definitions (general)

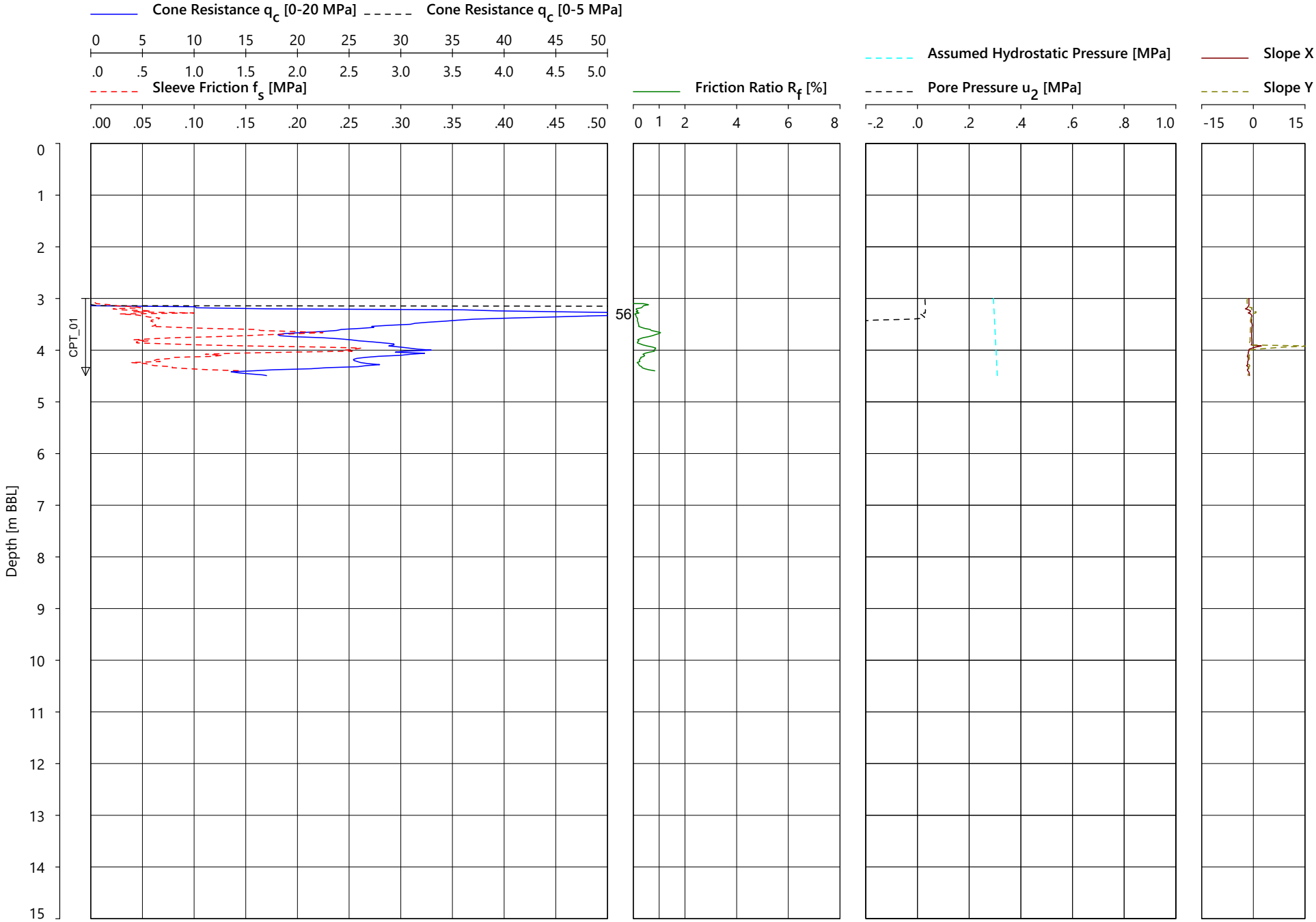
af	Cone net area ratio, defined as the factor between the applied pressure to the instrument and the indicated cone resistance.
af,x	Measured cone net area ratio at measurement x.
bf	Friction sleeve net area ratio, defined as the factor between the applied pressure to the instrument and the indicated sleeve friction.
bf,x	The measured friction sleeve net area ratio at measurement x.

Symbols and Definitions (quantity specific: Q may be substituted for P, as appropriate)

Qw	Applied reference quantity value.

Quantities

P	Pressure

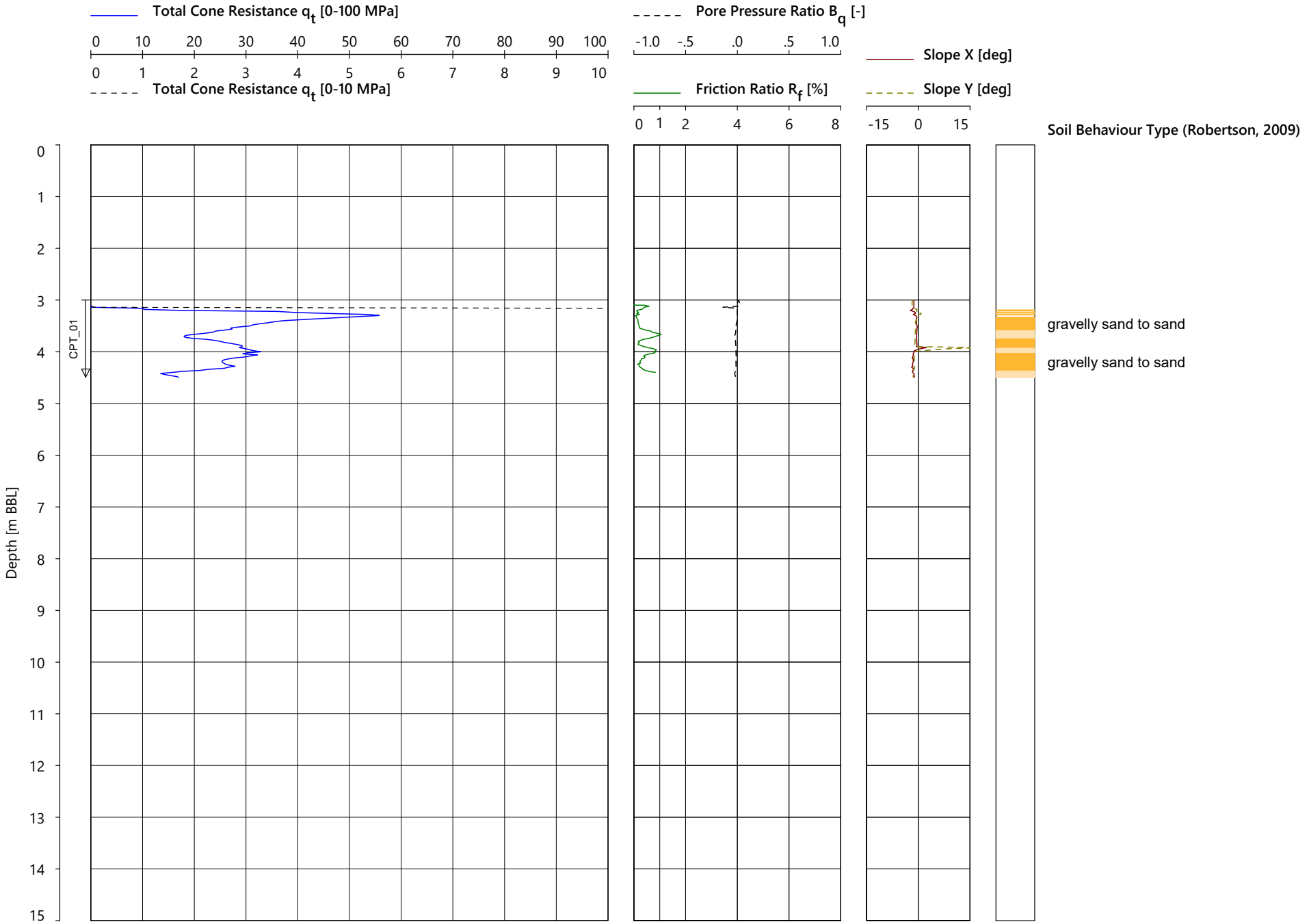


Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	06-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	26.4		

Location : **BH01**
Coordinates : **E** 303547.62 **N** 5866922.76 **Bed Level [m LAT]:** -24.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

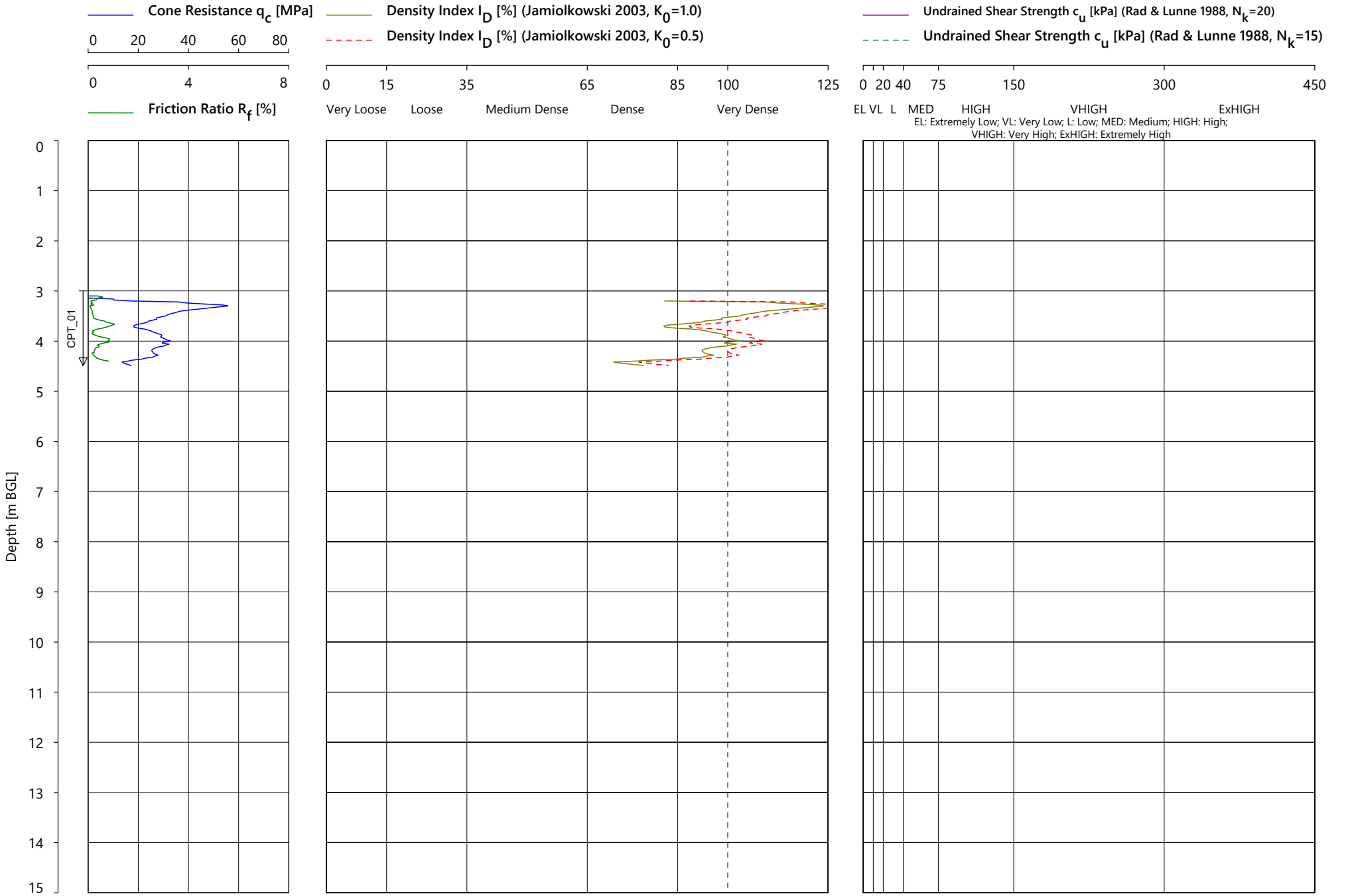
GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:32

Plate 3.41



Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	06-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	26.4		

Location : BH01
Coordinates : **E** 303547.62 **N** 5866922.76 **Bed Level [m LAT]:** -24.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH01**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 303547.62 **N** 5866922.76 **Bed Level [m LAT]:** -24.80
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 06-Jun-2022	**Water Depth [m] :** 26.4	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:41:47

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Location: **BH01**

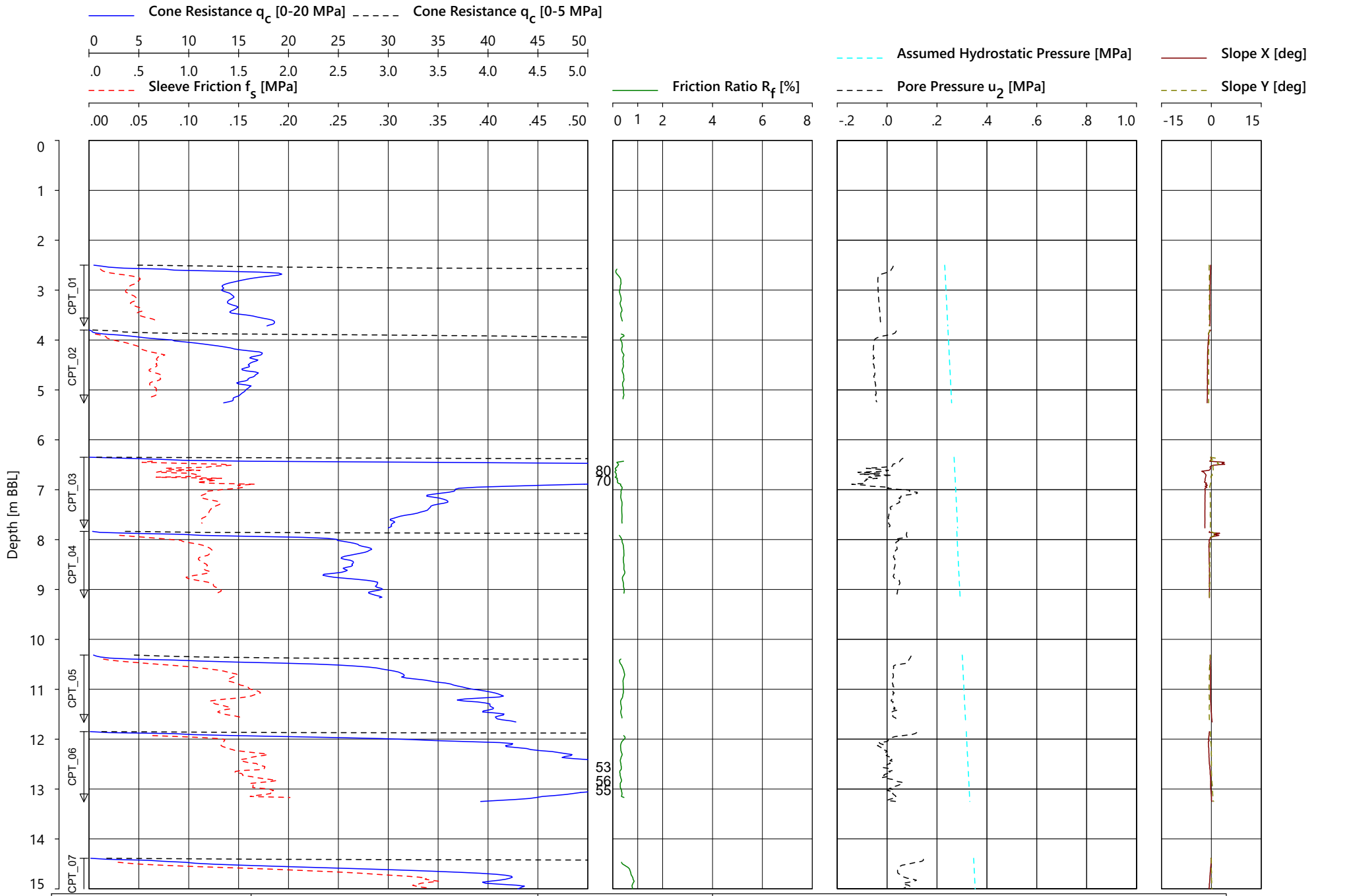
Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number	Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]				
CPT_01	0.031	0.018	0.002	-0.033	0.005	-0.009	1	CP10-CF100PB10SN2 1706-2663	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:06:57



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2662	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	11-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	20.6		

Location : **BH08**
Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:39

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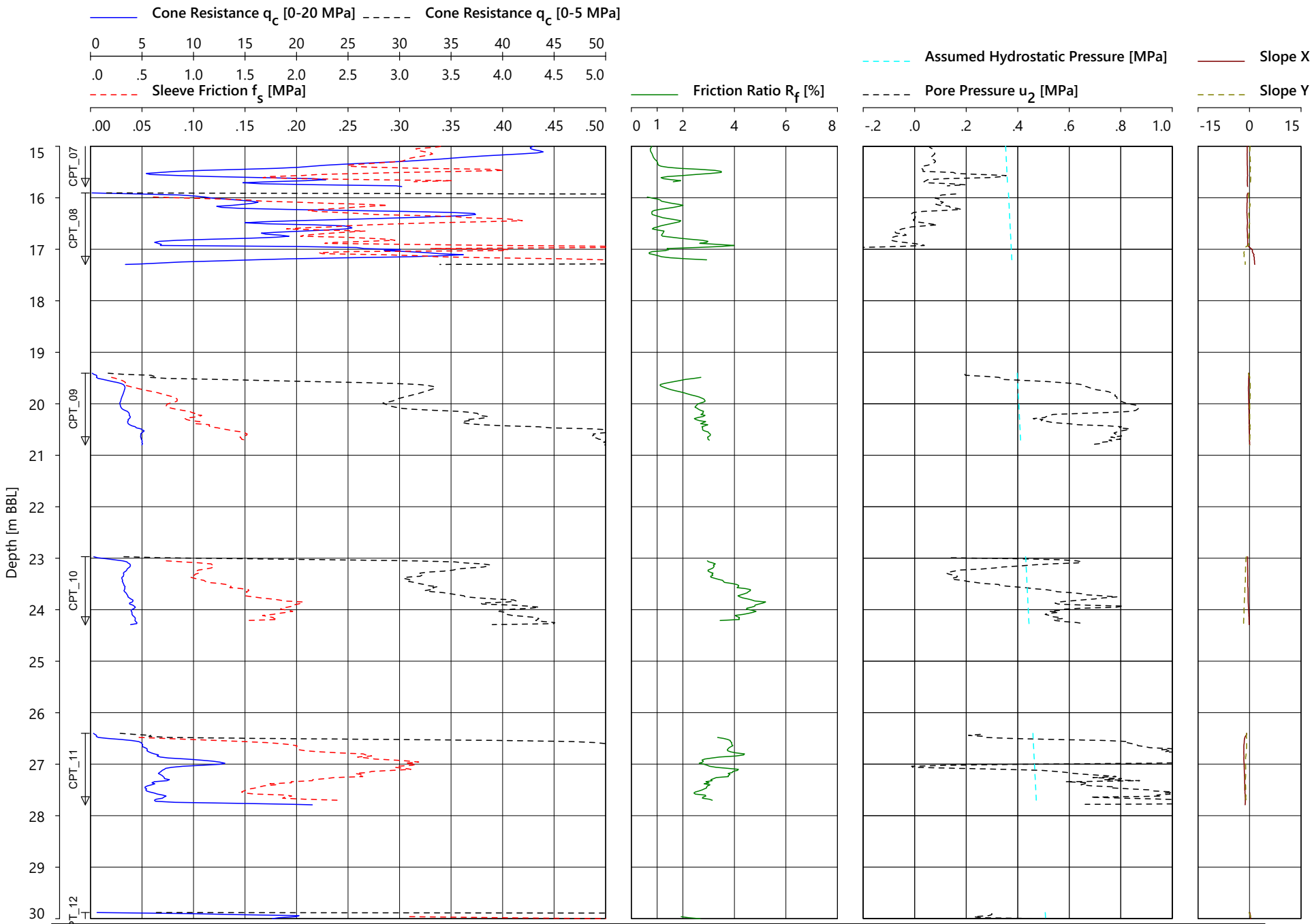


Piezocone Measured Data

CPT Rig ID :	GB20
CPT Cone :	1706-2662
Date of Test :	11-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	20.3

Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH08**

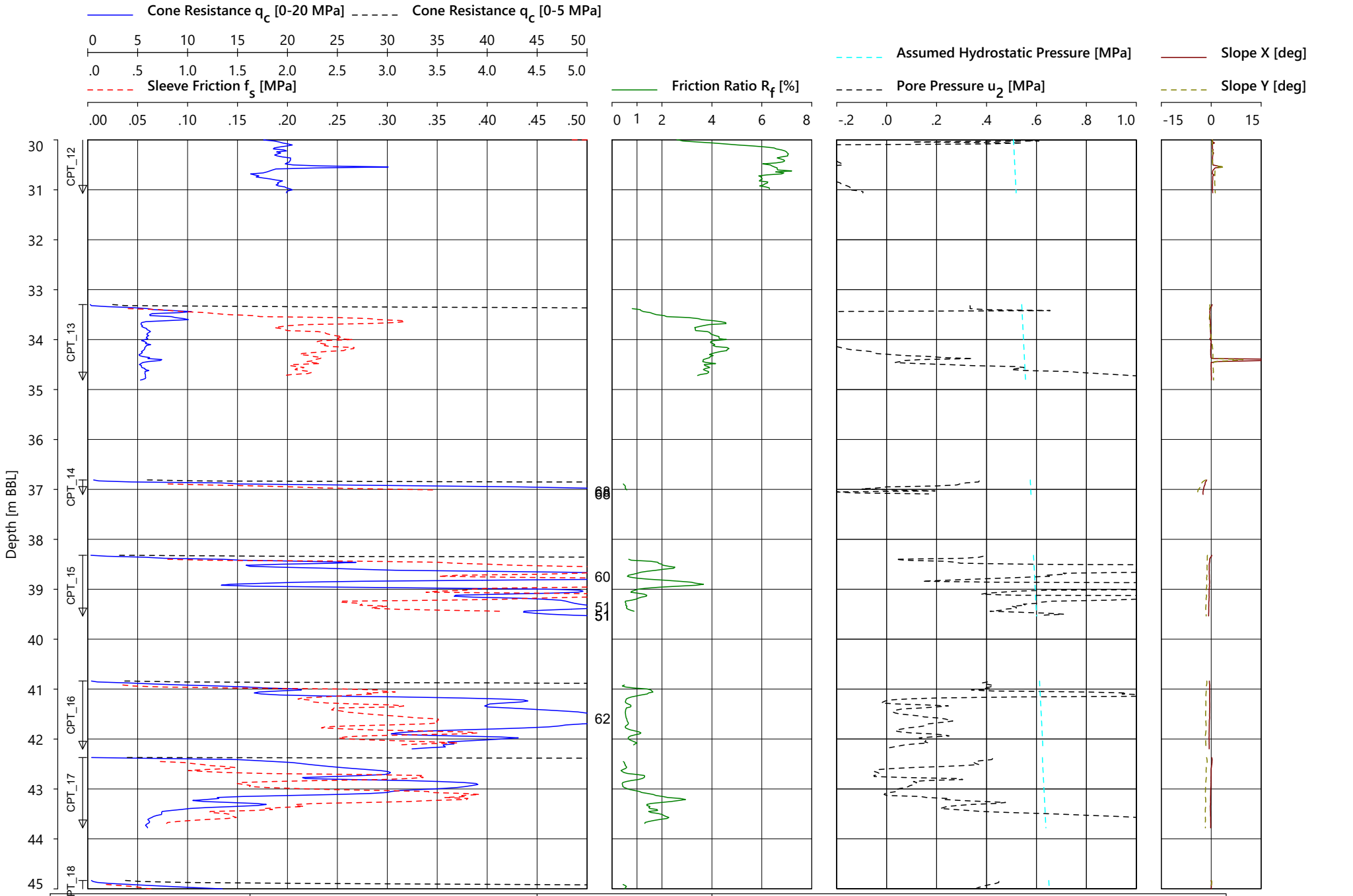
Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:39



Piezocone Measured Data

CPT Rig ID :	GB20
CPT Cone :	1706-2662
Date of Test :	12-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	20.8
Operator :	DT
Compiled by :	Onboard
Checked by :	JD

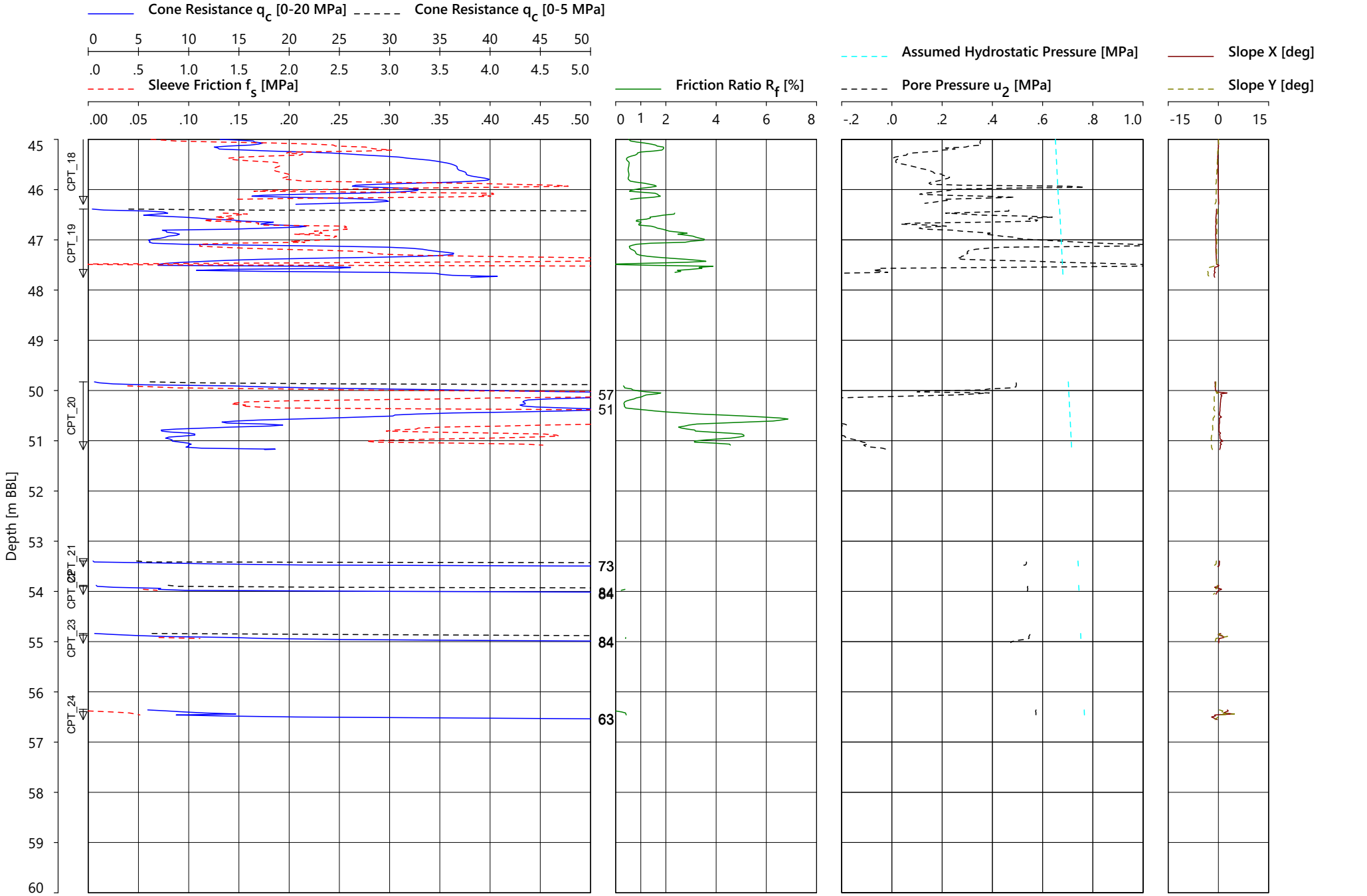
Location : BH08

Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2662	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	12-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	20.1		

Location : **BH08**
Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

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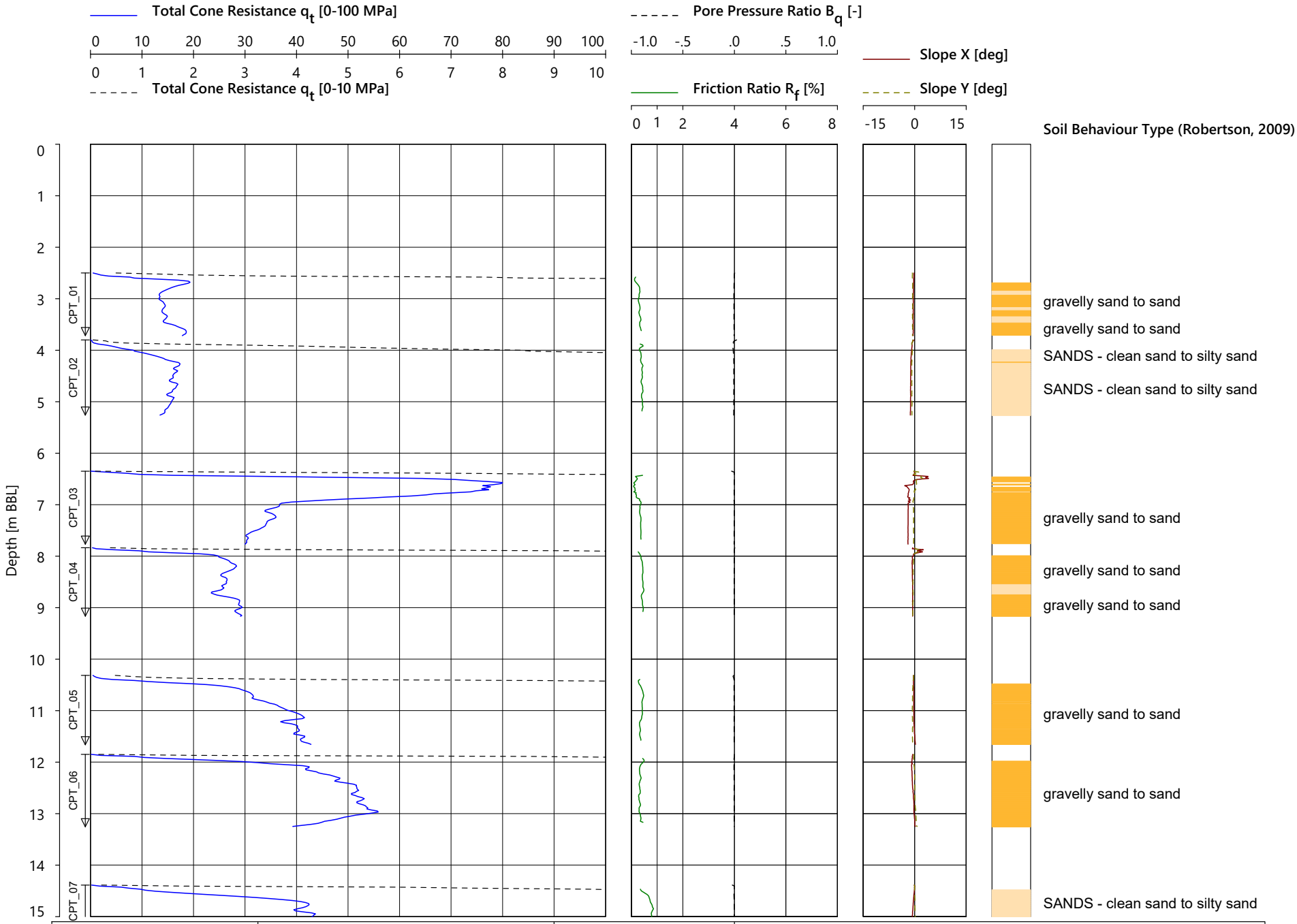

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2662
Date of Test :	11-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	20.6

Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH08**
Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

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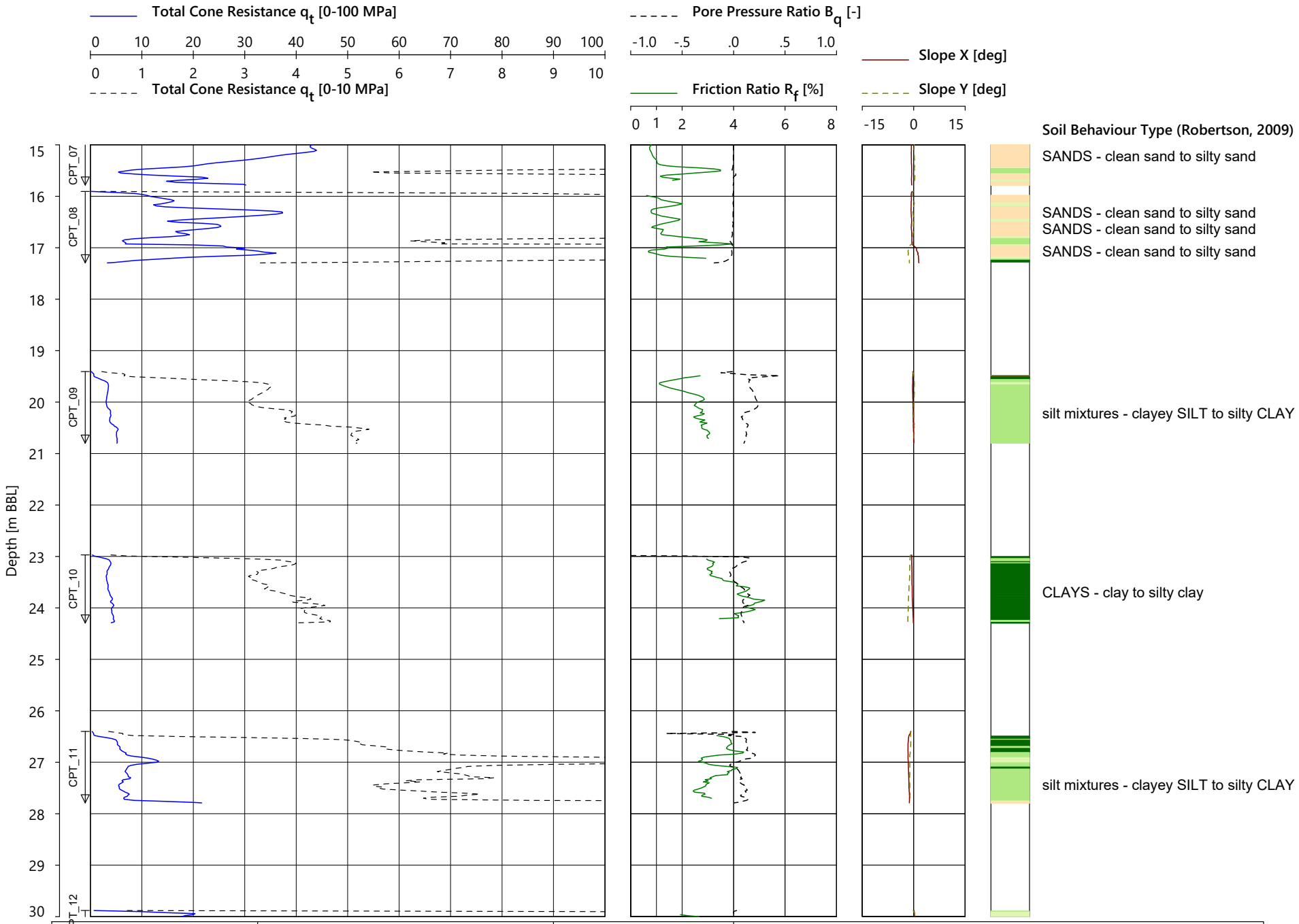

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2662
Date of Test :	11-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	20.3
Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH08**

Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40

Project : 210194

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Client : Sure Partners Limited

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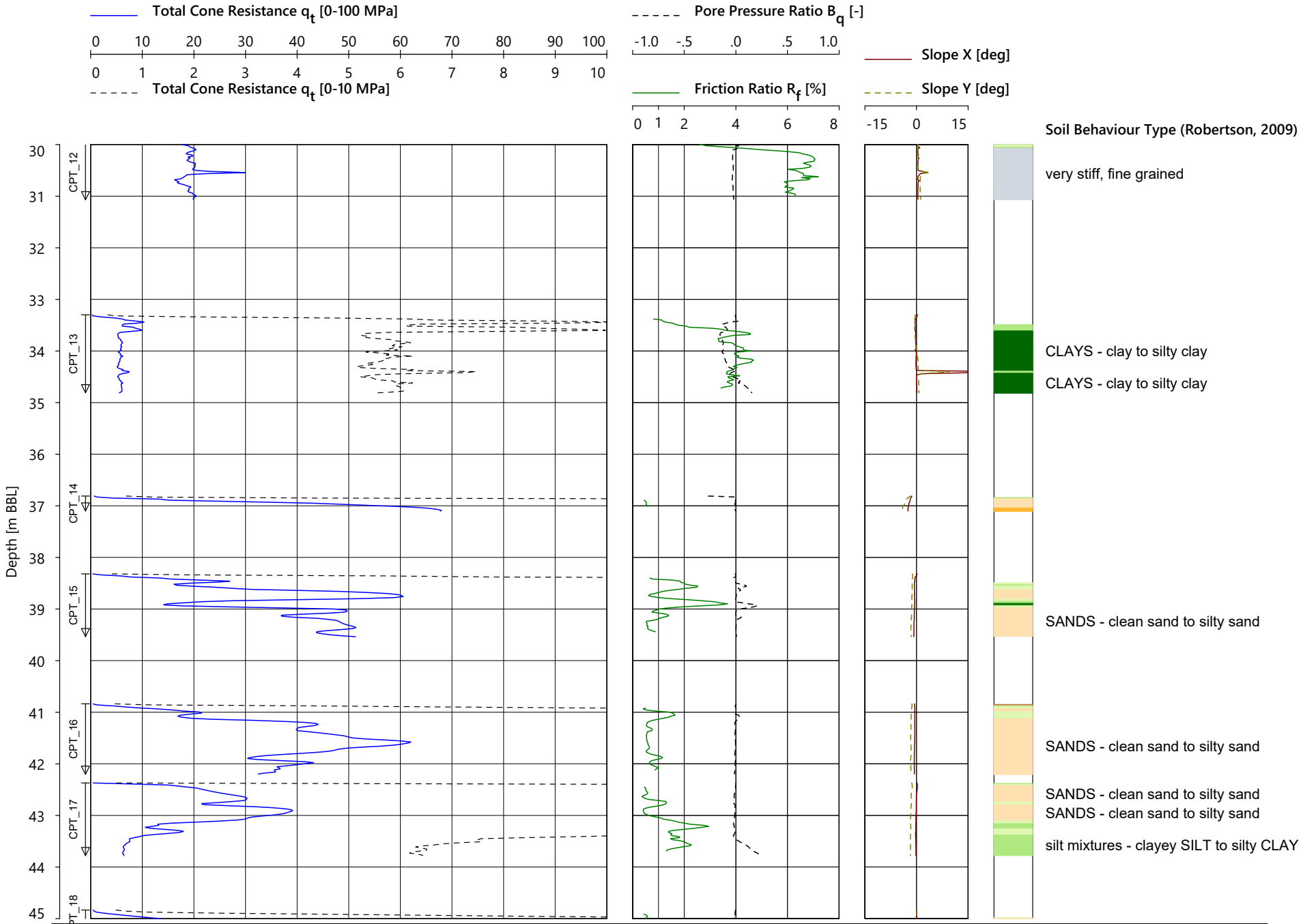


Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2662
Date of Test :	12-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	20.8
Operator :	DT
Compiled by :	Onboard
Checked by :	JD

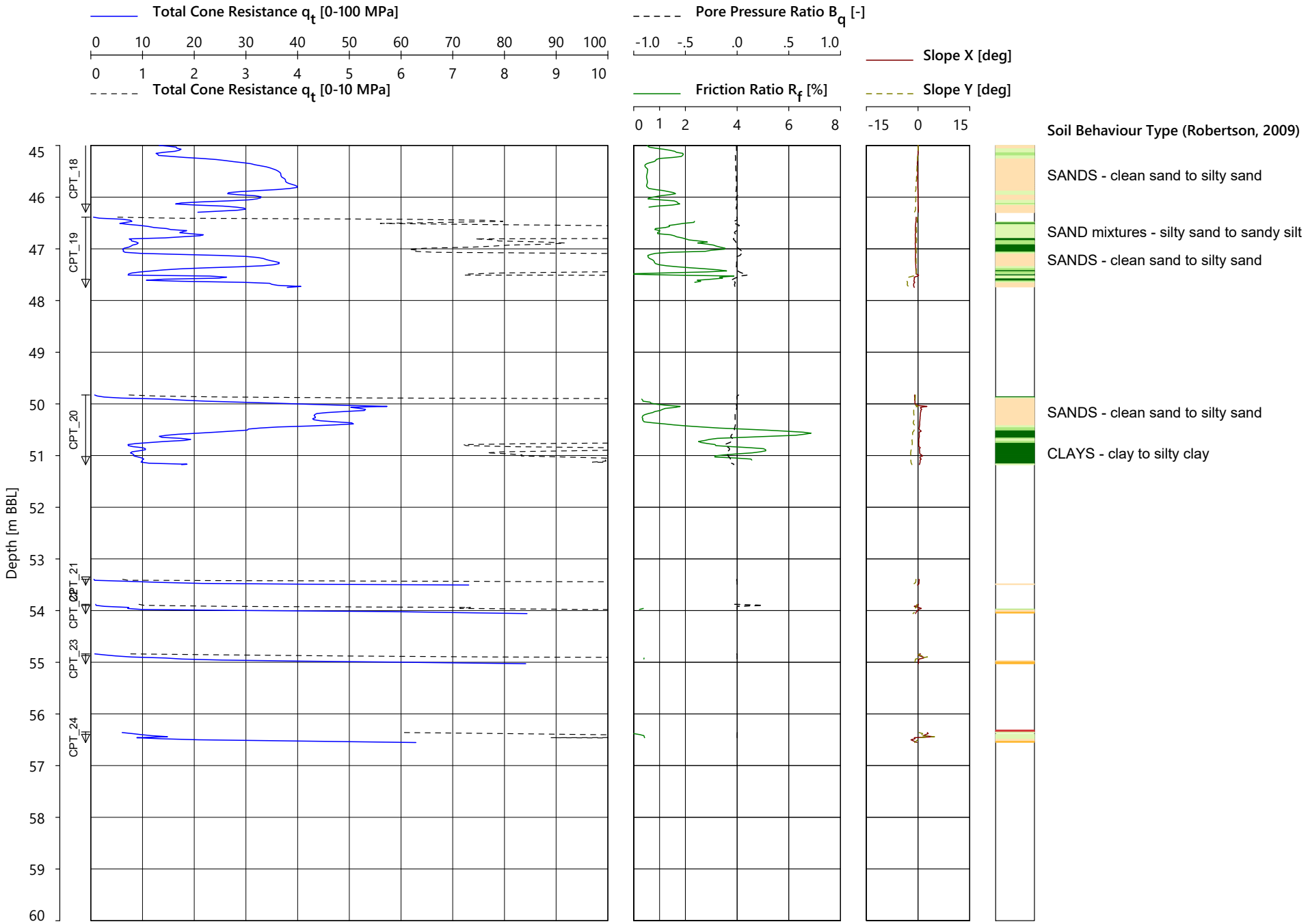
Location : BH08

Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited



Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2662	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	12-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	20.1		

Location : **BH08**
Coordinates : **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

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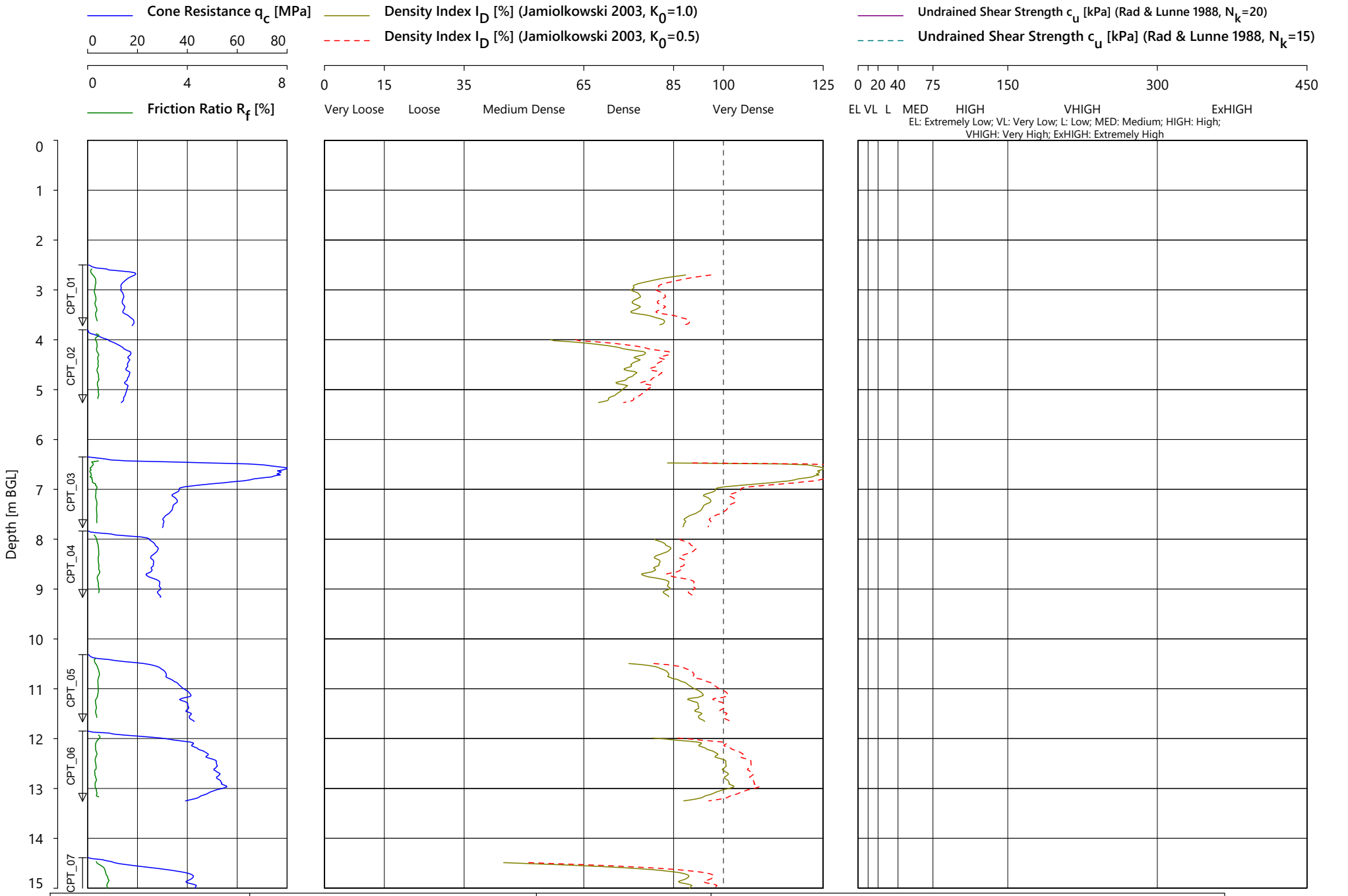

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH08**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
CPT Cone : 1706-2662	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 11-Jul-2022	**Water Depth [m] :** 20.6	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

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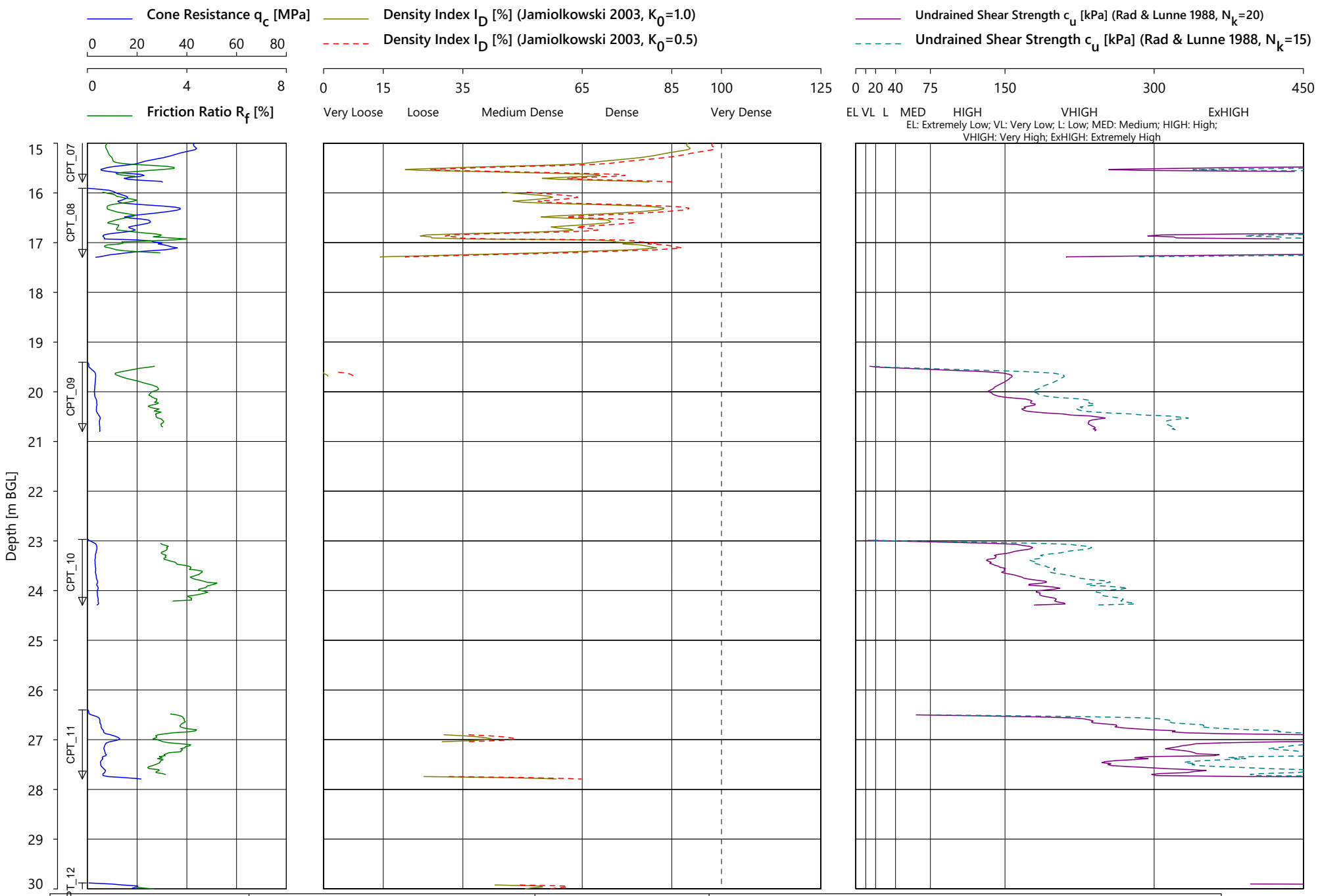

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location : BH08**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
CPT Cone : 1706-2662	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 11-Jul-2022	**Water Depth [m] :** 20.3		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:41:55

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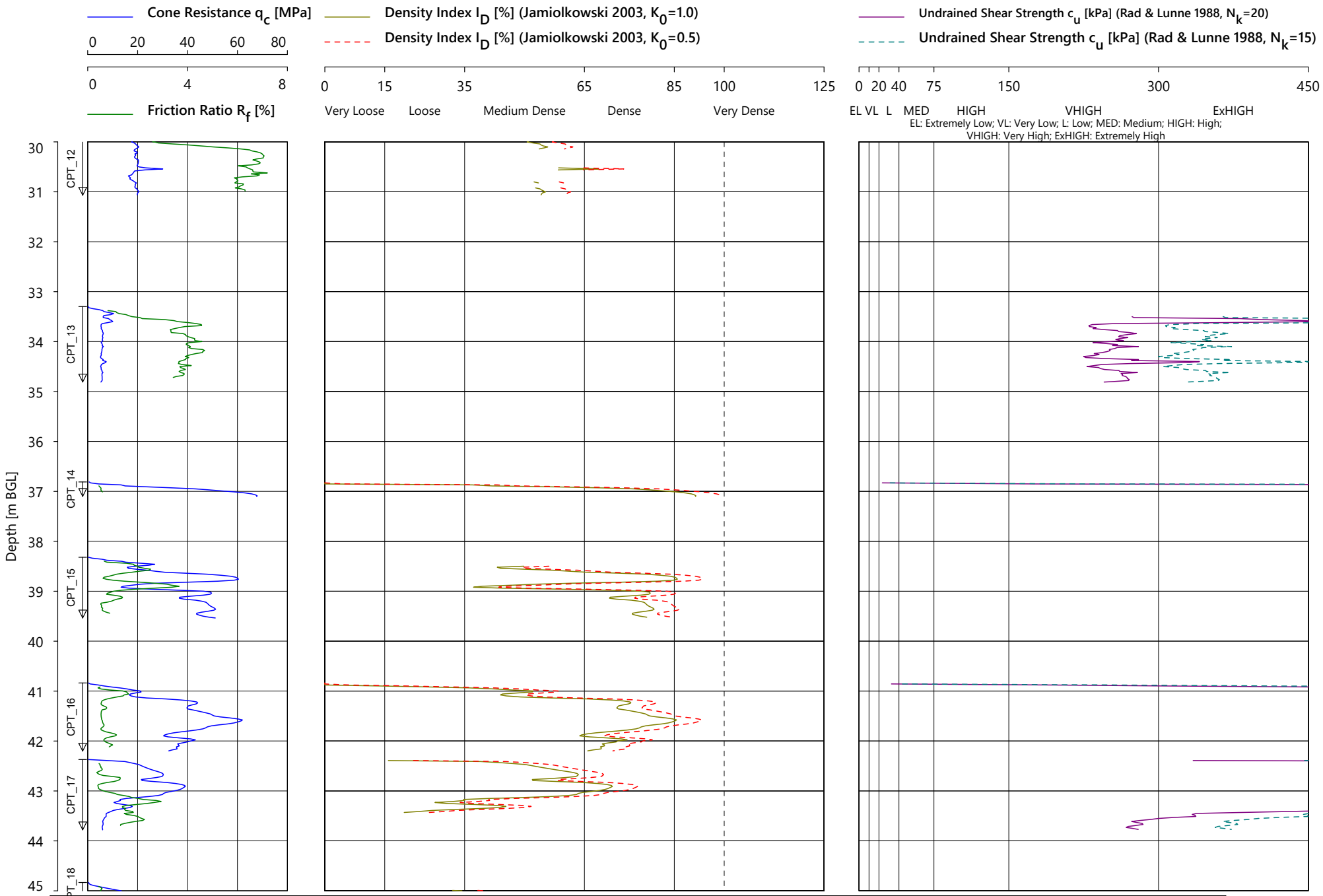

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** DT	**Location :** **BH08**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
CPT Cone : 1706-2662	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 12-Jul-2022	**Water Depth [m] :** 20.8		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:41:55

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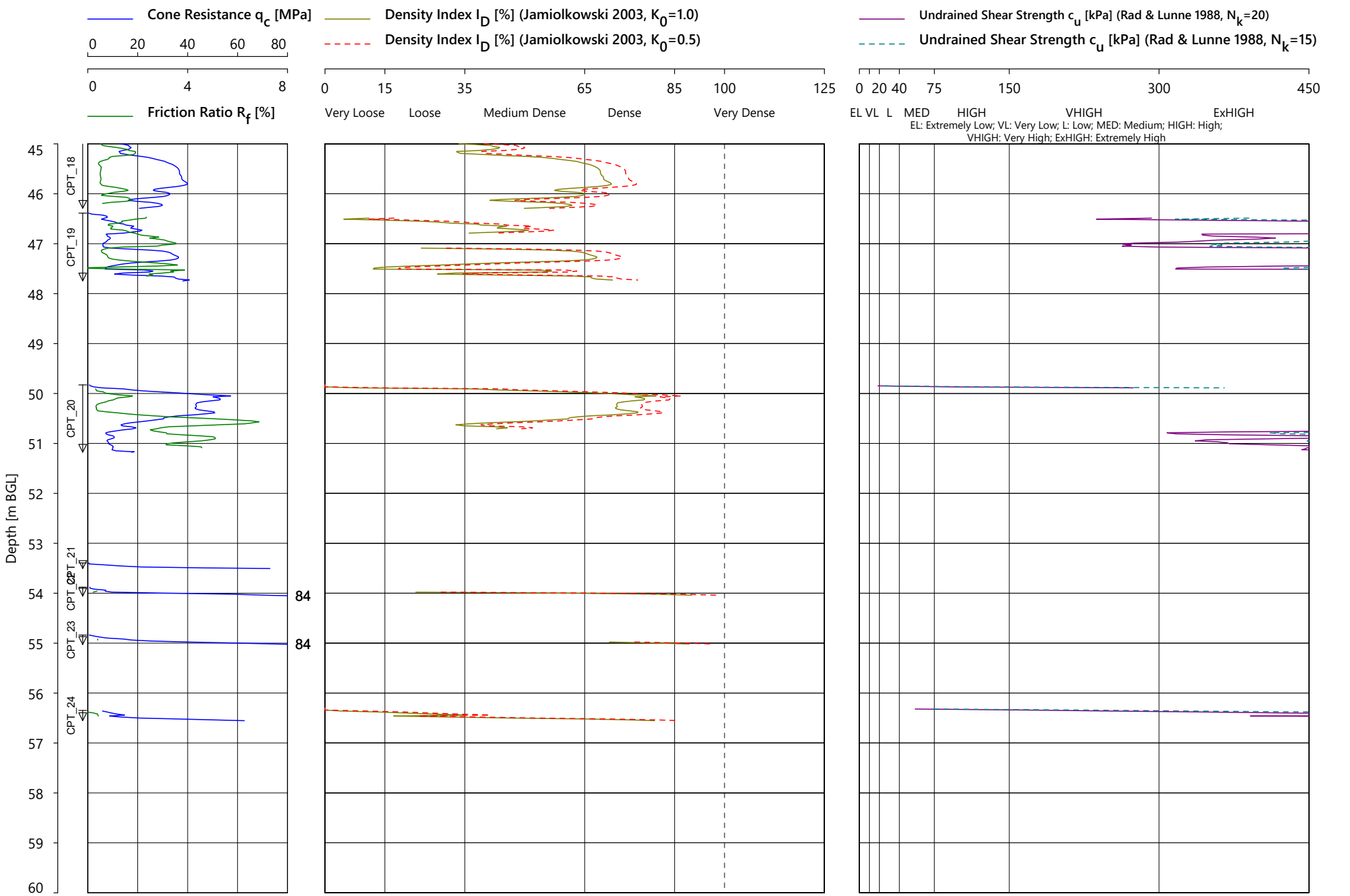

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH08**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 301523.68 **N** 5856887.61 **Bed Level [m LAT]:** -19.40
CPT Cone : 1706-2662	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 12-Jul-2022	**Water Depth [m] :** 20.1	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:41:55

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Location: **BH08**

Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	-0.032	-0.001	-0.002	-0.015	0.002	-0.003	1	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force
CPT_02	-0.045	-0.001	0.001	-0.013	0.002	-0.006	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_03	-0.061	-0.001	0.002	-0.022	0.001	0.001	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_04	-0.063	-0.002	0.000	-0.019	0.003	0.004	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_05	-0.015	-0.003	0.000	-0.031	0.001	-0.002	1	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force
CPT_06	-0.026	-0.004	-0.002	-0.061	0.004	0.001	2	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_07	-0.028	-0.003	-0.004	-0.034	0.002	0.002	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_08	-0.080	-0.001	0.001	-0.033	0.003	-0.005	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_09	-0.037	-0.002	-0.006	-0.009	0.002	0.001	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_10	-0.047	-0.001	-0.006	-0.027	0.002	0.001	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_11	-0.060	0.001	-0.005	-0.021	0.000	0.000	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_12	-0.022	-0.001	0.006	-0.060	0.000	-0.010	2	CP10-CF100PB10SN2	1706-2662	0.750	cone value
CPT_13	-0.029	-0.003	-0.005	-0.009	0.002	0.000	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_14	-0.034	-0.001	-0.005	-0.042	0.004	-0.001	2	CP10-CF100PB10SN2	1706-2662	0.750	danger of buckling
CPT_15	-0.046	0.000	-0.005	-0.045	0.002	0.001	2	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force
CPT_16	-0.015	0.000	-0.003	-0.040	0.001	-0.001	2	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force
CPT_17	-0.015	-0.001	-0.004	-0.023	0.001	-0.001	1	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_18	-0.007	-0.002	-0.002	-0.037	0.003	0.002	2	CP10-CF100PB10SN2	1706-2662	0.750	end depth reached
CPT_19	-0.011	-0.001	-0.003	-0.083	0.008	-0.001	2	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force
CPT_20	-0.070	0.005	0.000	0.005	0.006	-0.004	2	CP10-CF100PB10SN2	1706-2662	0.750	max. penetration force

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:19

Location: **BH08**

Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_21	-0.002	0.008	0.003	-0.015	0.003	-0.008	1	CP10-CF100PB10SN2	1706-2662	0.750	cone value
CPT_22	-0.078	0.014	0.004	0.082	-0.004	-0.009	2	CP10-CF100PB10SN2	1706-2662	0.750	cone value
CPT_23	-0.012	0.012	0.005	0.005	-0.001	-0.011	1	CP10-CF100PB10SN2	1706-2662	0.750	cone value
CPT_24	0.006	0.012	0.003	0.008	-0.002	-0.009	2	CP10-CF100PB10SN2	1706-2662	0.750	cone value

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

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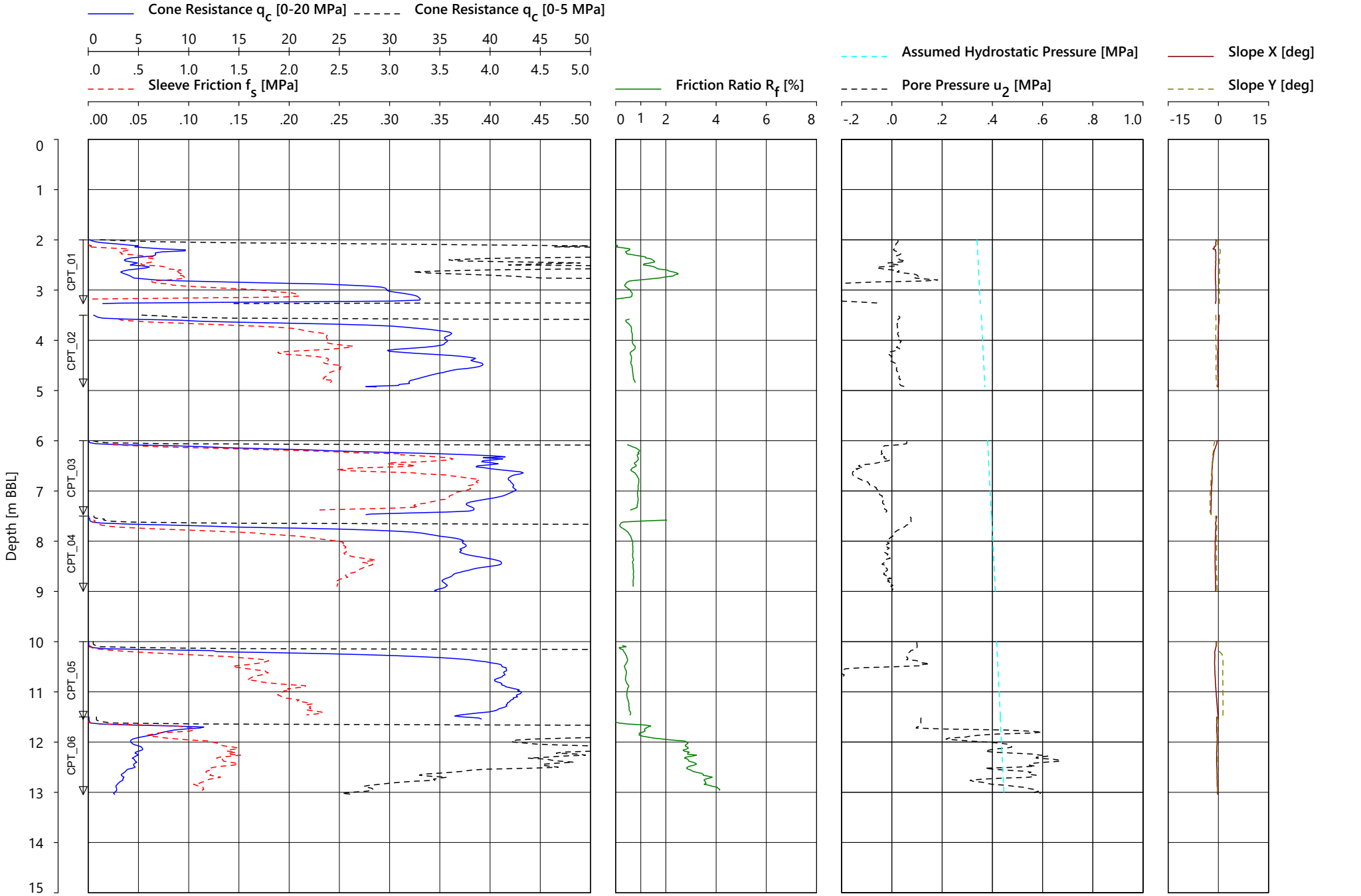

Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	17-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	31.9		

Location : **BH09**
Coordinates : **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

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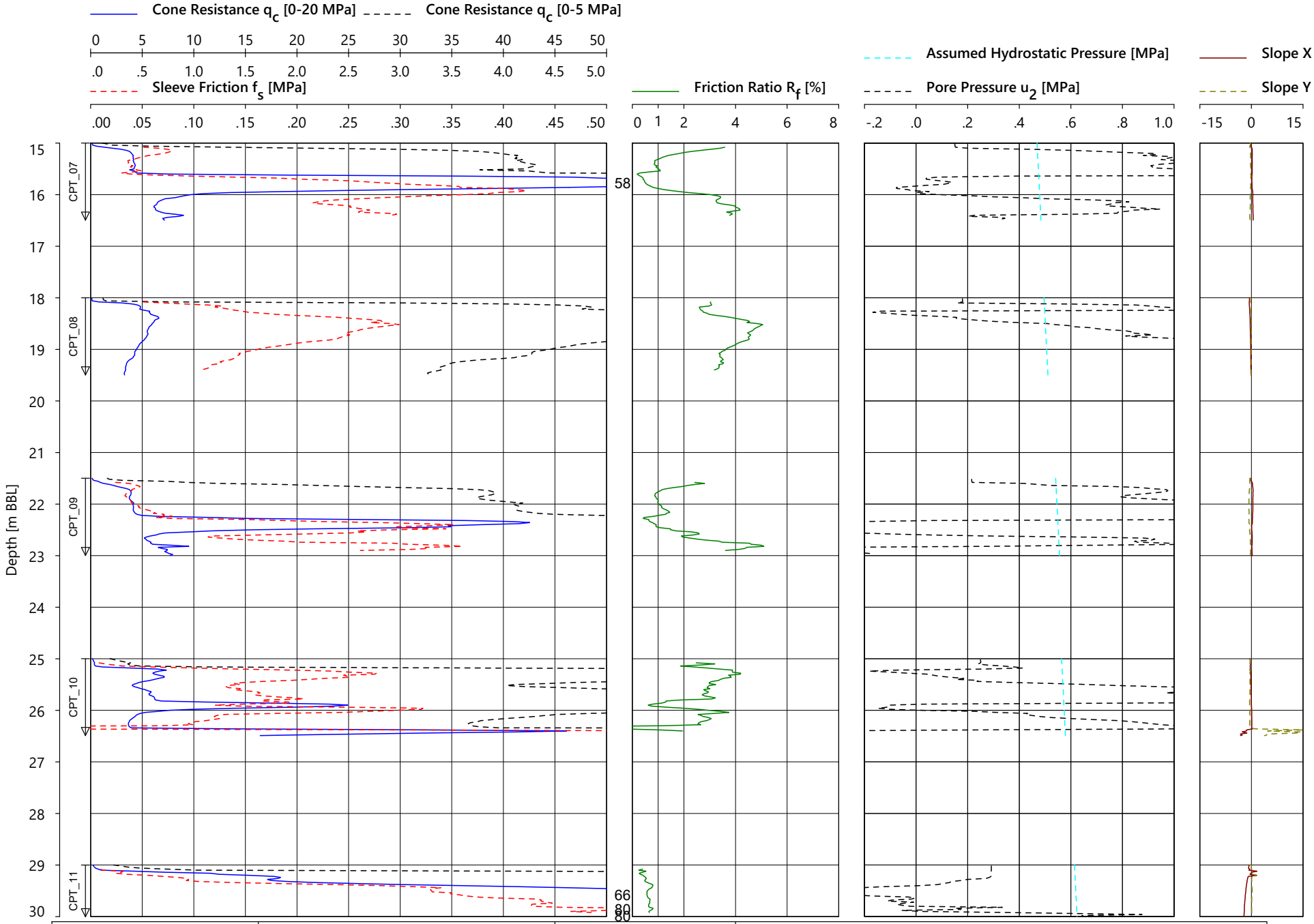
Plate 3.59



Piezocone Measured Data				**Location :**	**BH09**
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Coordinates :**	**E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Project :**	210194
Date of Test :	18-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
		Water Depth [m] :	31.9	**Client :**	Sure Partners Limited
		Operator :	CD		
		Compiled by :	Onboard		
		Checked by :	JD		

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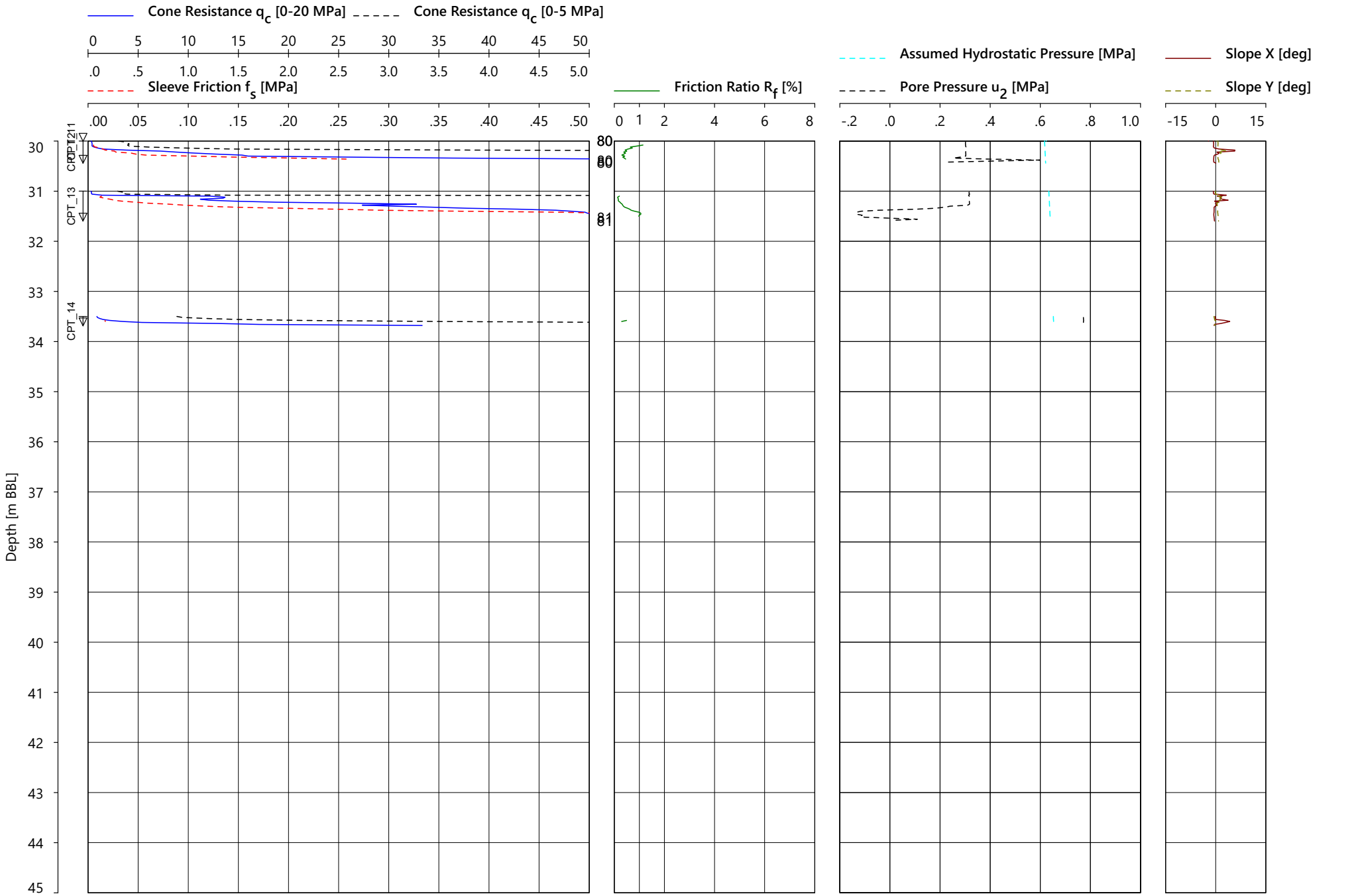

Piezocone Measured Data			**Location :** **BH09**
CPT Rig ID : GB20	**Stop Criterion :** see separate report	**Operator :** TL	**Coordinates :** **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
CPT Cone : 1706-2658	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 18-Jun-2022	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
	Water Depth [m] : 32.4		**Client :** Sure Partners Limited

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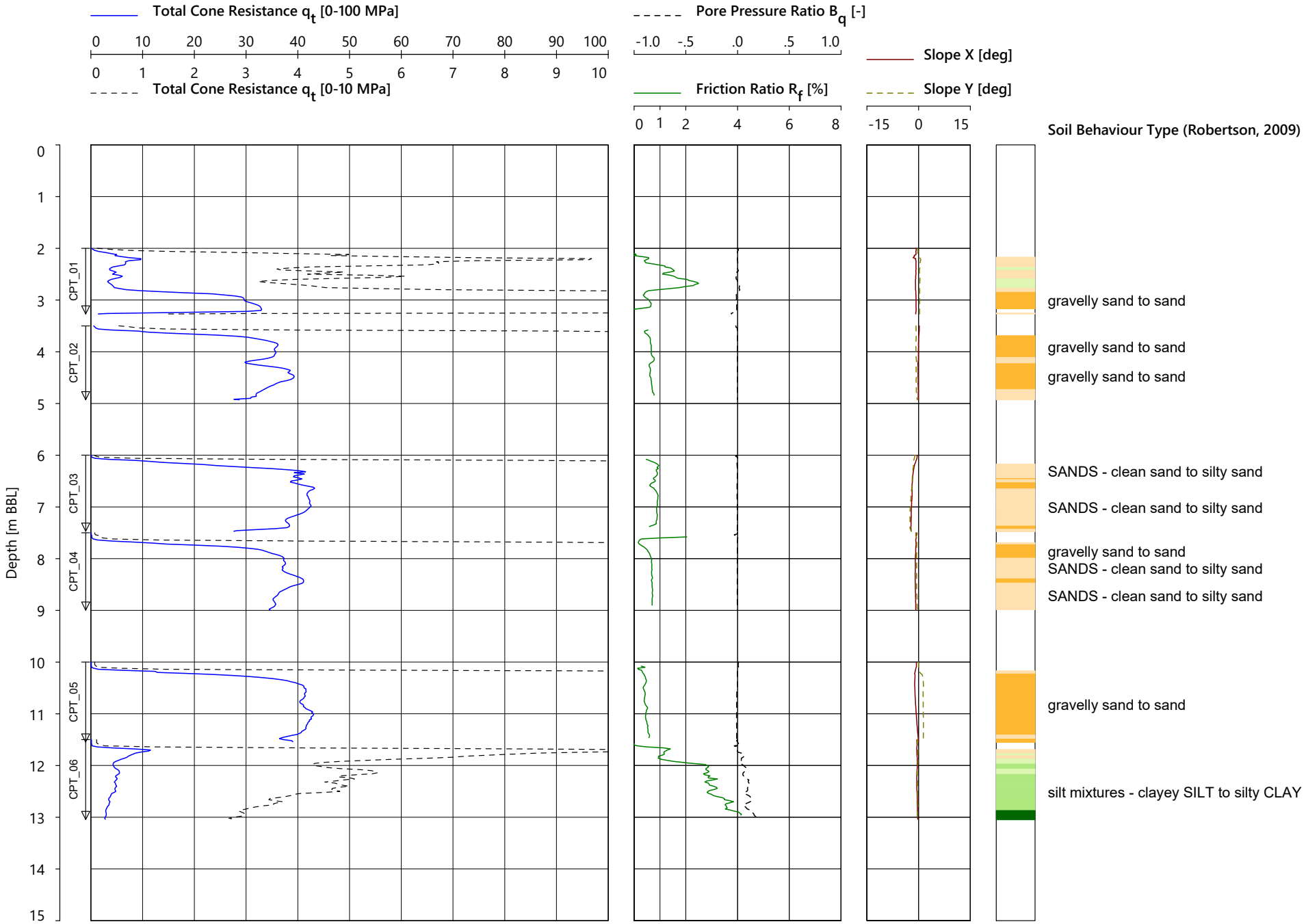
Plate 3.61



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	17-Jun-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	31.9

Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : BH09

Coordinates : **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

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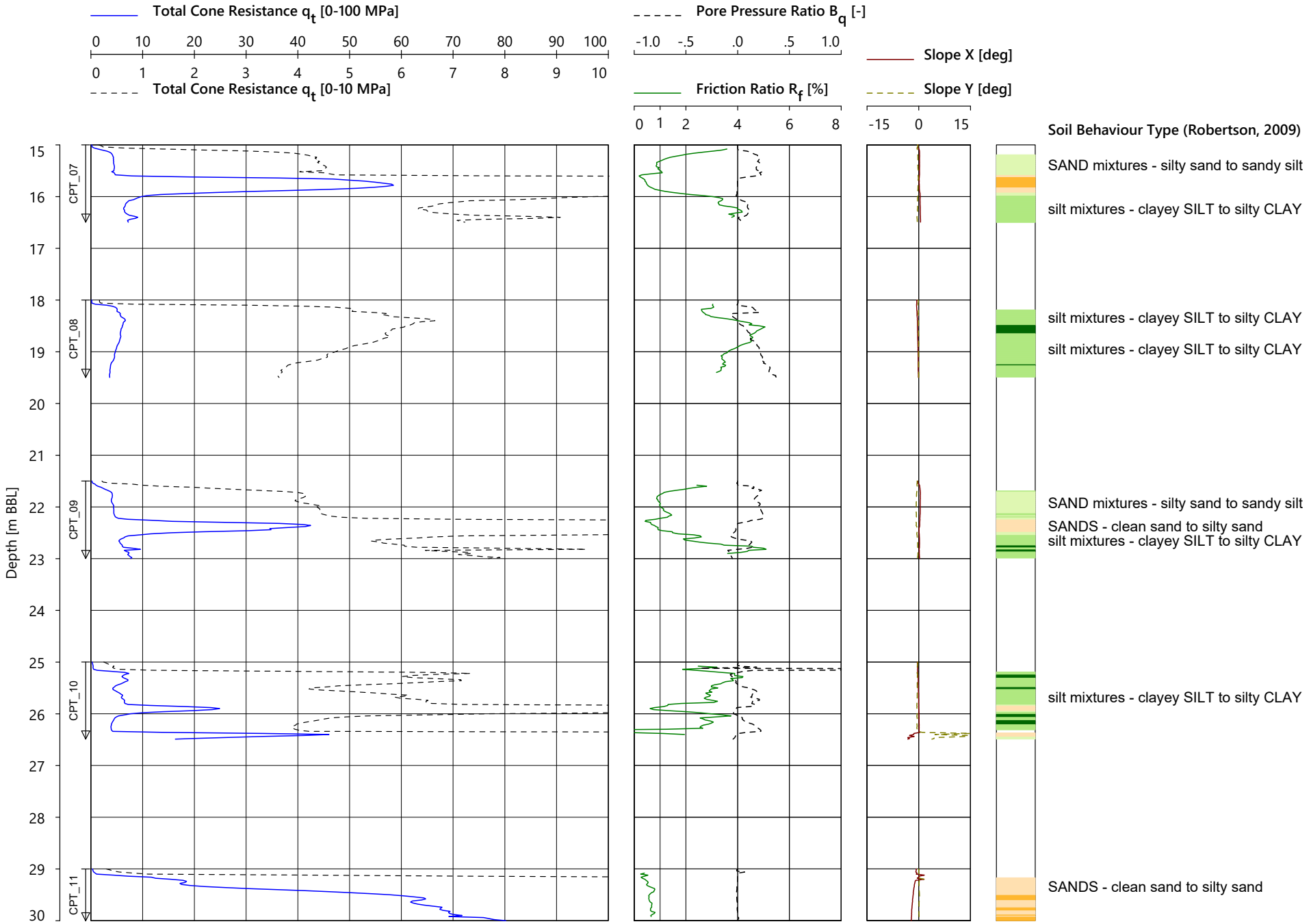

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2658
Date of Test :	18-Jun-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	31.9
Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : BH09

Coordinates : **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

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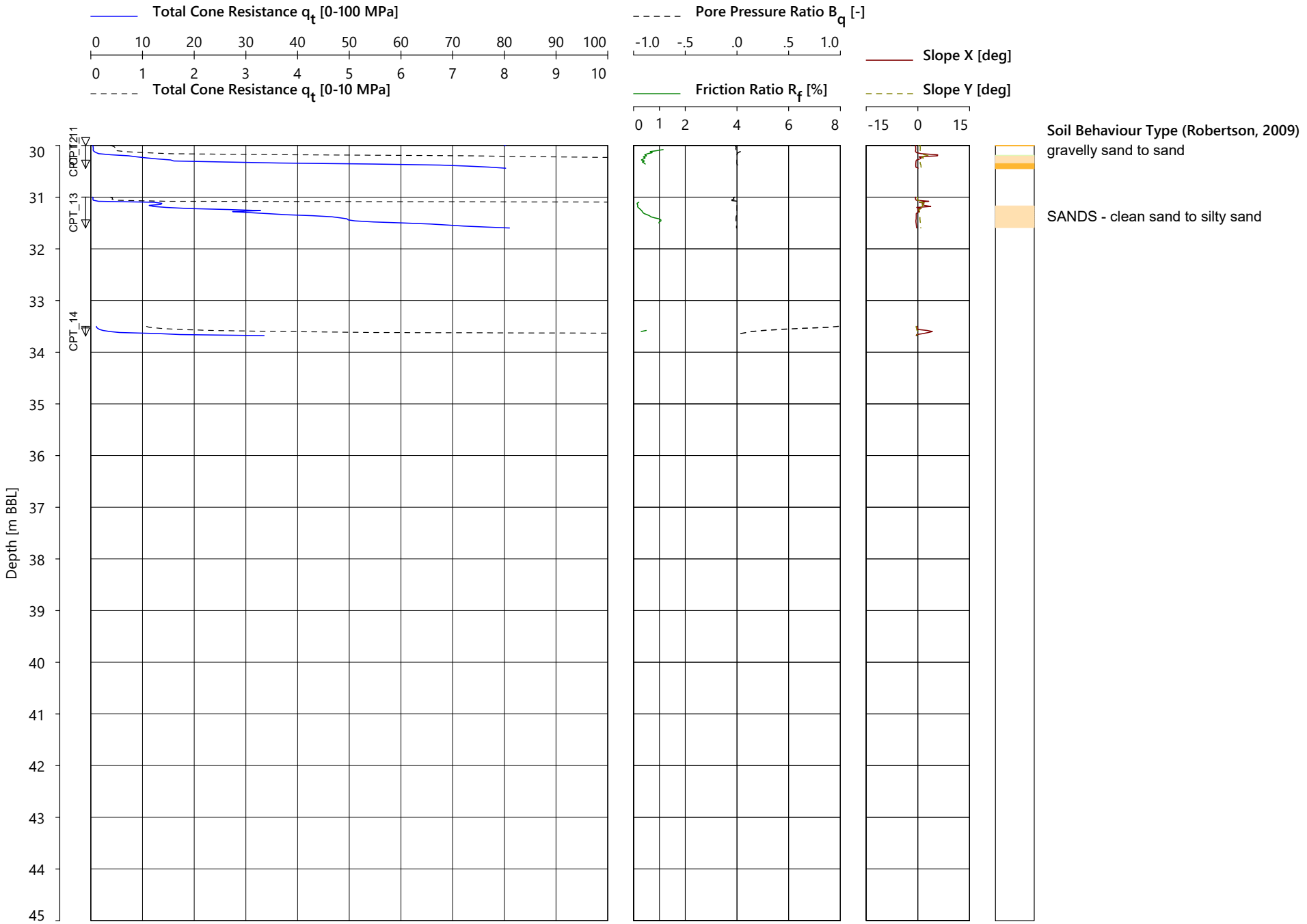
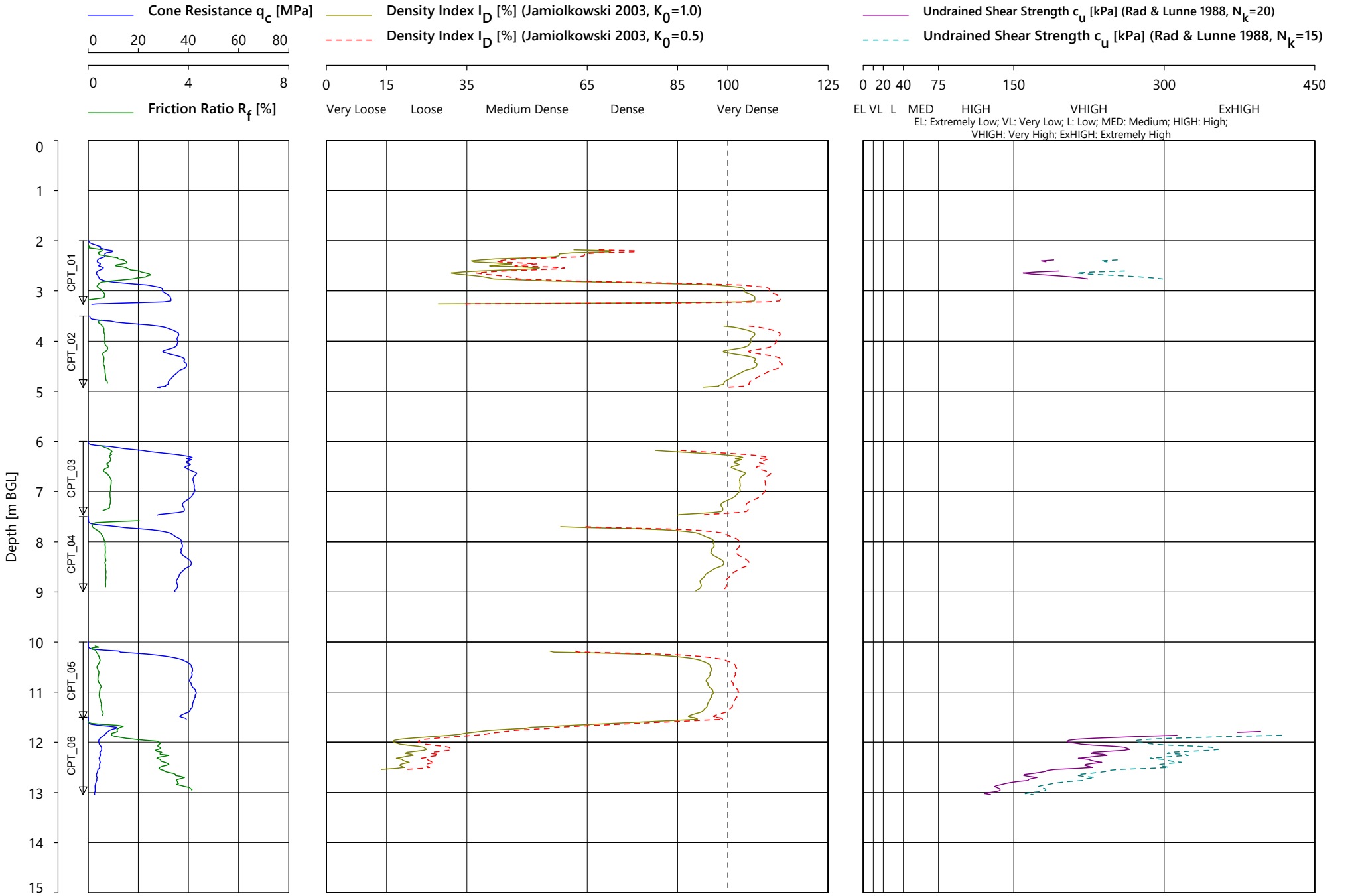


Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	18-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	32.4		

Location : **BH09**
Coordinates : **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:50



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH09**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** TL	**Coordinates :** **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 17-Jun-2022	**Water Depth [m] :** 31.9	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

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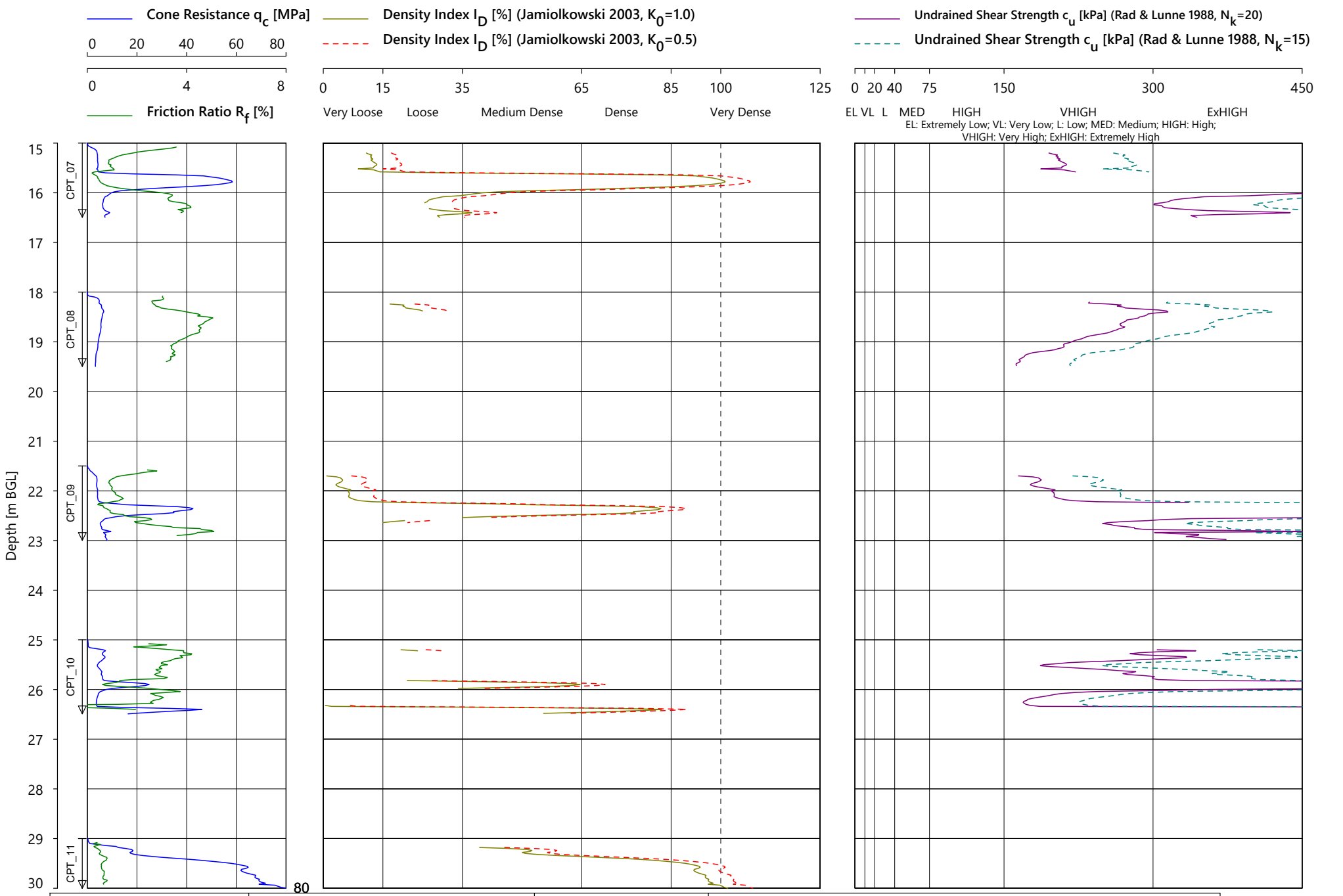

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location : BH09**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 18-Jun-2022	**Water Depth [m] :** 31.9		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

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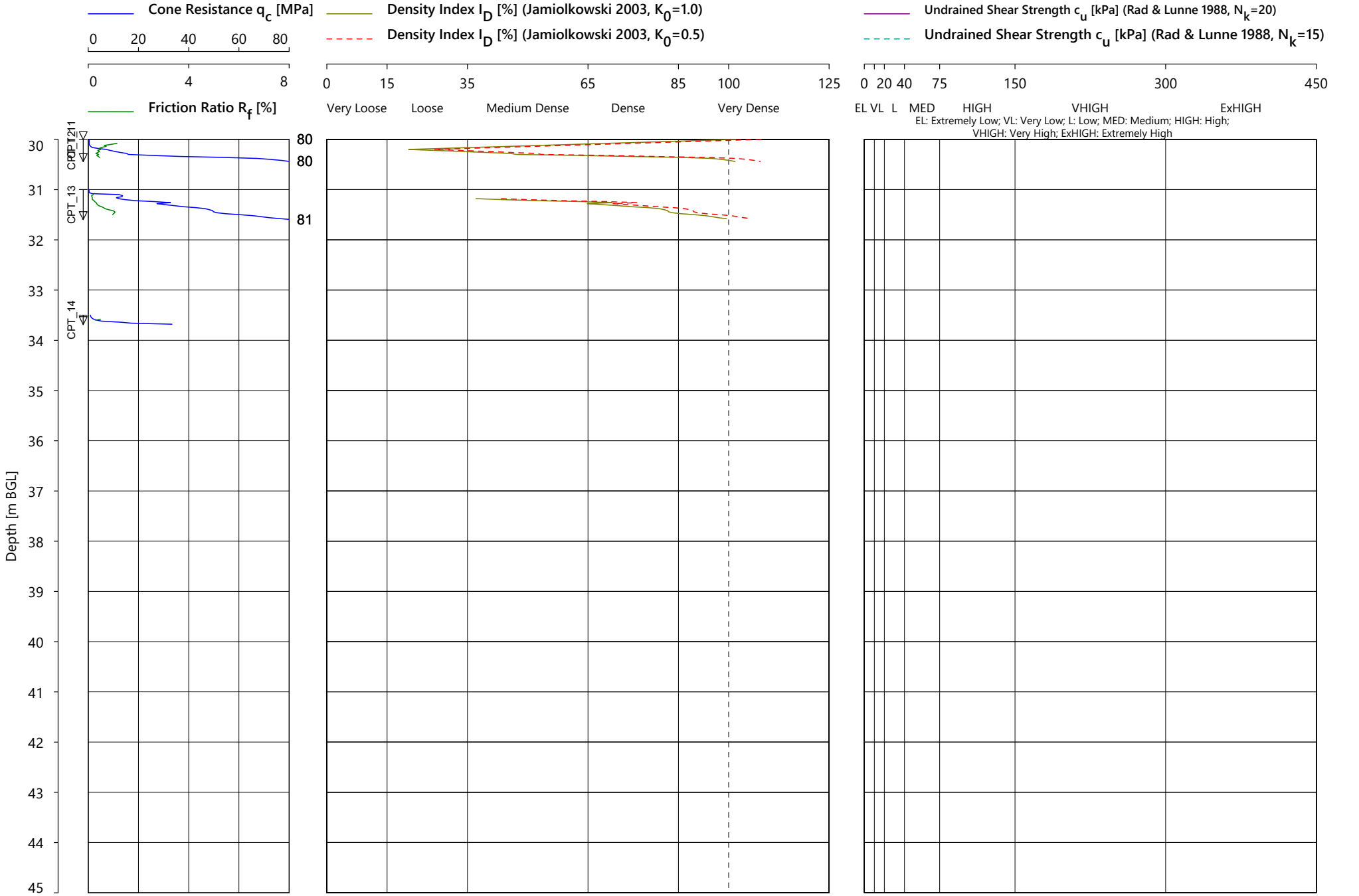


Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH09**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** TL	**Coordinates :** **E** 300261.50 **N** 5853958.52 **Bed Level [m LAT]:** -30.50
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 18-Jun-2022	**Water Depth [m] :** 32.4	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

Location: **BH09**

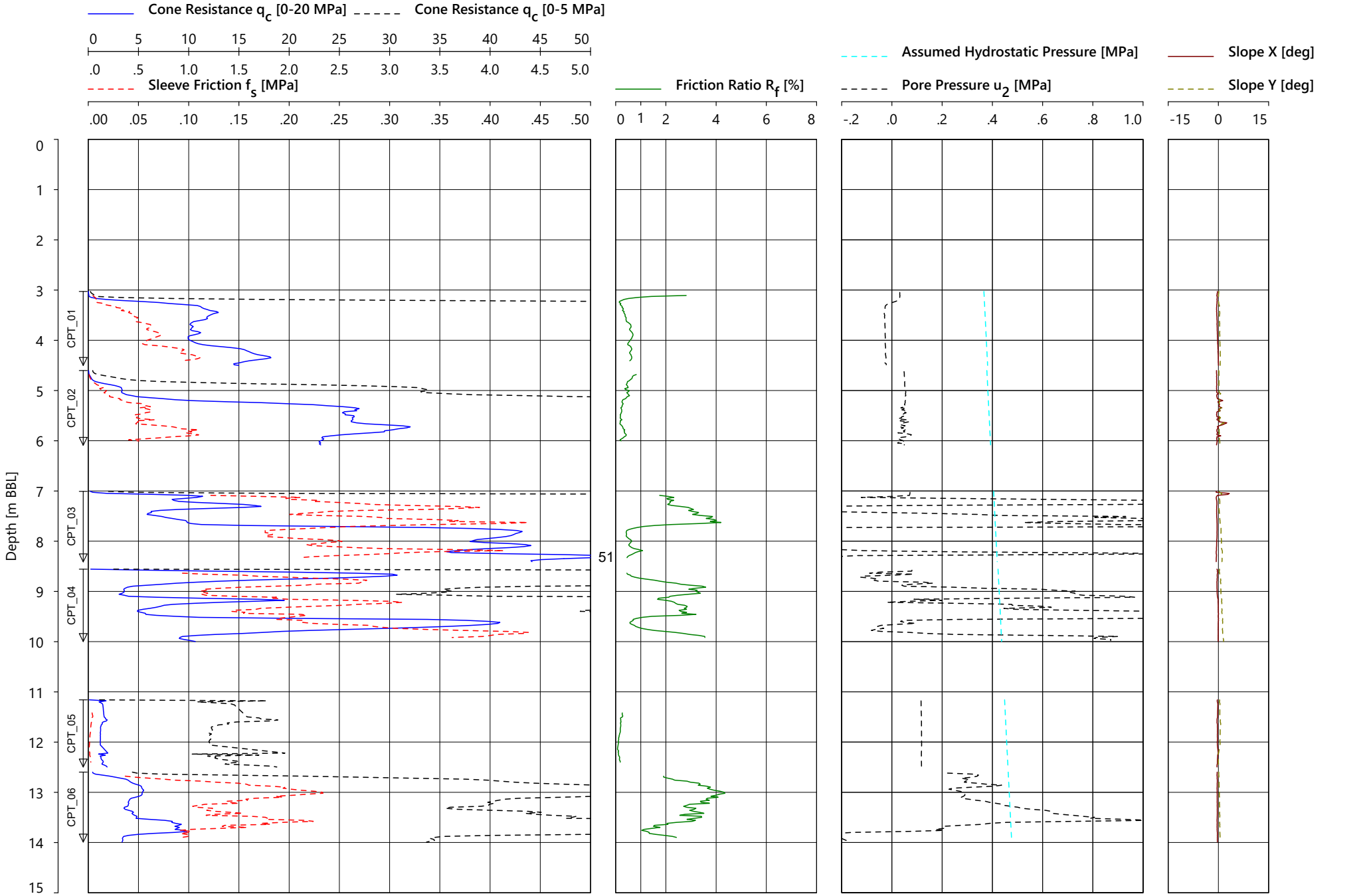
Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	0.108	0.023	0.001	-0.033	0.004	-0.005	1	CP10-CF100PB10SN2	1706-2663	0.750	max. friction value
CPT_02	0.067	0.027	-0.004	-0.052	0.002	-0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	max. penetration force
CPT_03	0.059	0.028	-0.006	-0.032	0.001	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_04	0.070	0.027	-0.006	-0.027	0.001	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_05	-0.033	0.000	0.004	-0.034	0.000	-0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_06	-0.031	-0.001	0.003	-0.003	0.000	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_07	-0.021	-0.002	-0.001	-0.025	0.001	0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_08	-0.030	-0.002	0.000	-0.002	0.000	0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_09	-0.017	-0.003	0.000	-0.047	0.003	0.003	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_10	-0.034	-0.002	0.000	-0.117	0.040	0.002	NC	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_11	-0.117	0.038	0.002	-0.002	-0.001	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_12	-0.064	0.038	0.003	0.017	0.001	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	max. penetration force
CPT_13	-0.023	0.038	0.004	-0.049	0.001	-0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	max. penetration force
CPT_14	-0.045	0.038	0.006	0.014	0.000	-0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	max. penetration force

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:10

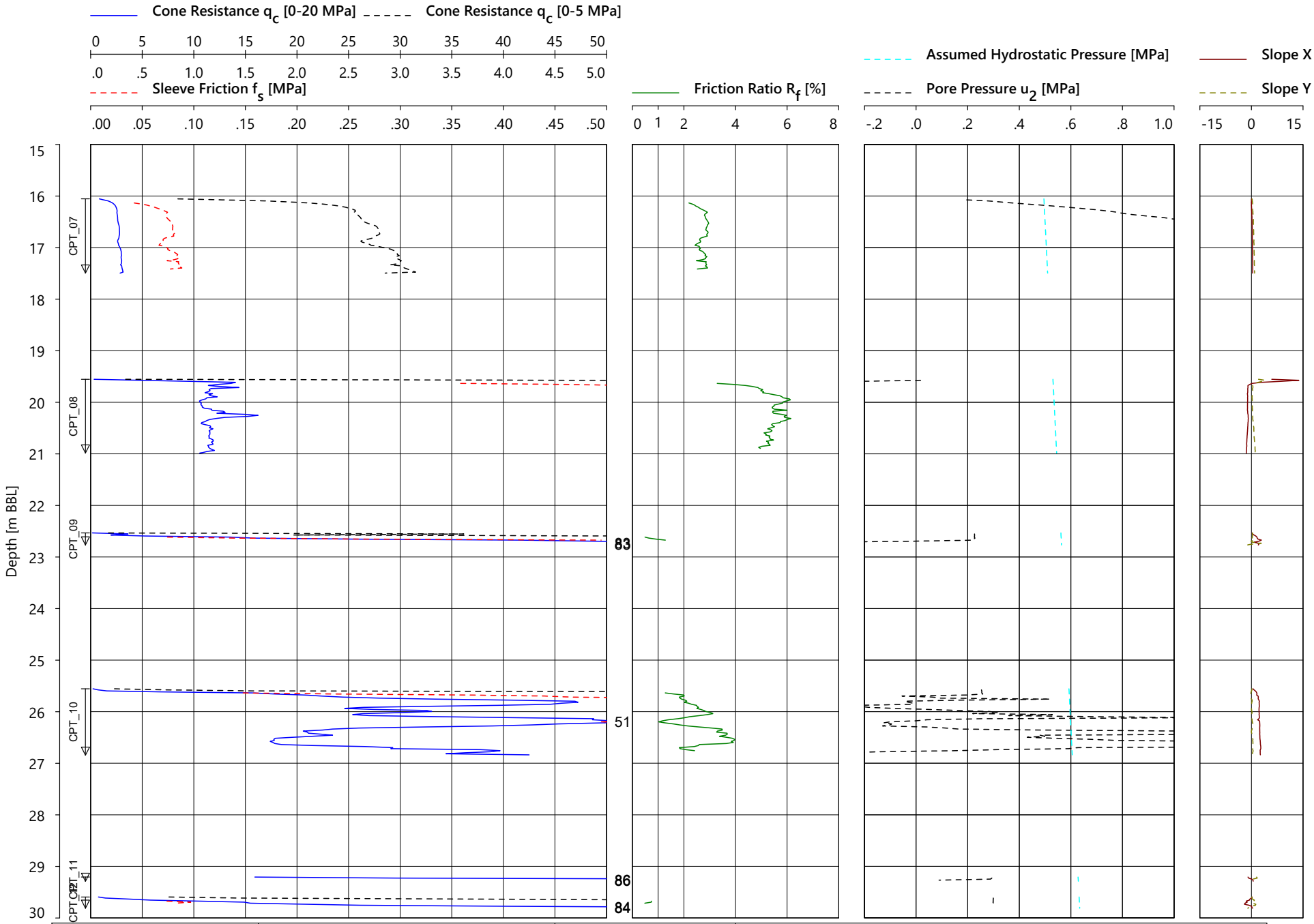


Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	30-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	33.6		

Location : **BH10**
Coordinates : **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:50

Plate 3.69



Piezocone Measured Data				**Location :**	**BH10**
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Coordinates :**	**E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Project :**	210194
Date of Test :	30-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
		Water Depth [m] :	33.5	**Client :**	Sure Partners Limited
		Operator :	CD		
		Compiled by :	Onboard		
		Checked by :	JD		

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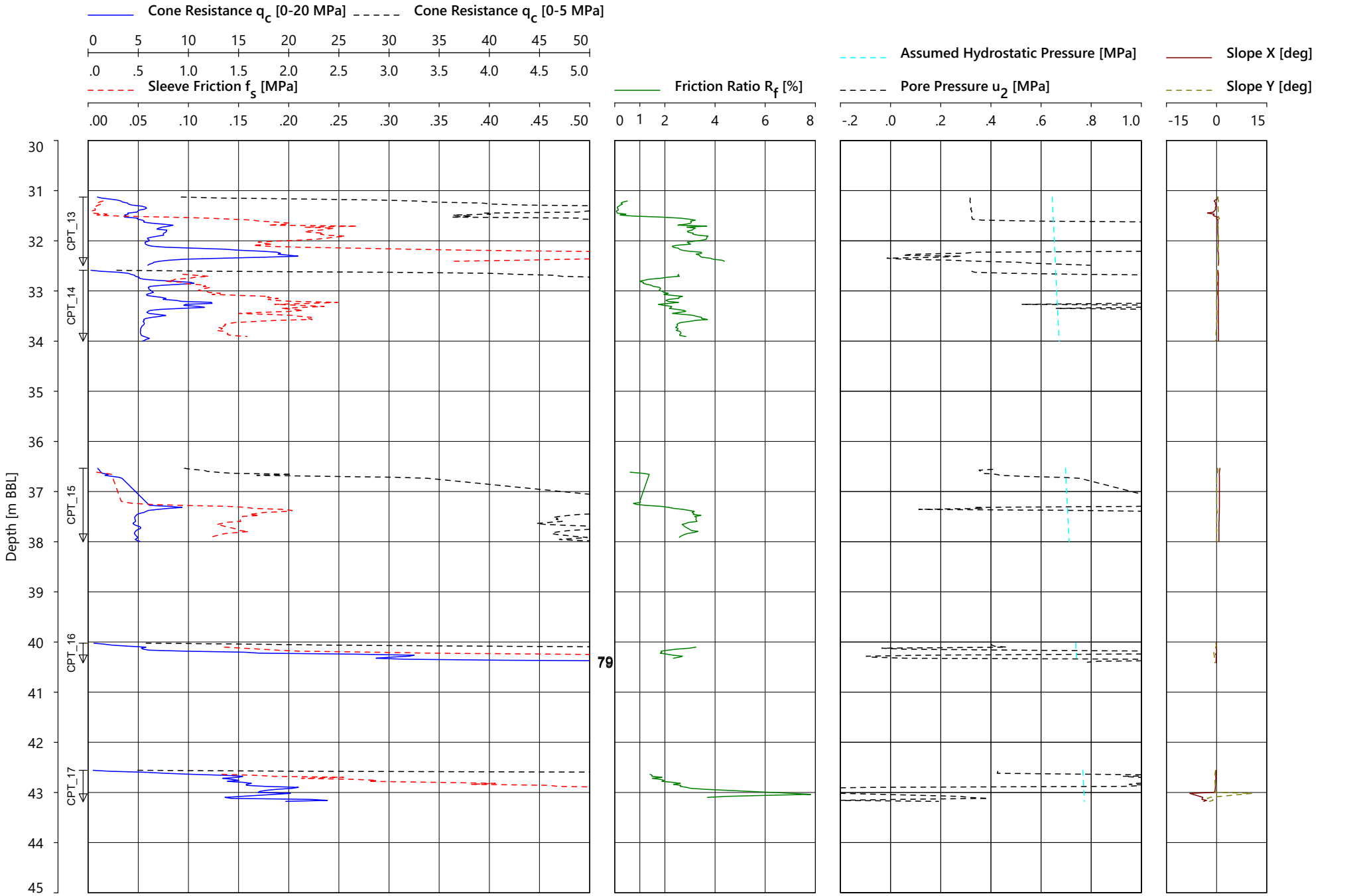

Piezocone Measured Data						Location :	BH10		
CPT Rig ID :	GB20	Stop Criterion :	see separate report	Operator :	TL	Coordinates :	E 301945.77	N 5852228.48	Bed Level [m LAT]: -32.50
CPT Cone :	1706-2659	Application Class / Type :	see class report	Compiled by :	Onboard	Project :	210194		
Date of Test :	01-Jul-2022	Assumed Soil Unit Weight :	19.0 [kN/m^3]	Checked by :	JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022			
		Water Depth [m] :	33.3			Client :	Sure Partners Limited		

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:50

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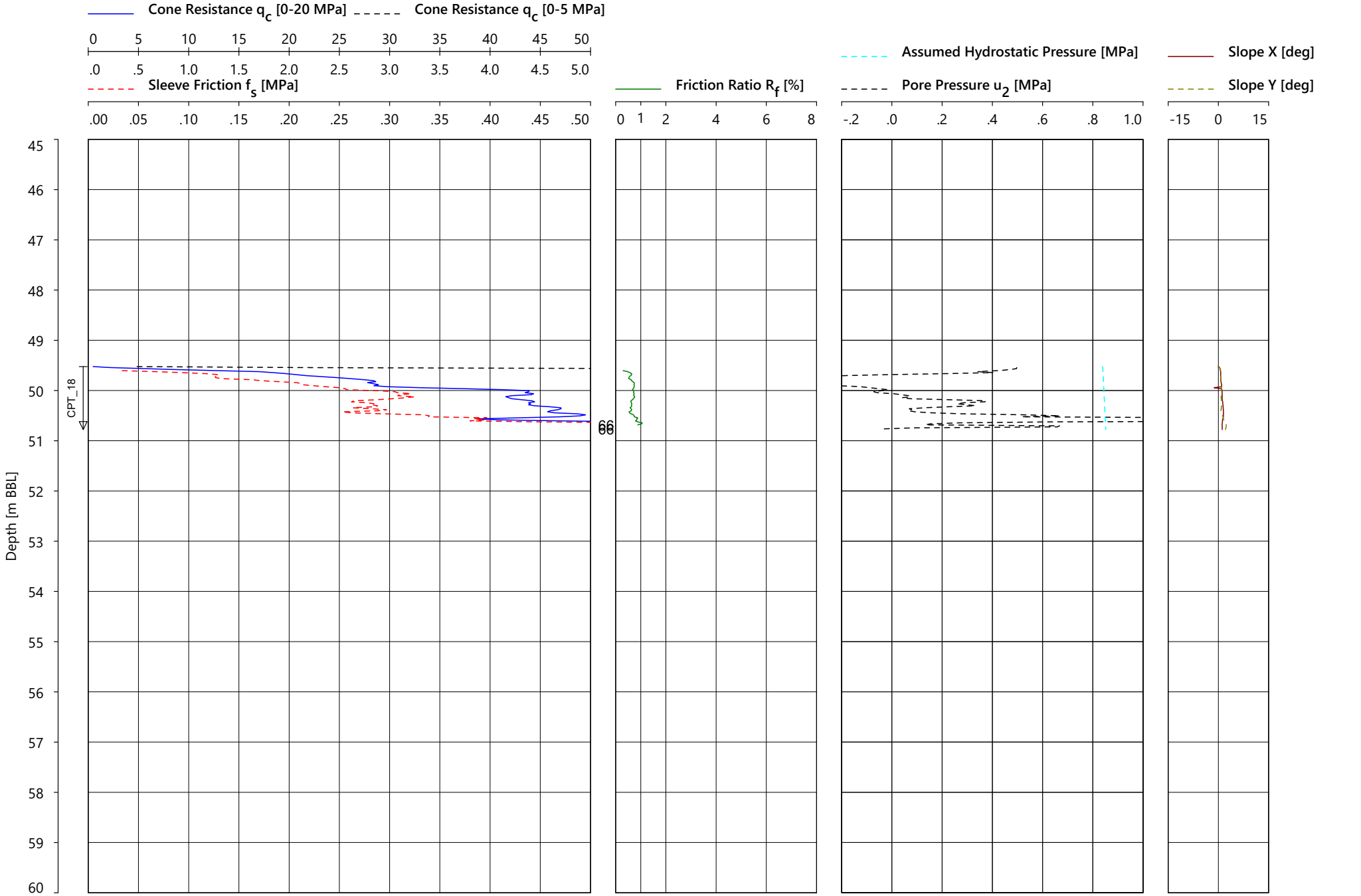
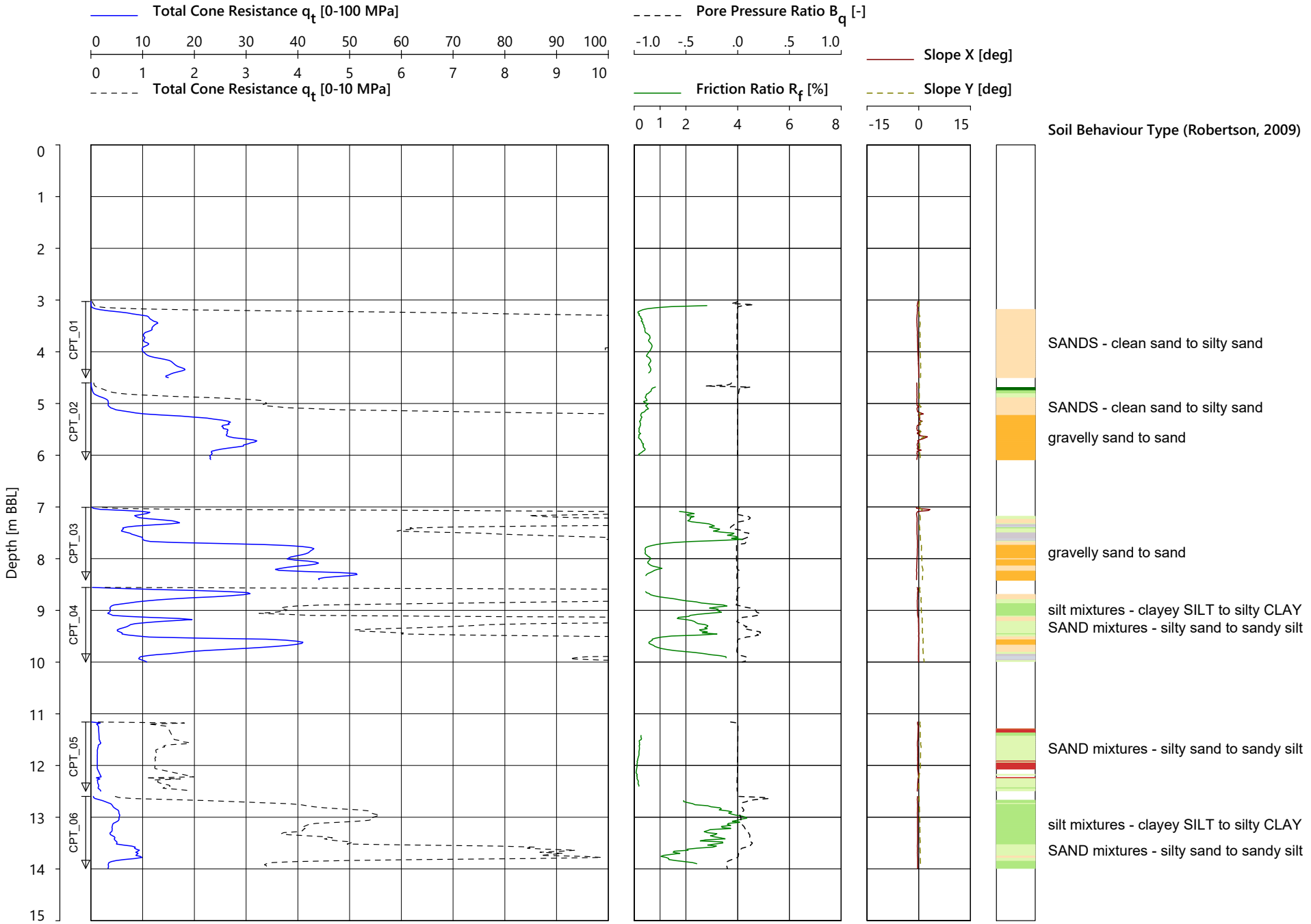


Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	01-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	34.4		

Location : **BH10**
Coordinates : **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:50

Plate 3.72



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2658
Date of Test :	30-Jun-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	33.6
Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : BH10

Coordinates : **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50

Project : 210194

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Client : Sure Partners Limited

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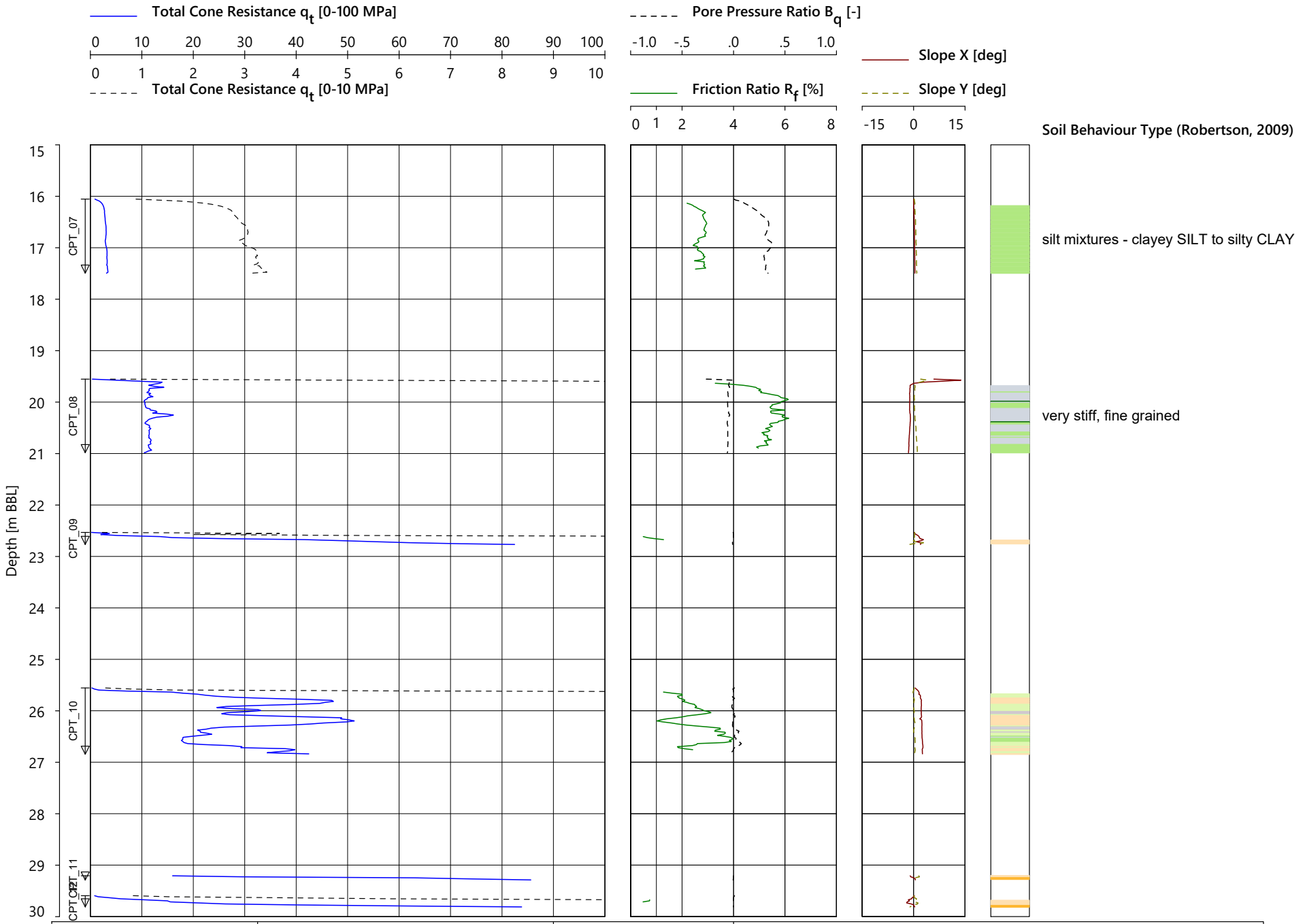
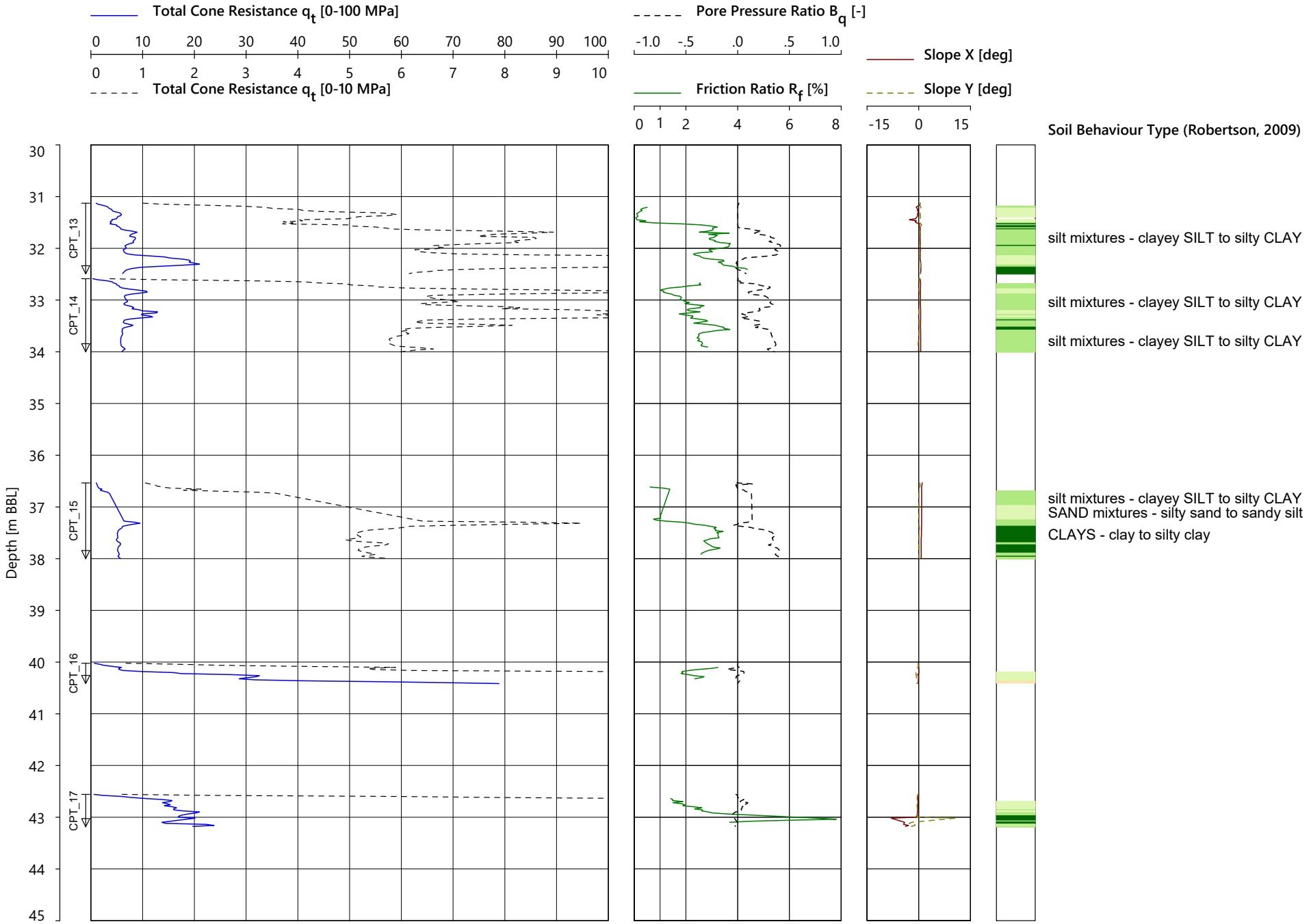


Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	30-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	33.5		

Location : BH10
Coordinates : E 301945.77 N 5852228.48 **Bed Level [m LAT]:** -32.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

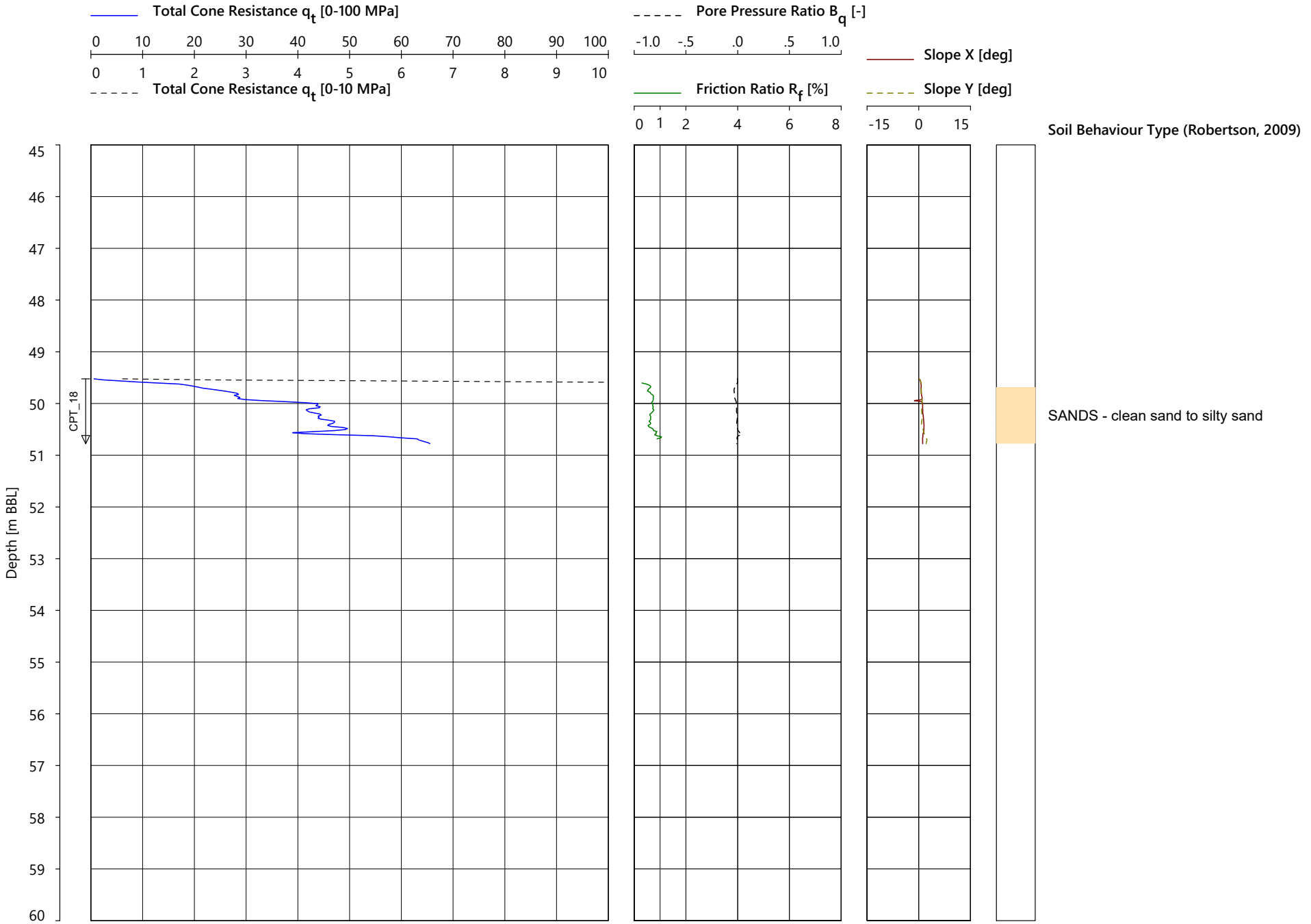
GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:56



Piezocone Derived Data					
CPT Rig ID :	GB20	Stop Criterion :	see separate report	Operator :	TL
CPT Cone :	1706-2659	Application Class / Type :	see class report	Compiled by :	Onboard
Date of Test :	01-Jul-2022	Assumed Soil Unit Weight :	19.0 [kN/m^3]	Checked by :	JD
		Water Depth [m] :	33.3		

Location : BH10
Coordinates : E 301945.77 N 5852228.48 **Bed Level [m LAT]:** -32.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:56



Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	01-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	34.4		

Location : **BH10**
Coordinates : **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

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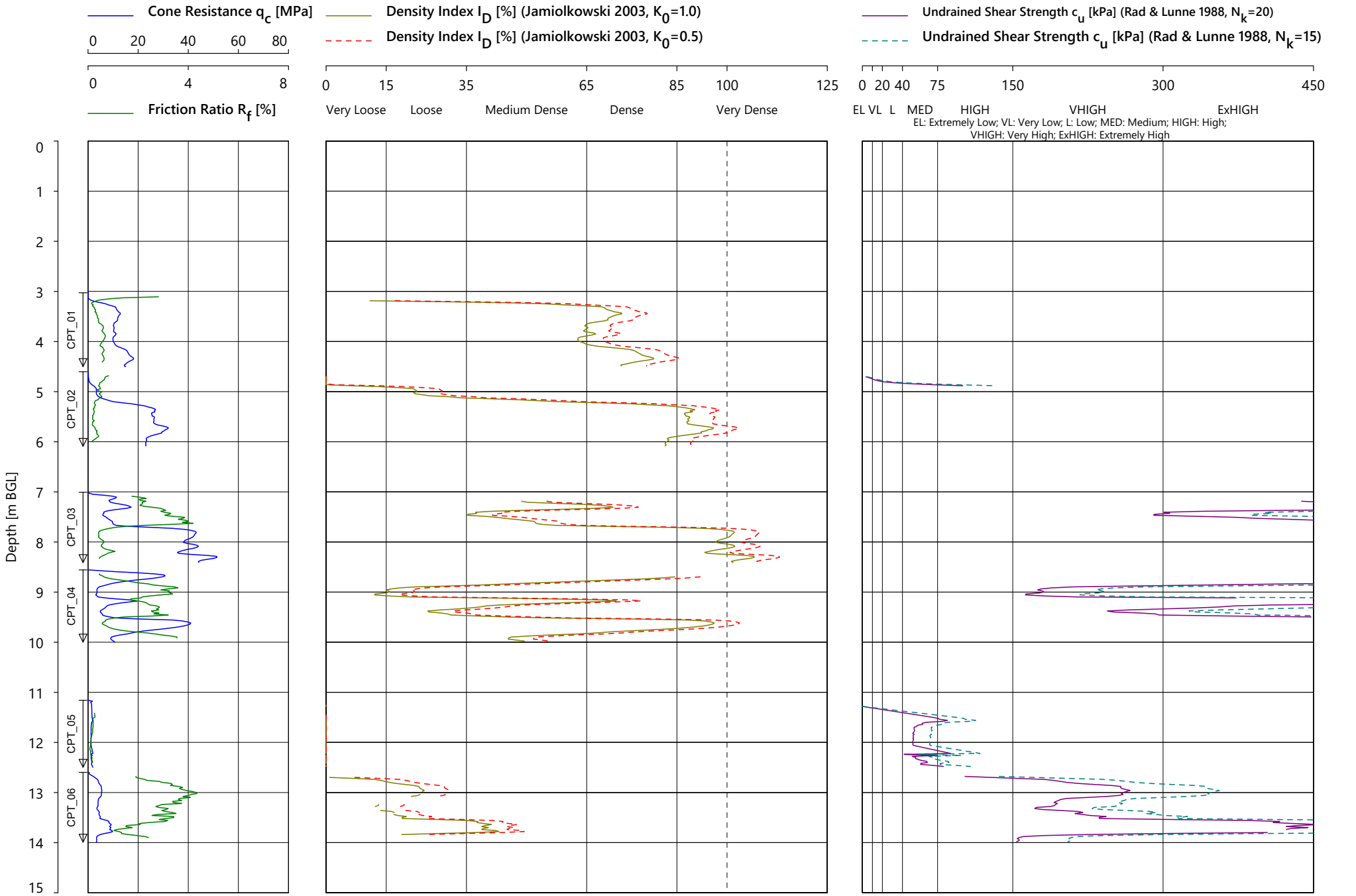
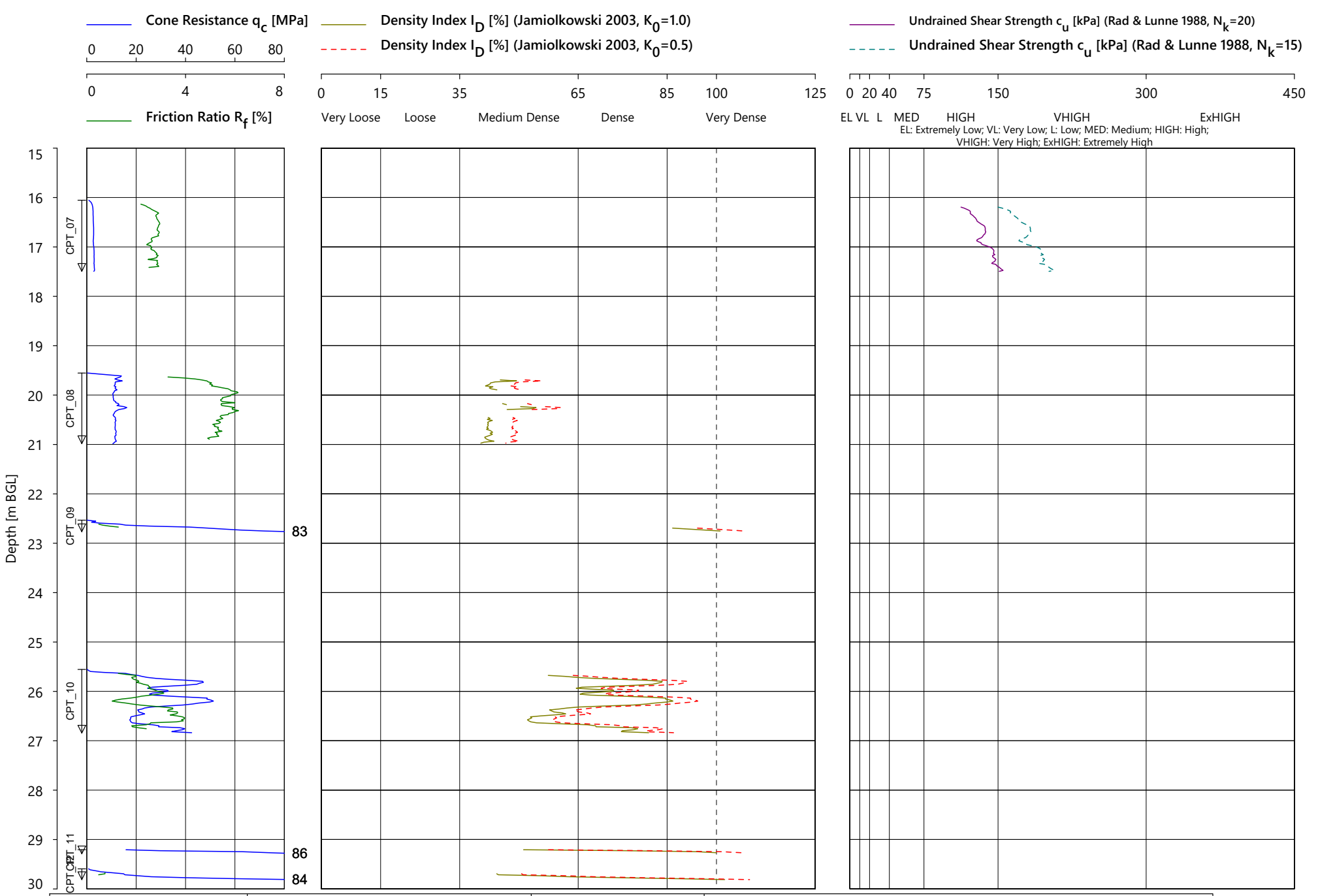


Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** TL	**Location :** BH10
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** E 301945.77 N 5852228.48 **Bed Level [m LAT]:** -32.50
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 30-Jun-2022	**Water Depth [m] :** 33.6		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location :** BH10
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** E 301945.77 N 5852228.48 **Bed Level [m LAT]:** -32.50
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 30-Jun-2022	**Water Depth [m] :** 33.5		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:08

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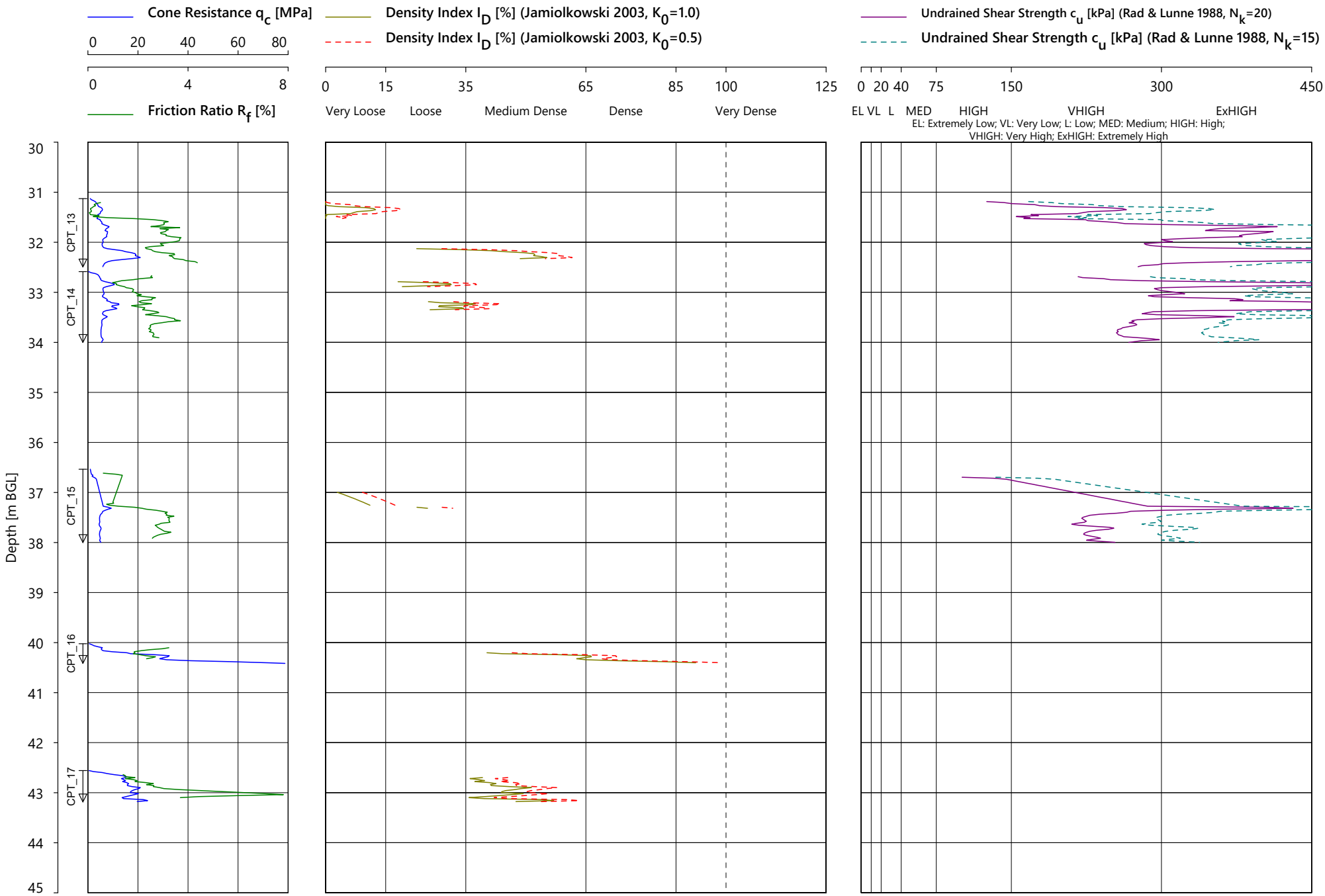

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report **Application Class / Type :** see class report **Assumed Soil Unit Weight :** 19.0 [kN/m^3] **Water Depth [m] :** 33.3	**Operator :** TL **Compiled by :** Onboard **Checked by :** JD	**Location : BH10** **Coordinates :** **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50 **Project :** 210194 F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022 **Client :** Sure Partners Limited
CPT Rig ID : GB20 **CPT Cone :** 1706-2659 **Date of Test :** 01-Jul-2022			

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:09

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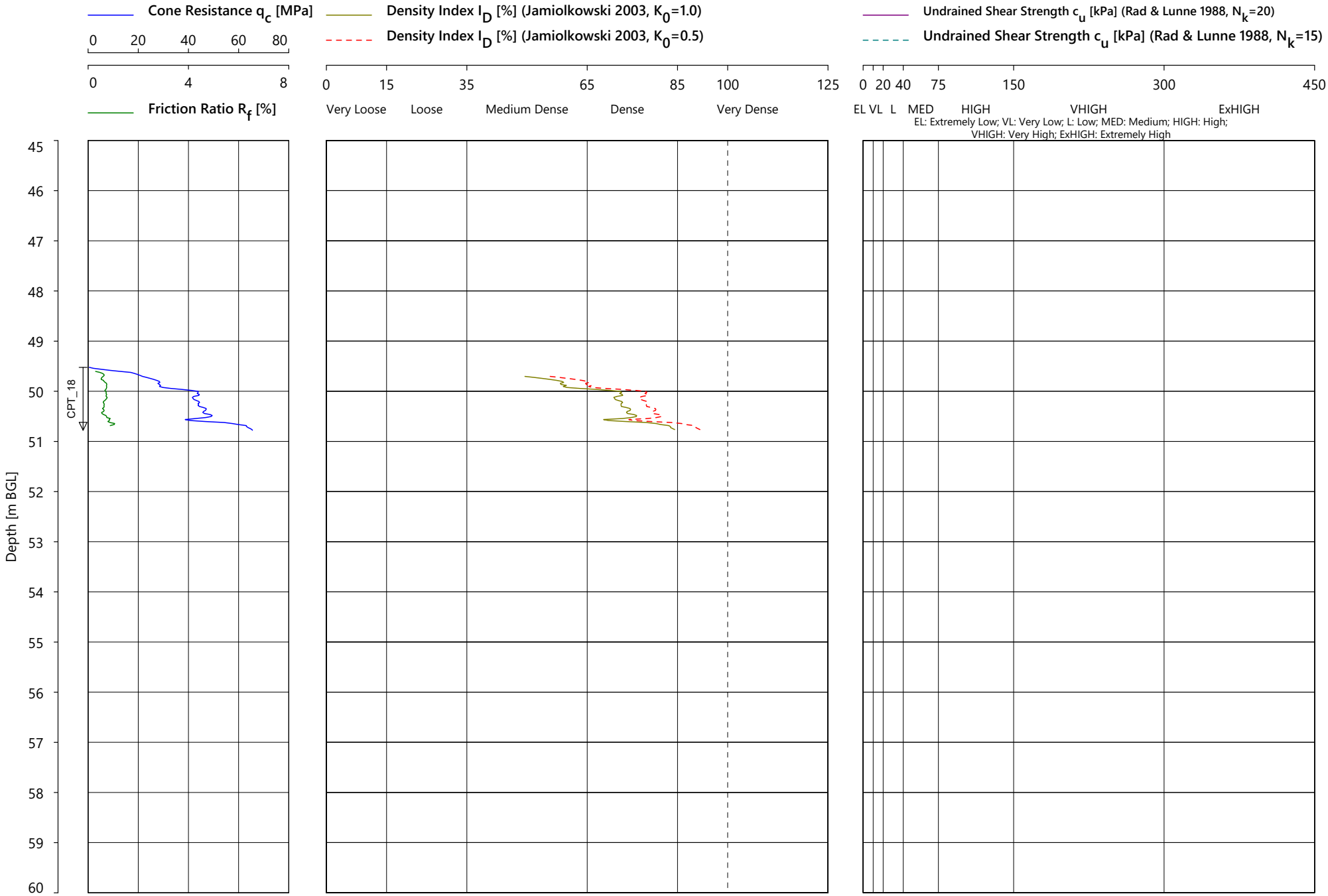

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location : BH10**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 301945.77 **N** 5852228.48 **Bed Level [m LAT]:** -32.50
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 01-Jul-2022	**Water Depth [m] :** 34.4		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:09

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Location: **BH10**

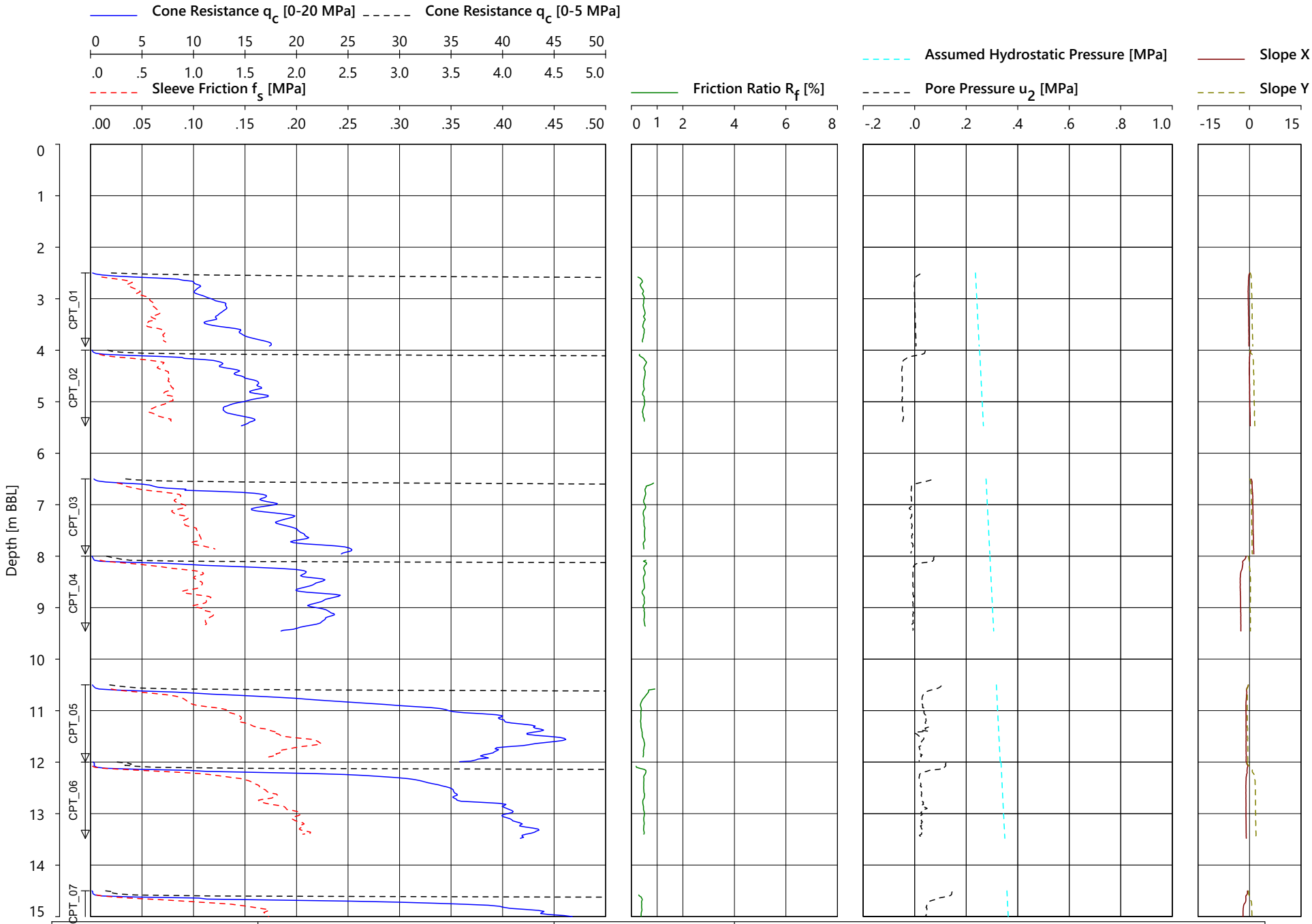
Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	0.001	0.041	0.000	-0.009	0.002	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_02	-0.021	0.043	0.001	0.005	0.000	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_03	0.002	0.042	0.005	-0.057	0.002	-0.004	2	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_04	-0.034	0.043	0.003	-0.015	-0.001	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_05	0.001	0.039	-0.008	-0.008	0.001	0.009	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_06	-0.016	0.041	0.002	-0.080	0.002	-0.001	2	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_07	-0.089	0.043	0.001	0.013	0.000	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_08	-0.085	0.043	0.000	-0.024	-0.003	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_09	0.008	0.010	-0.006	-0.021	0.003	0.000	1	CP10-CF100PB10SN2	1706-2659	0.750	cone value
CPT_10	-0.005	0.012	-0.008	-0.006	-0.003	0.005	1	CP10-CF100PB10SN2	1706-2659	0.750	max. penetration force
CPT_11	0.006	0.009	-0.005	0.024	0.002	0.000	1	CP10-CF100PB10SN2	1706-2659	0.750	cone value
CPT_12	0.033	0.010	-0.004	0.006	0.000	-0.002	1	CP10-CF100PB10SN2	1706-2659	0.750	cone value
CPT_13	0.026	0.010	-0.006	-0.003	0.000	0.001	1	CP10-CF100PB10SN2	1706-2659	0.750	end depth reached
CPT_14	0.018	0.010	-0.008	-0.027	0.002	0.002	1	CP10-CF100PB10SN2	1706-2659	0.750	end depth reached
CPT_15	0.039	0.010	-0.003	-0.006	0.001	0.000	1	CP10-CF100PB10SN2	1706-2659	0.750	end depth reached
CPT_16	0.033	0.011	-0.004	-0.011	0.000	0.005	1	CP10-CF100PB10SN2	1706-2659	0.750	end depth reached
CPT_17	0.021	0.011	-0.006	0.142	0.275	0.001	NC	CP10-CF100PB10SN2	1706-2659	0.750	max. PPT value
CPT_18	-0.003	0.040	0.001	-0.097	0.005	0.000	2	CP10-CF100PB10SN2	1706-2658	0.750	max. penetration force

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:15



Piezocone Measured Data			**Location :** **BH12**
CPT Rig ID : GB20	**Stop Criterion :** see separate report	**Operator :** CD	**Coordinates :** **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
CPT Cone : 1706-2658	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 21-Jun-2022	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
	Water Depth [m] : 21.1		**Client :** Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:52

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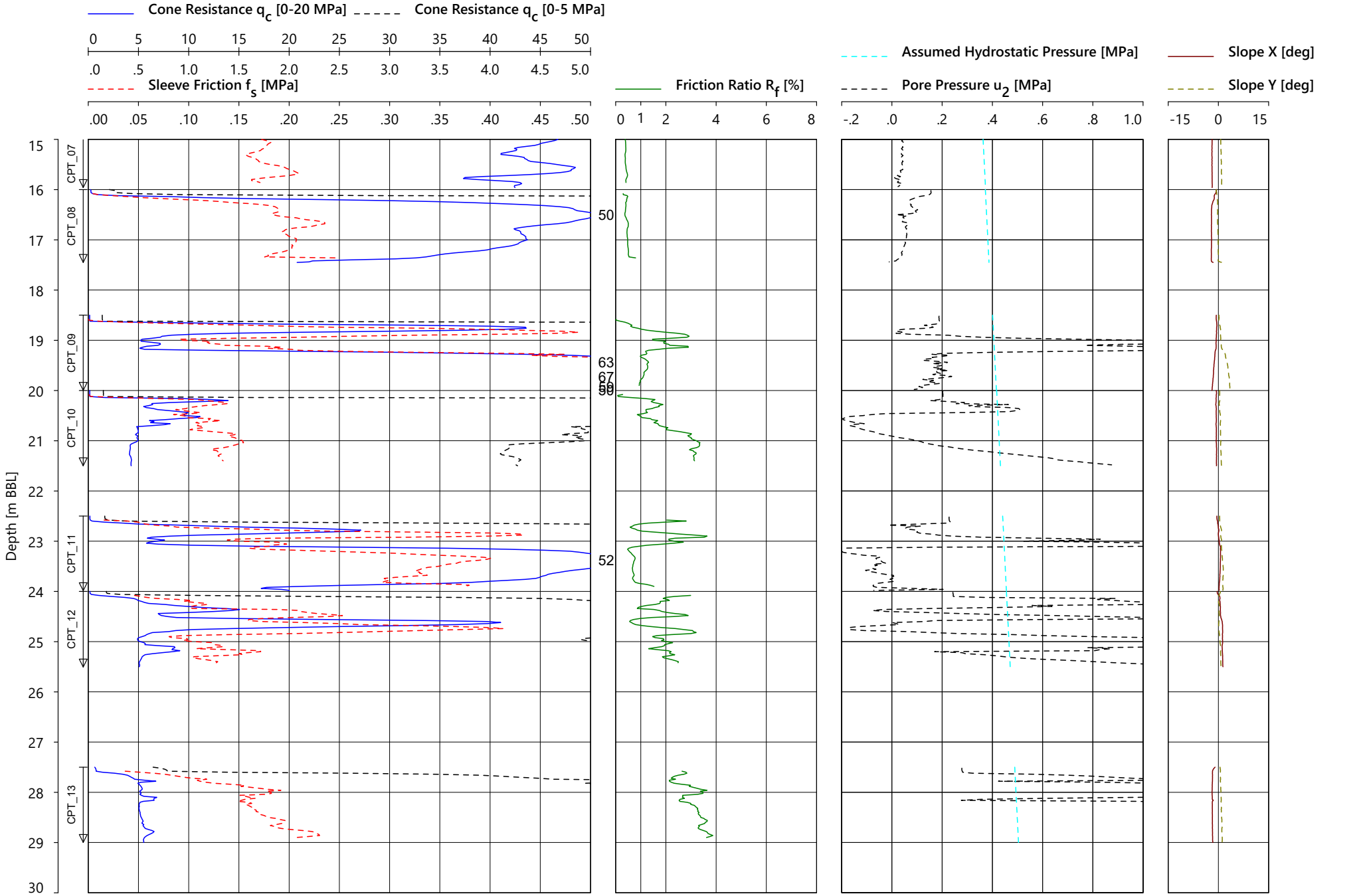

Piezocone Measured Data				**Location :**	**BH12**
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Coordinates :**	**E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Project :**	210194
Date of Test :	21-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
		Water Depth [m] :	21.3	**Client :**	Sure Partners Limited
		Operator :	TL		
		Compiled by :	Onboard		
		Checked by :	JD		

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:53

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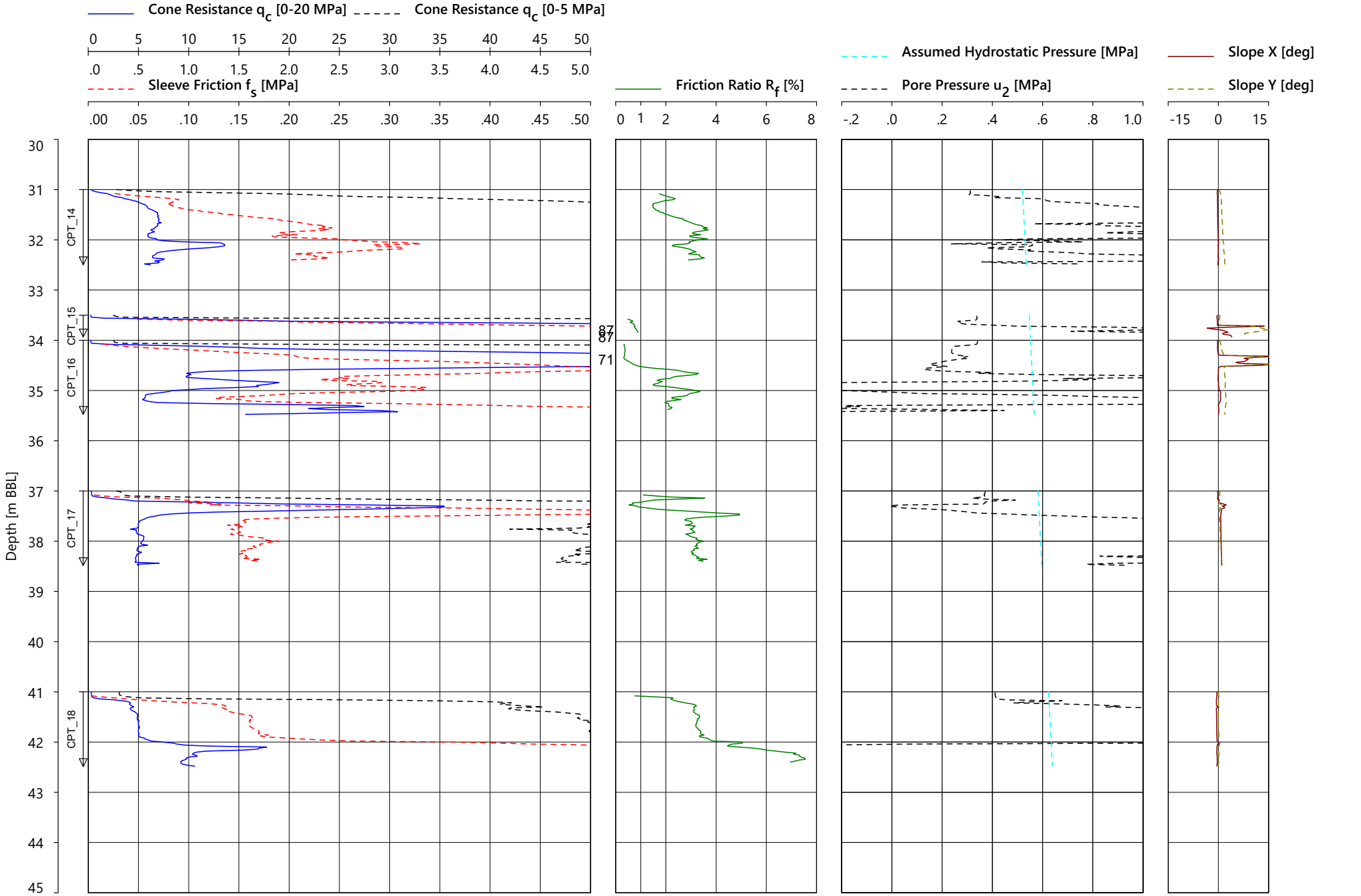
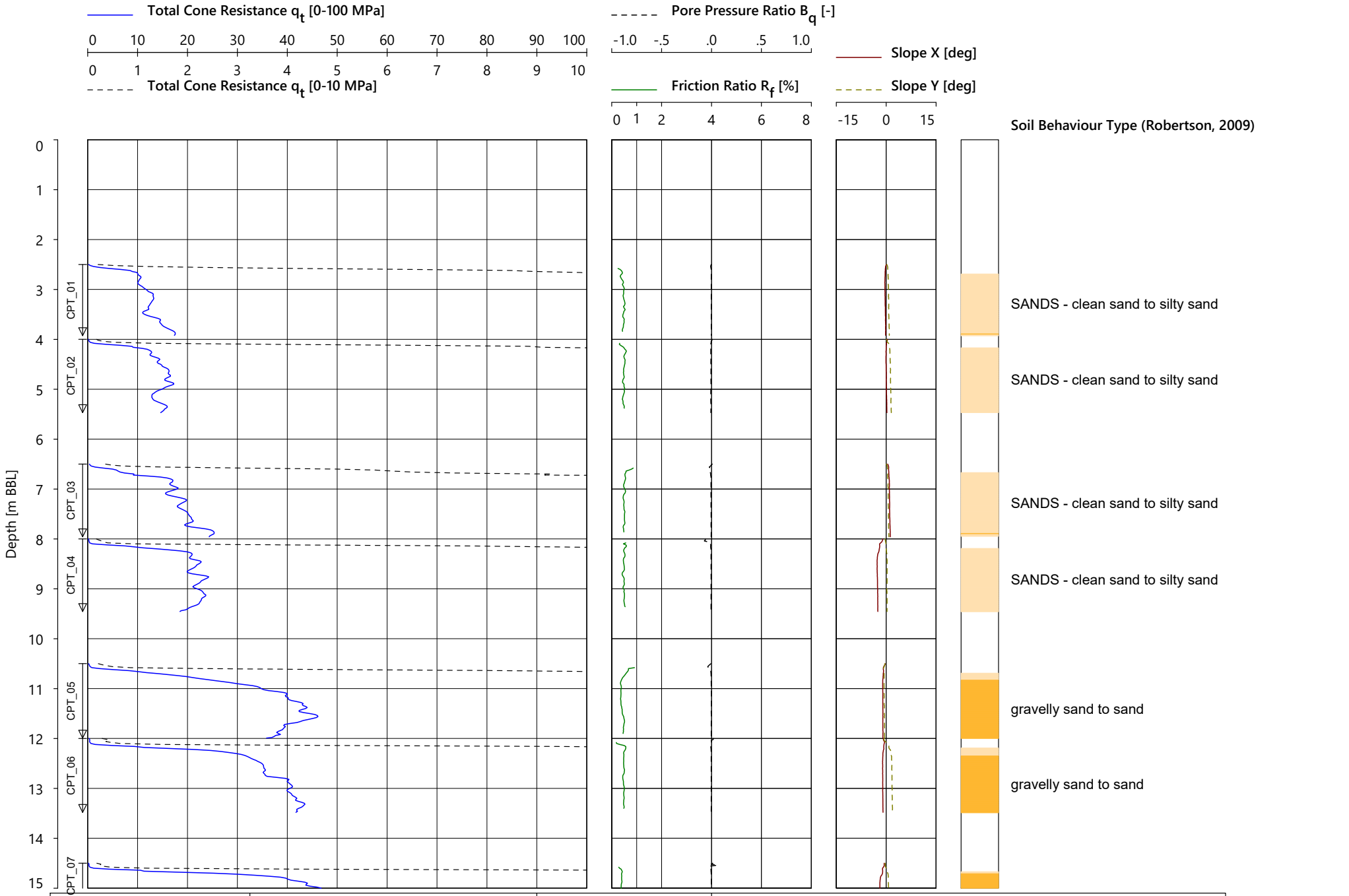


Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	22-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	21.0		

Location : **BH12**
Coordinates : **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:53

Plate 3.84



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2658
Date of Test :	21-Jun-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	21.1

Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH12**

Coordinates : **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:58

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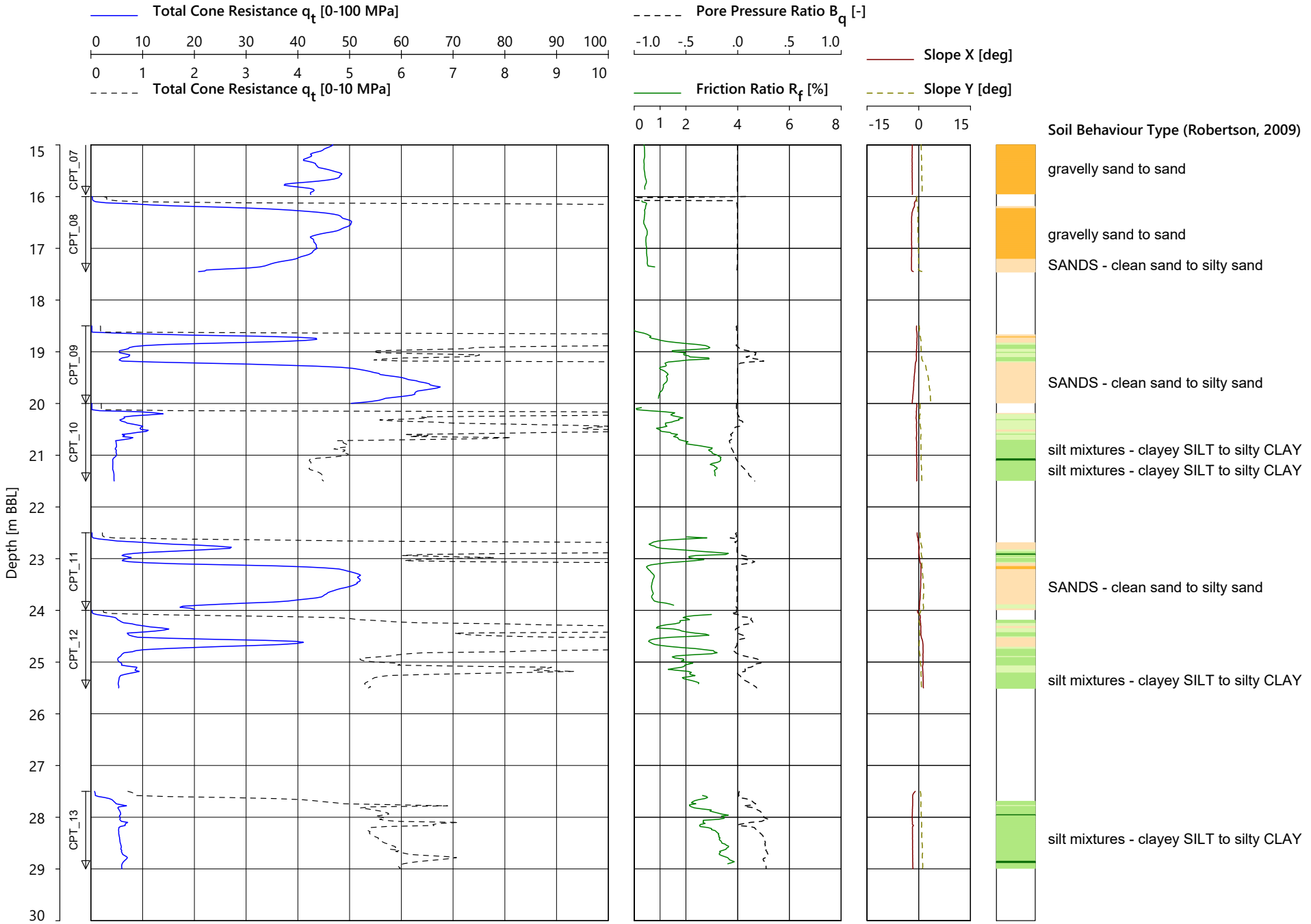

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2658
Date of Test :	21-Jun-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	21.3

Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : **BH12**
Coordinates : **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:59

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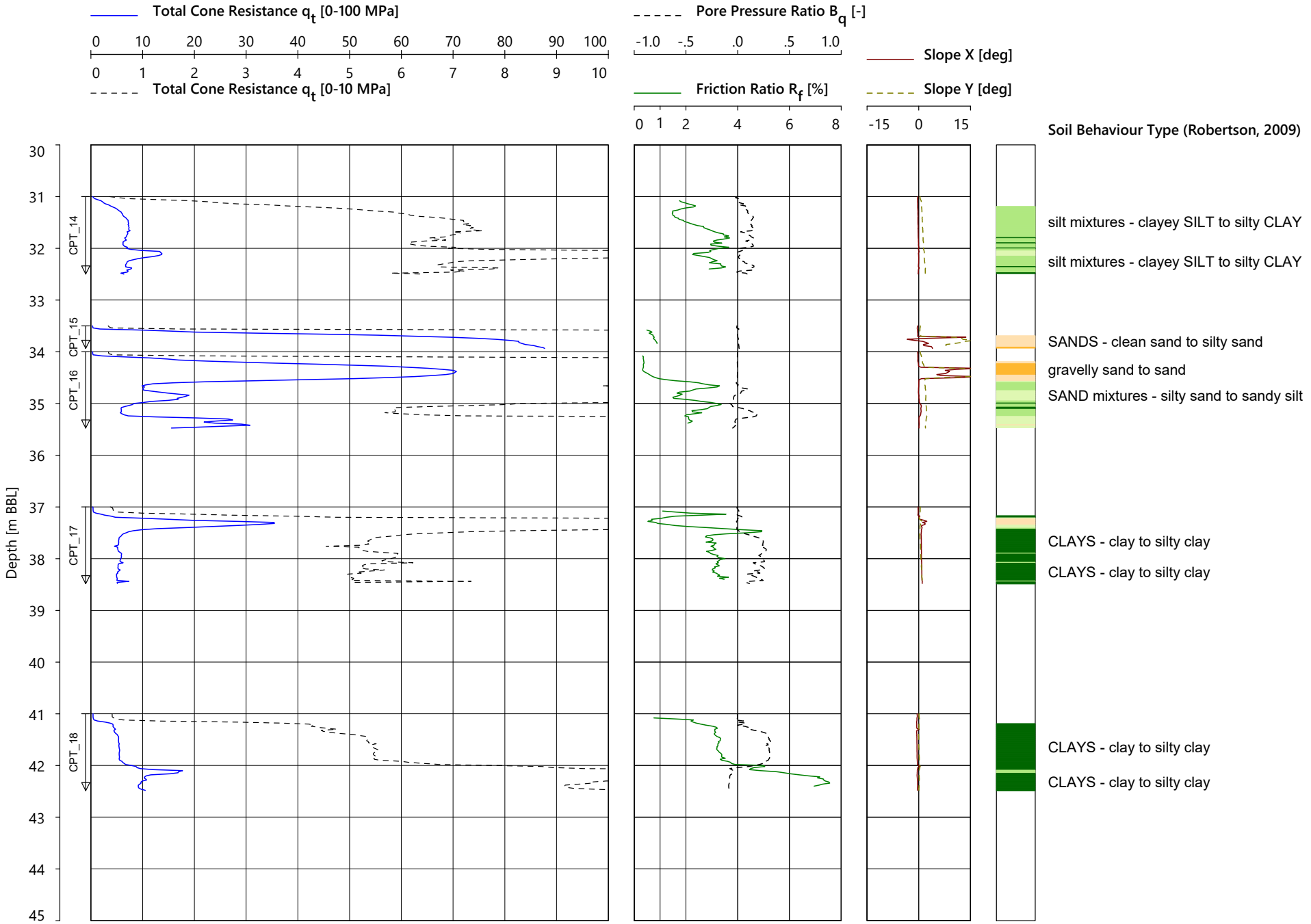
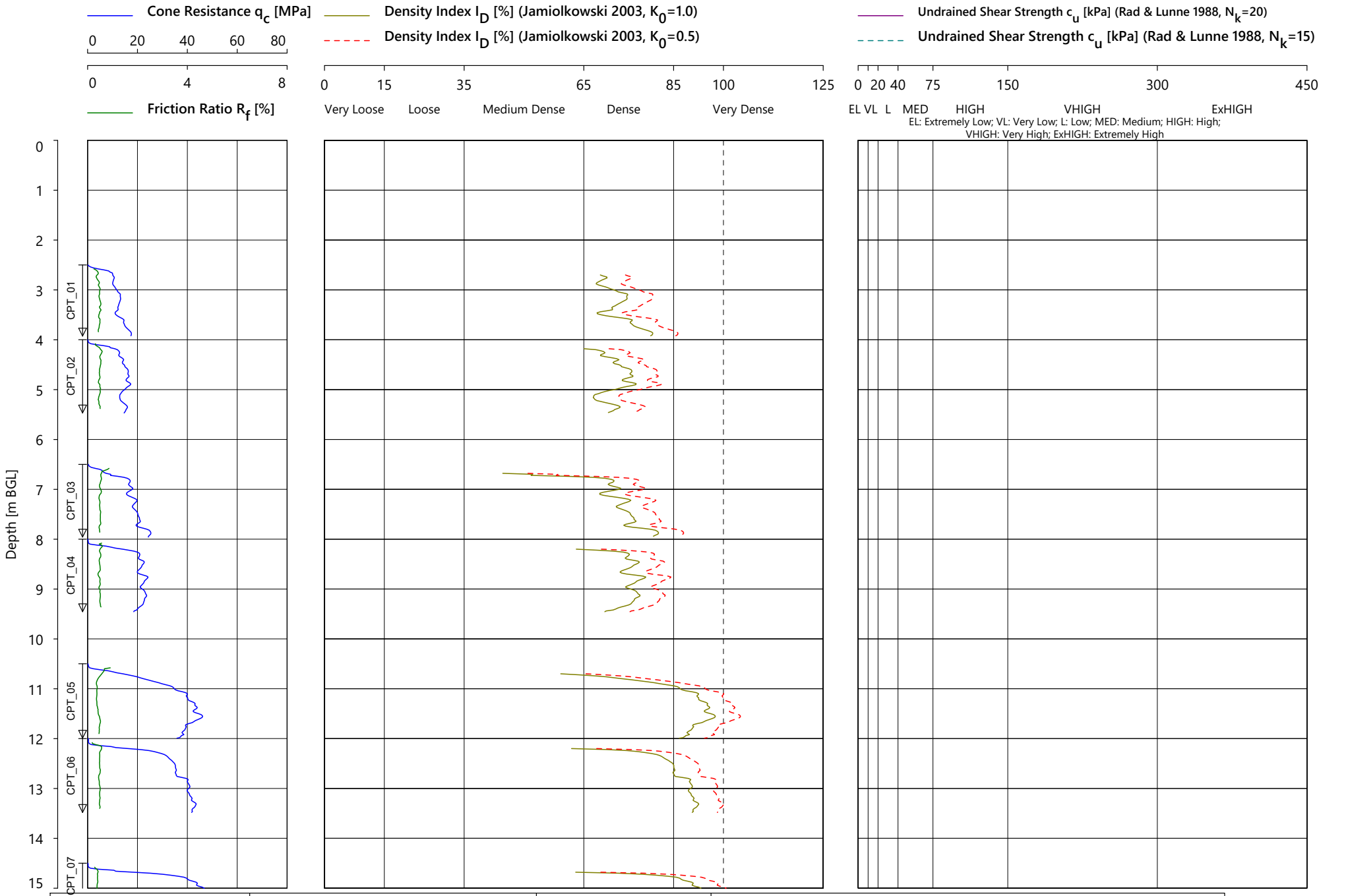


Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2658	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	22-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	21.0		

Location : **BH12**
Coordinates : **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH12**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 21-Jun-2022	**Water Depth [m] :** 21.1	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:11

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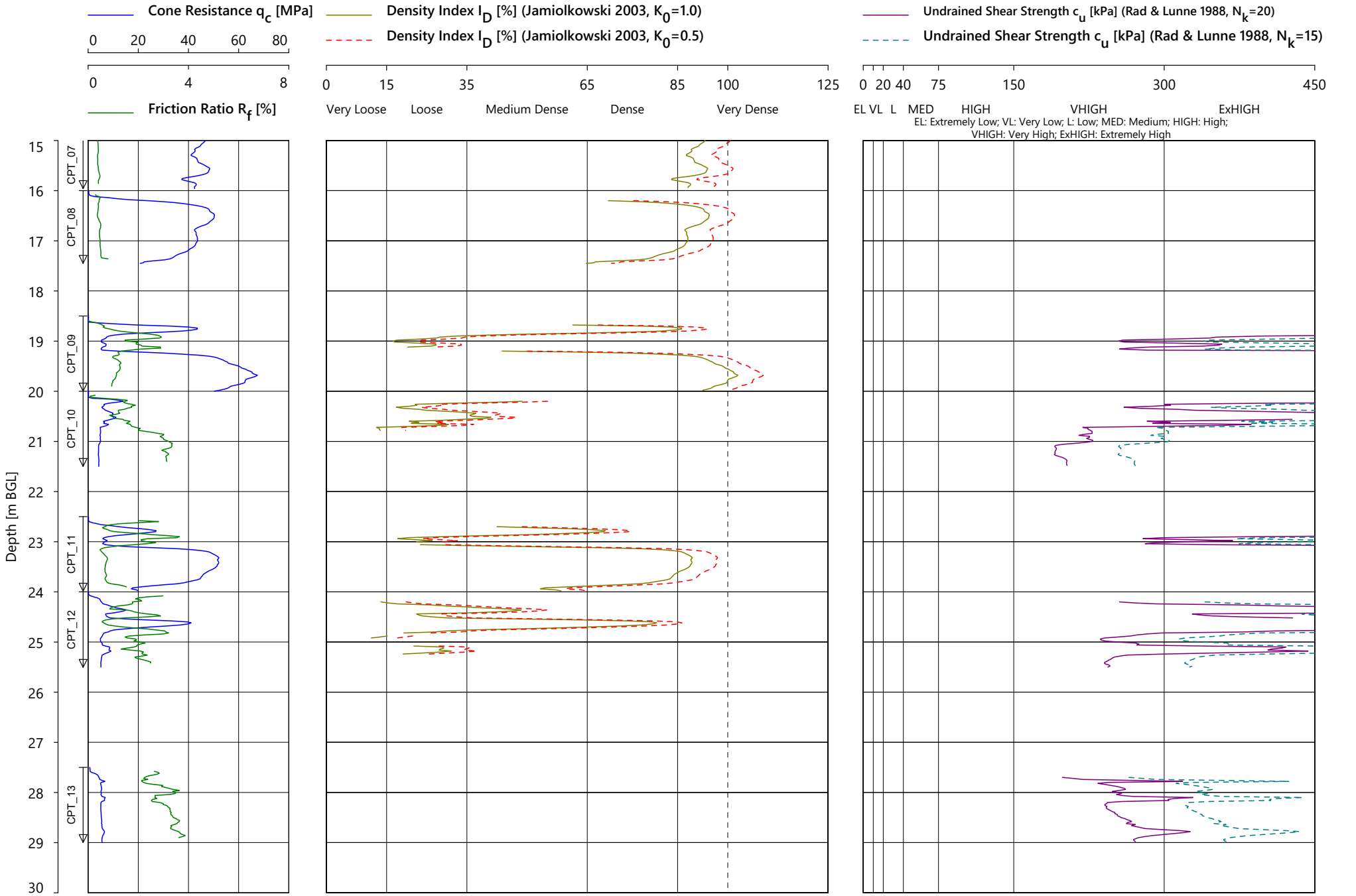
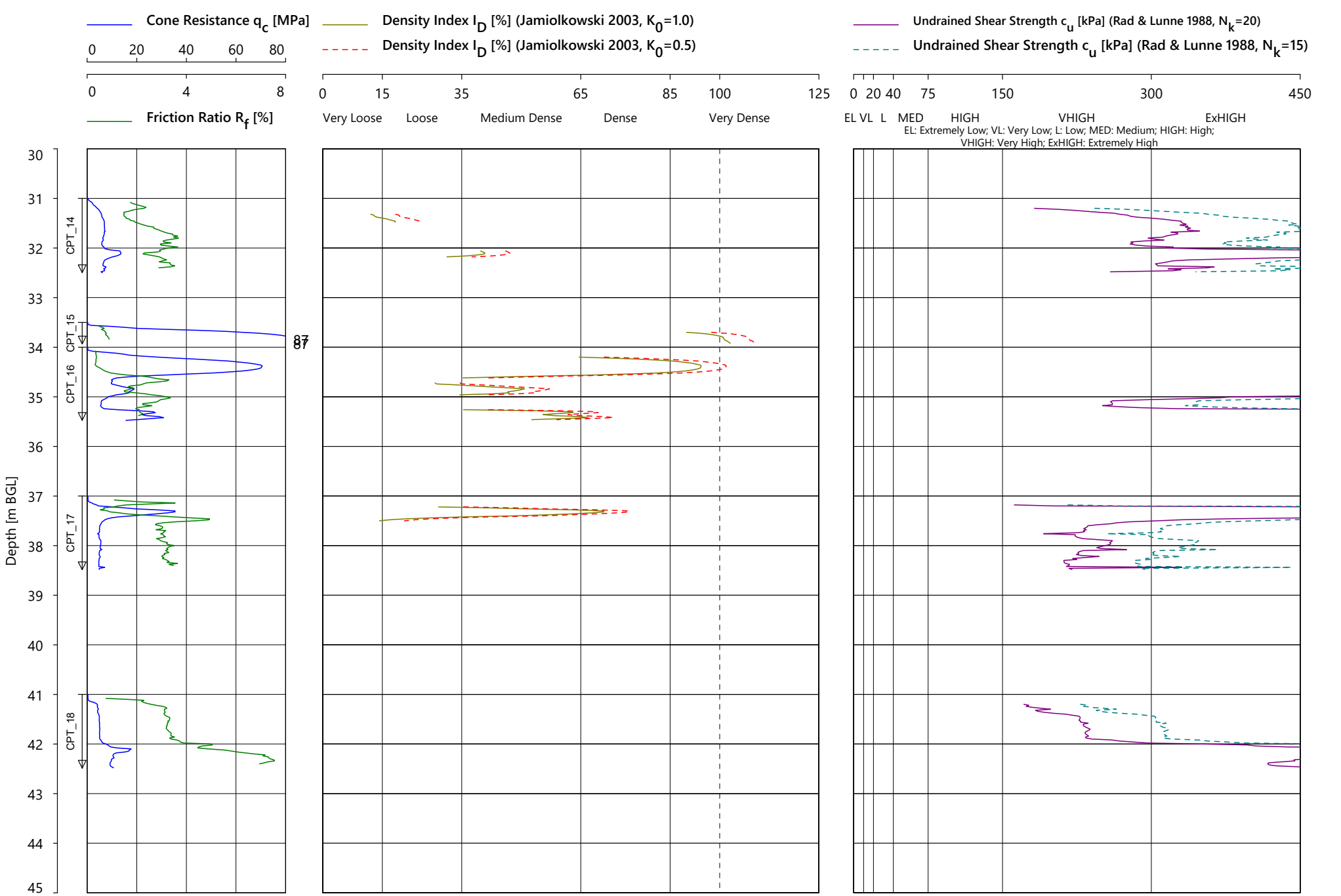


Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report **Application Class / Type :** see class report **Assumed Soil Unit Weight :** 19.0 [kN/m^3] **Water Depth [m] :** 21.3	**Operator :** TL **Compiled by :** Onboard **Checked by :** JD	**Location : BH12** **Coordinates :** **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40 **Project :** 210194 F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022 **Client :** Sure Partners Limited
CPT Rig ID : GB20 **CPT Cone :** 1706-2658 **Date of Test :** 21-Jun-2022			



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location :** BH12
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 299352.92 **N** 5847931.47 **Bed Level [m LAT]:** -20.40
CPT Cone : 1706-2658	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 22-Jun-2022	**Water Depth [m] :** 21.0		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:12

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Location: **BH12**

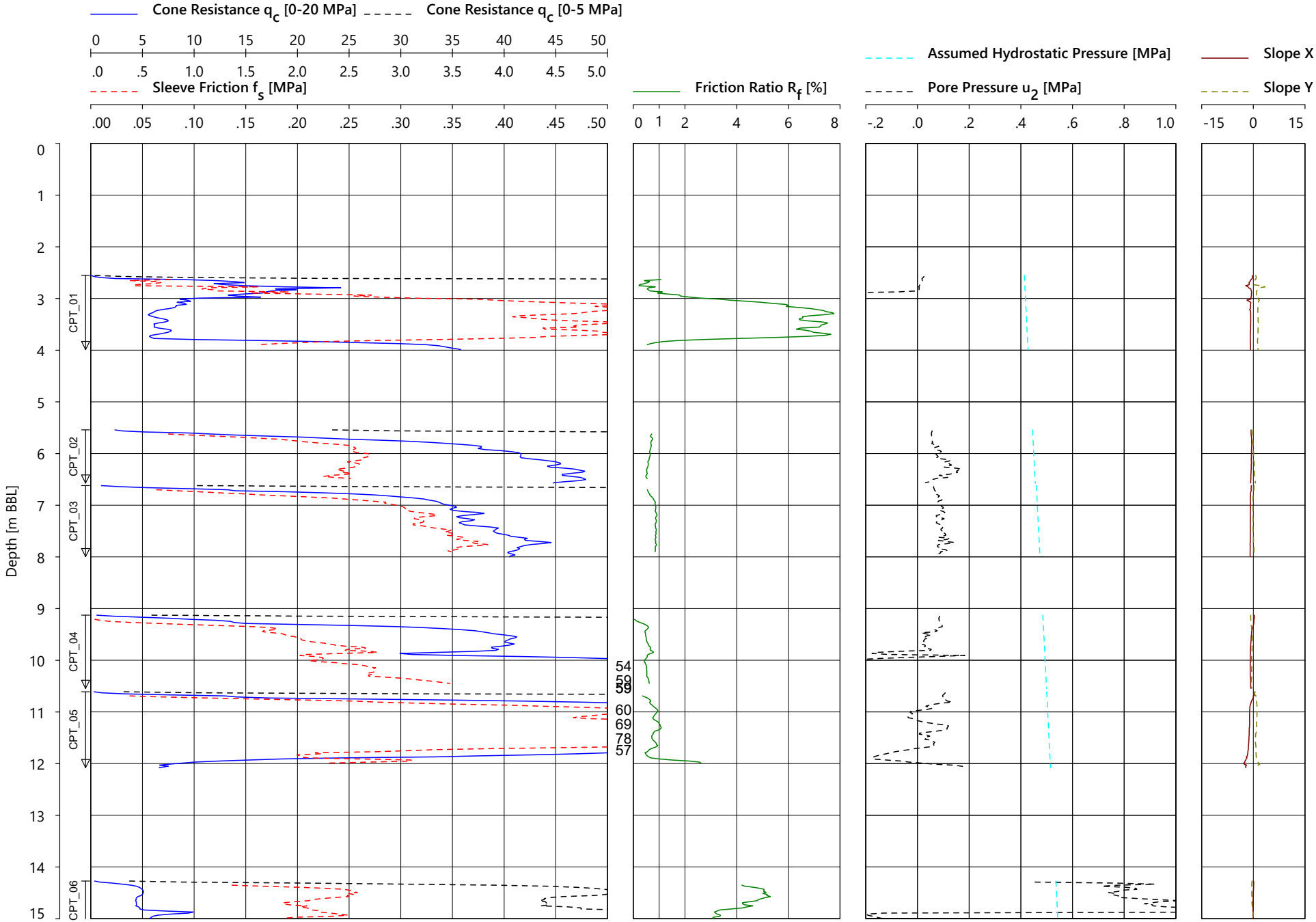
Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	-0.038	0.038	-0.004	0.013	-0.003	0.006	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_02	-0.017	0.035	0.002	-0.018	0.000	-0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_03	-0.024	0.036	0.003	-0.034	0.001	-0.003	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_04	0.002	0.033	-0.001	-0.065	0.003	0.001	2	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_05	-0.022	0.036	0.003	-0.023	-0.002	-0.004	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_06	0.004	0.032	0.001	-0.021	0.000	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_07	-0.008	0.031	0.001	-0.038	0.002	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_08	-0.035	0.033	0.001	-0.010	0.003	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_09	-0.027	0.035	0.003	-0.022	0.000	-0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_10	-0.032	0.037	0.002	0.026	-0.001	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_11	-0.019	0.038	0.002	-0.014	0.000	-0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_12	-0.010	0.036	0.010	-0.048	0.001	-0.007	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_13	-0.004	0.035	0.002	-0.034	0.002	0.000	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_14	-0.010	0.039	-0.005	-0.037	0.002	0.006	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_15	-0.023	0.040	0.001	-0.008	-0.001	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	max. penetration force
CPT_16	0.019	0.036	-0.004	-0.069	0.005	0.004	2	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_17	-0.012	0.039	0.000	0.008	0.001	0.002	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached
CPT_18	-0.015	0.041	0.001	-0.012	-0.002	0.001	1	CP10-CF100PB10SN2	1706-2658	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

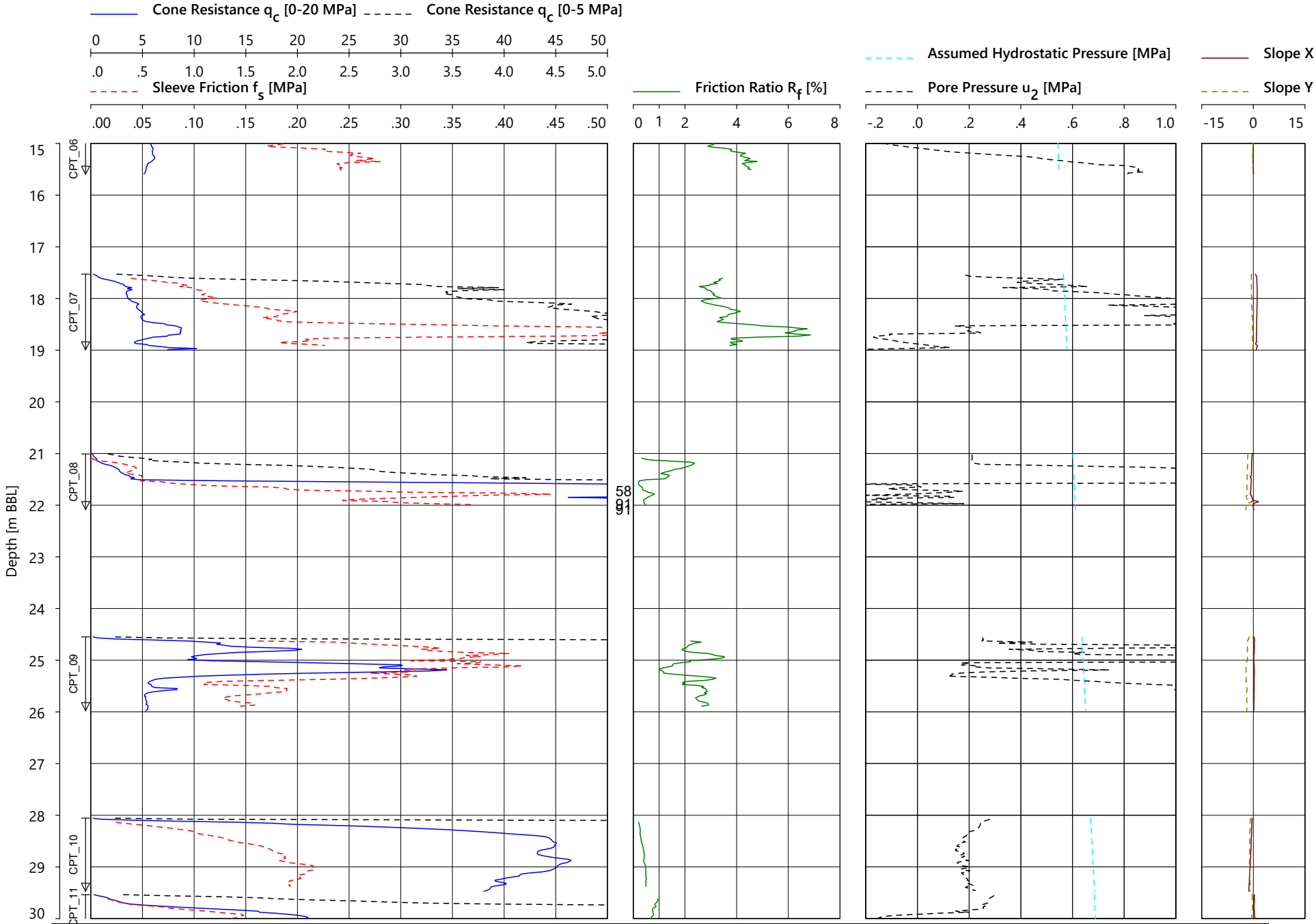
CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:17



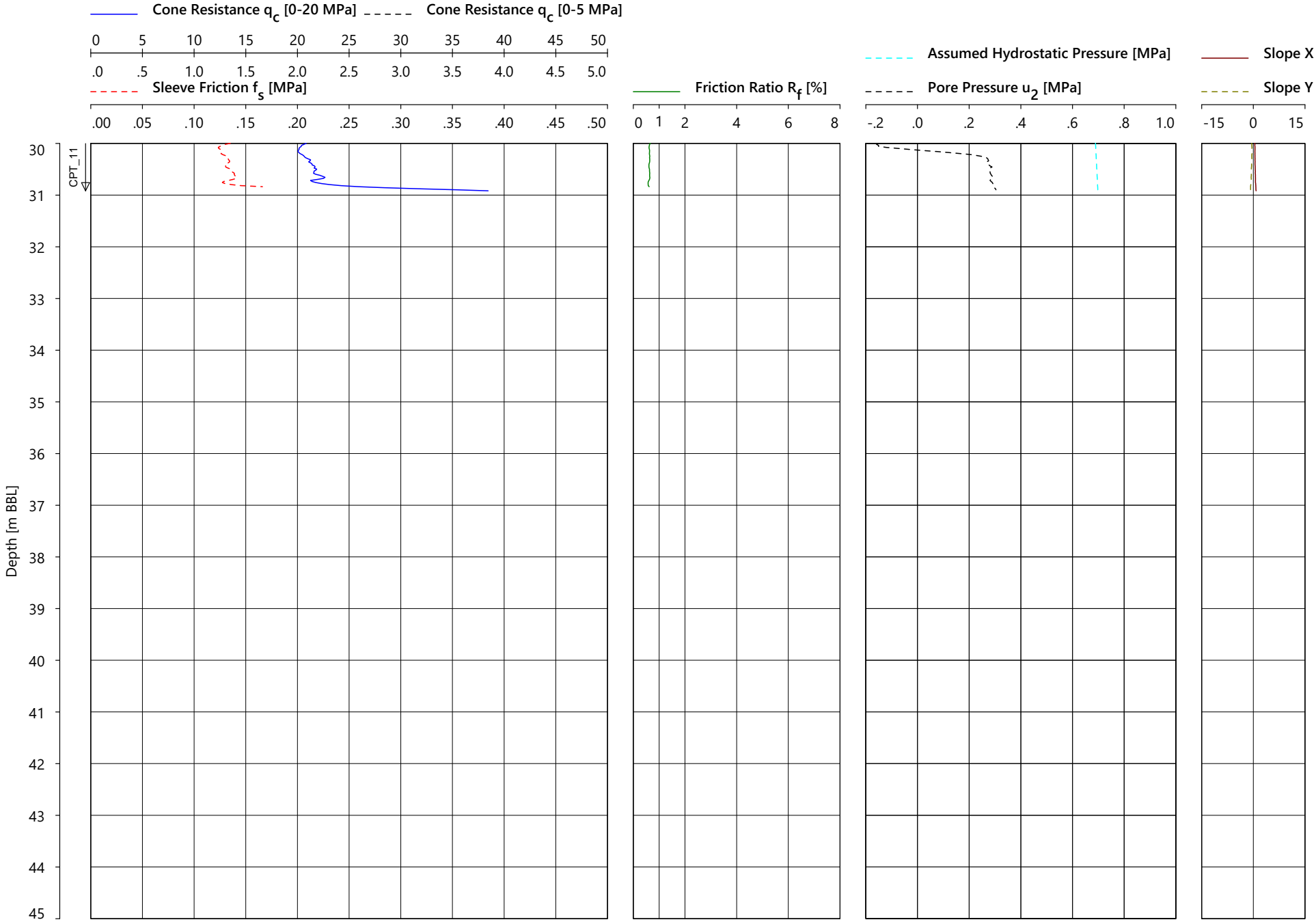
Piezocone Measured Data		**Stop Criterion :**	see separate report	**Location :**	**ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022**
CPT Rig ID :	GB20	**Application Class / Type :**	see class report	**Coordinates :**	**E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
CPT Cone :	1706-2663	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Operator :**	CD
Date of Test :	03-Jul-2022	**Water Depth [m] :**	38.8	**Compiled by :**	Onboard
				Checked by :	JD
				Project :	210194
				F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022	
				Client :	Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:43



Piezocone Measured Data		**Stop Criterion :**	see separate report	**Location :**	ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CPT Rig ID :	GB20	**Application Class / Type :**	see class report	**Coordinates :**	**E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
CPT Cone :	1706-2663	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Operator :**	TL
Date of Test :	04-Jul-2022	**Water Depth [m] :**	39.3	**Compiled by :**	Onboard
				Checked by :	JD
				Project :	210194
					F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
				Client :	Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:43



Piezocone Measured Data			
CPT Rig ID : GB20	**Stop Criterion :** see separate report	**Operator :** CD	**Location :** ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CPT Cone : 1706-2663	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
Date of Test : 04-Jul-2022	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
	Water Depth [m] : 38.9		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

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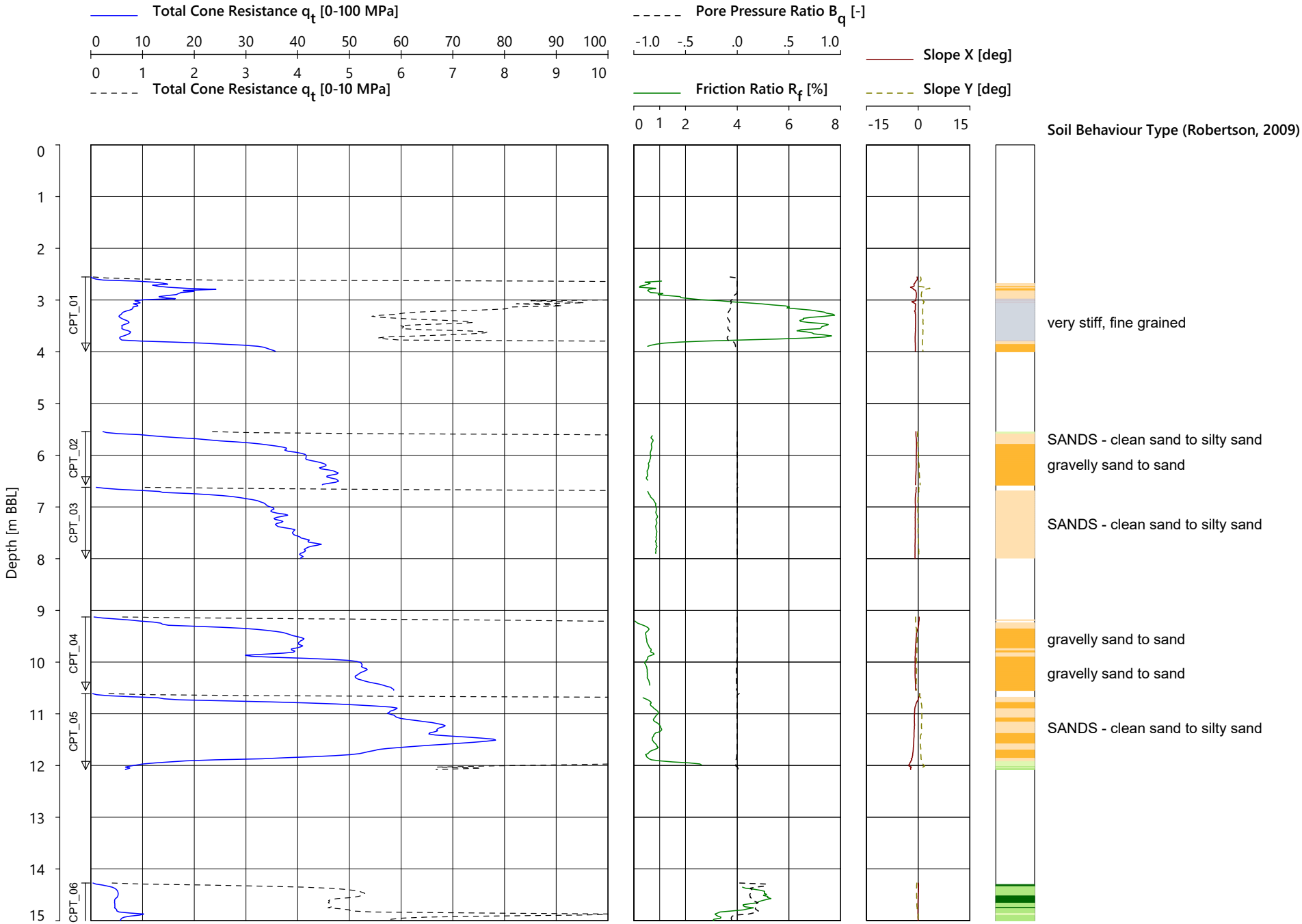


Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	03-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	38.8

Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

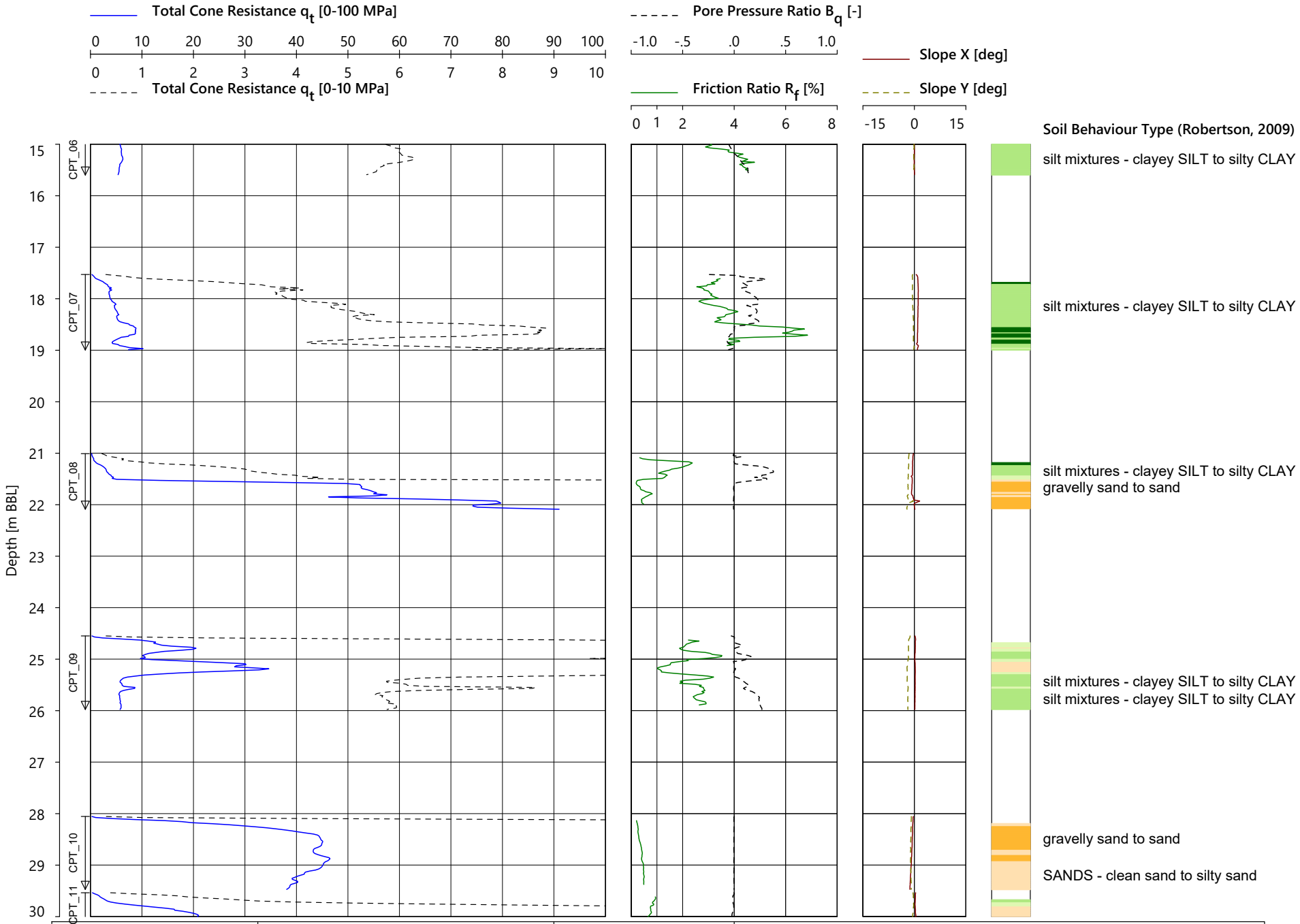
Coordinates : **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:48



Piezocone Derived Data

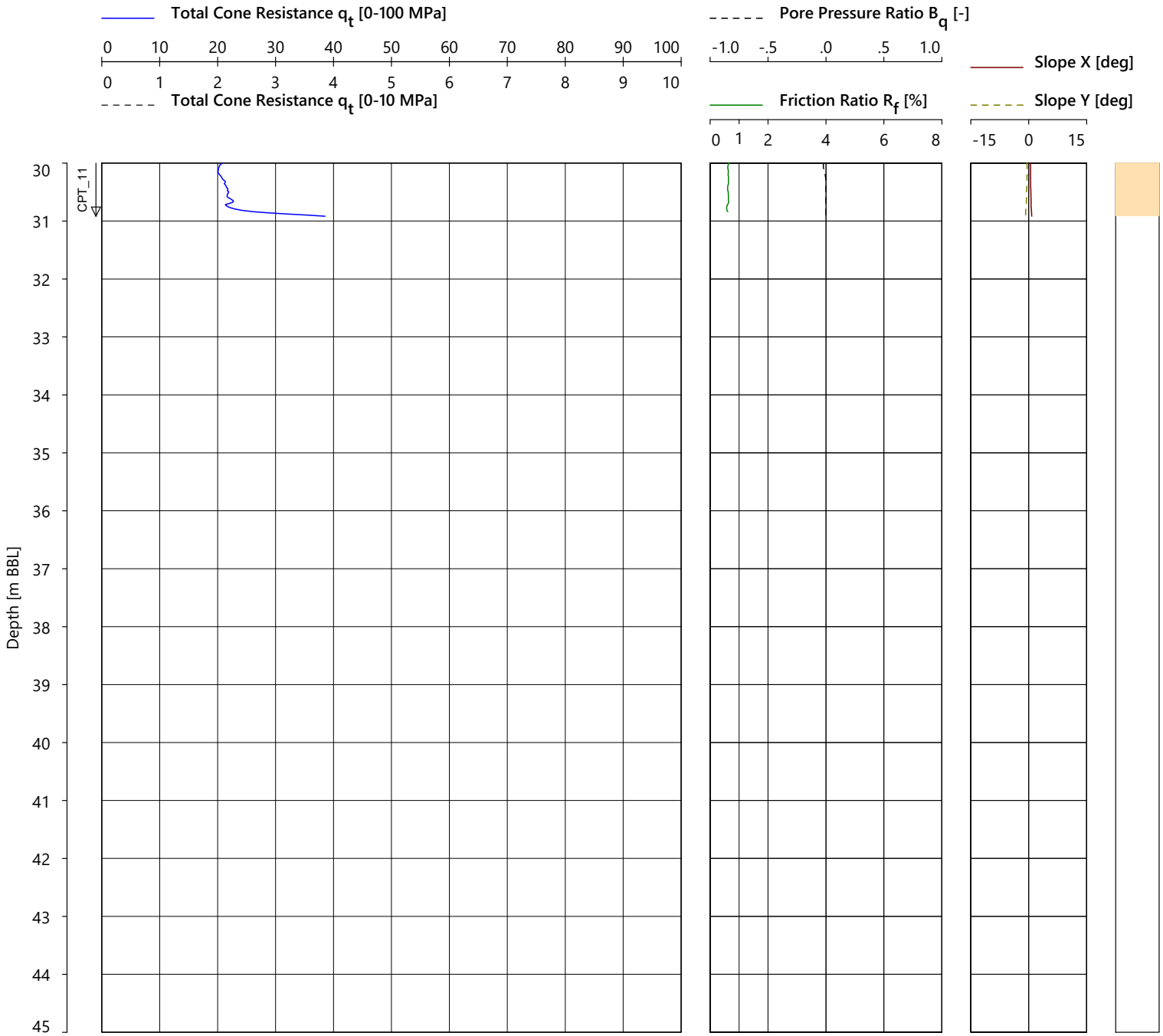
CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	04-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	39.3

Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
Coordinates : **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:48



Soil Behaviour Type (Robertson, 2009)

SANDS - clean sand to silty sand

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	04-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	38.9

Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

Coordinates : **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10

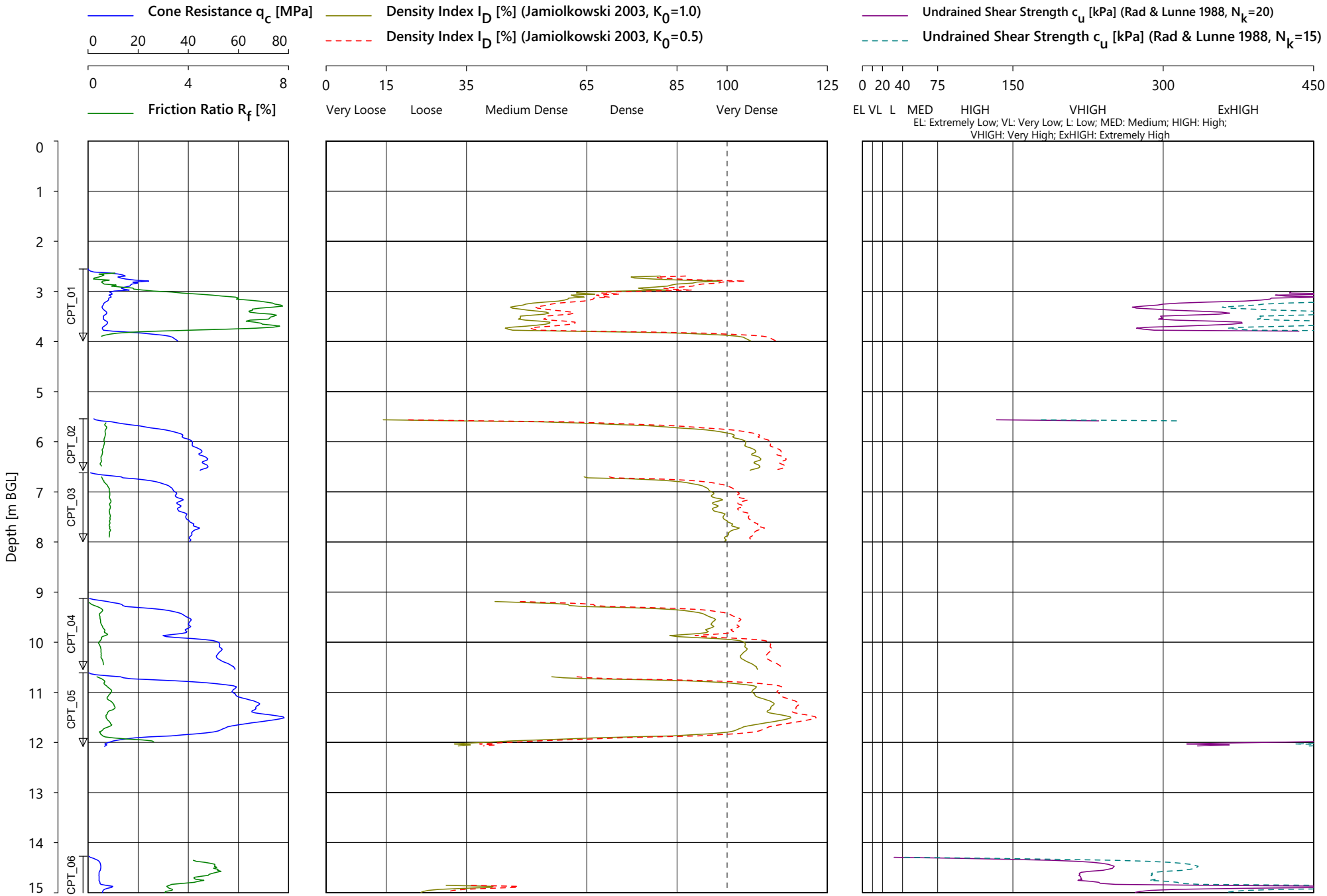
Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:48

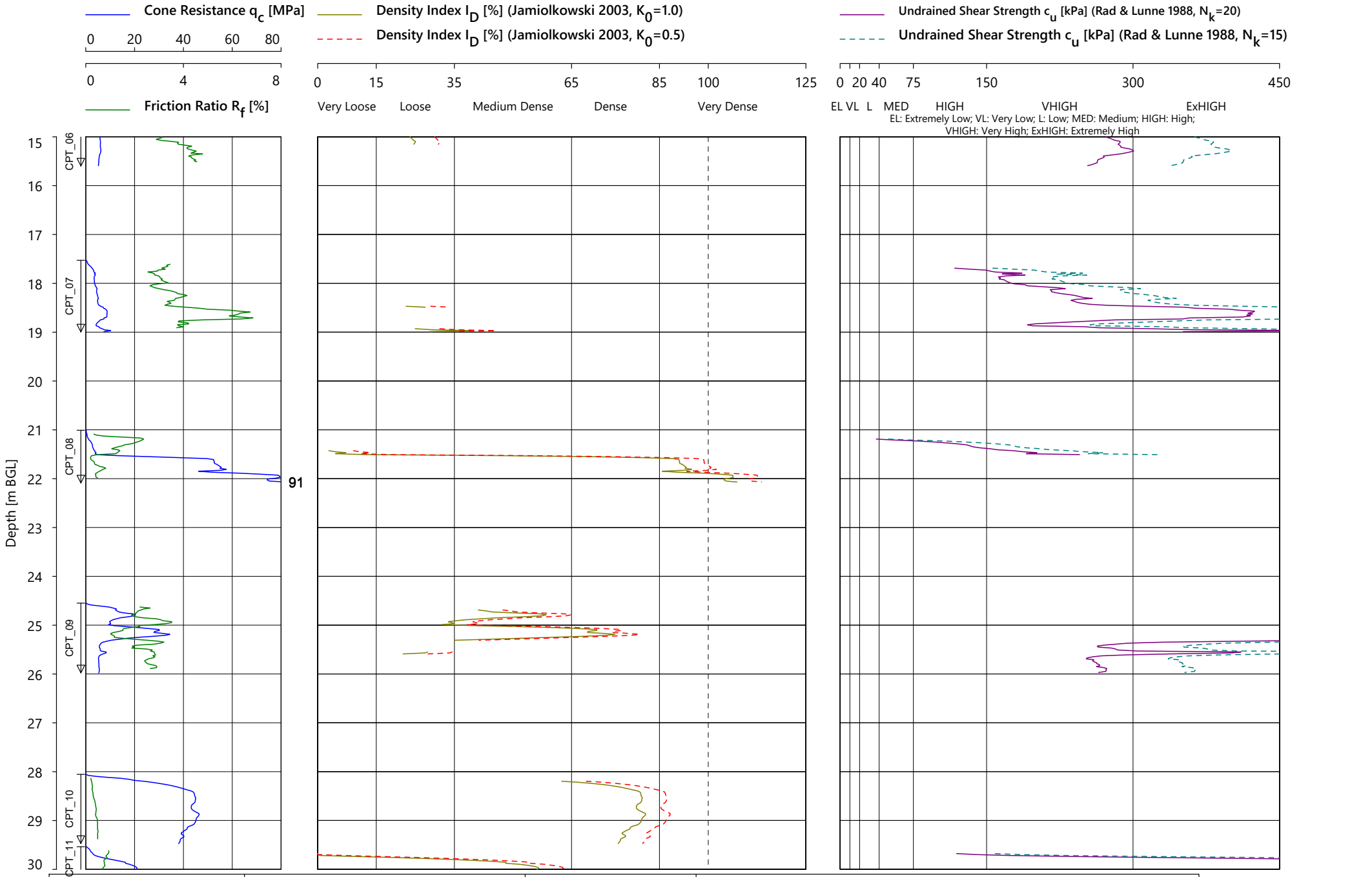
Plate 3.97



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location :** ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 03-Jul-2022	**Water Depth [m] :** 38.8		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:00

Plate 3.98



Density Index and Undrained Shear Strength				**Location :**	**ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022**
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Coordinates :**	**E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Project :**	210194
Date of Test :	04-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
		Water Depth [m] :	39.3	**Client :**	Sure Partners Limited
		Operator :	TL		
		Compiled by :	Onboard		
		Checked by :	JD		

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:00

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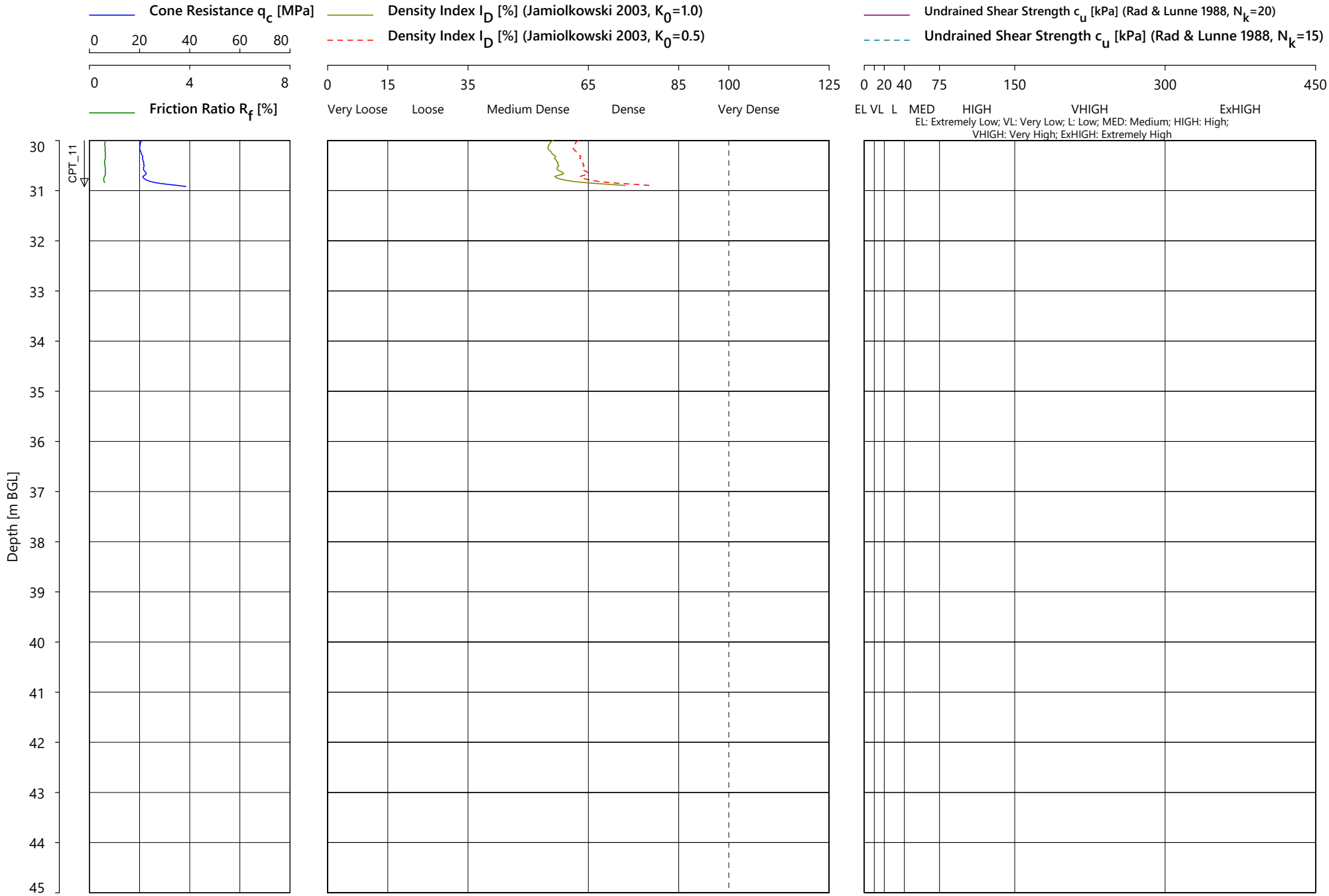


Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 300820.59 **N** 5847130.59 **Bed Level [m LAT]:** -38.10
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 04-Jul-2022	**Water Depth [m] :** 38.9	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

Location: **BH13**

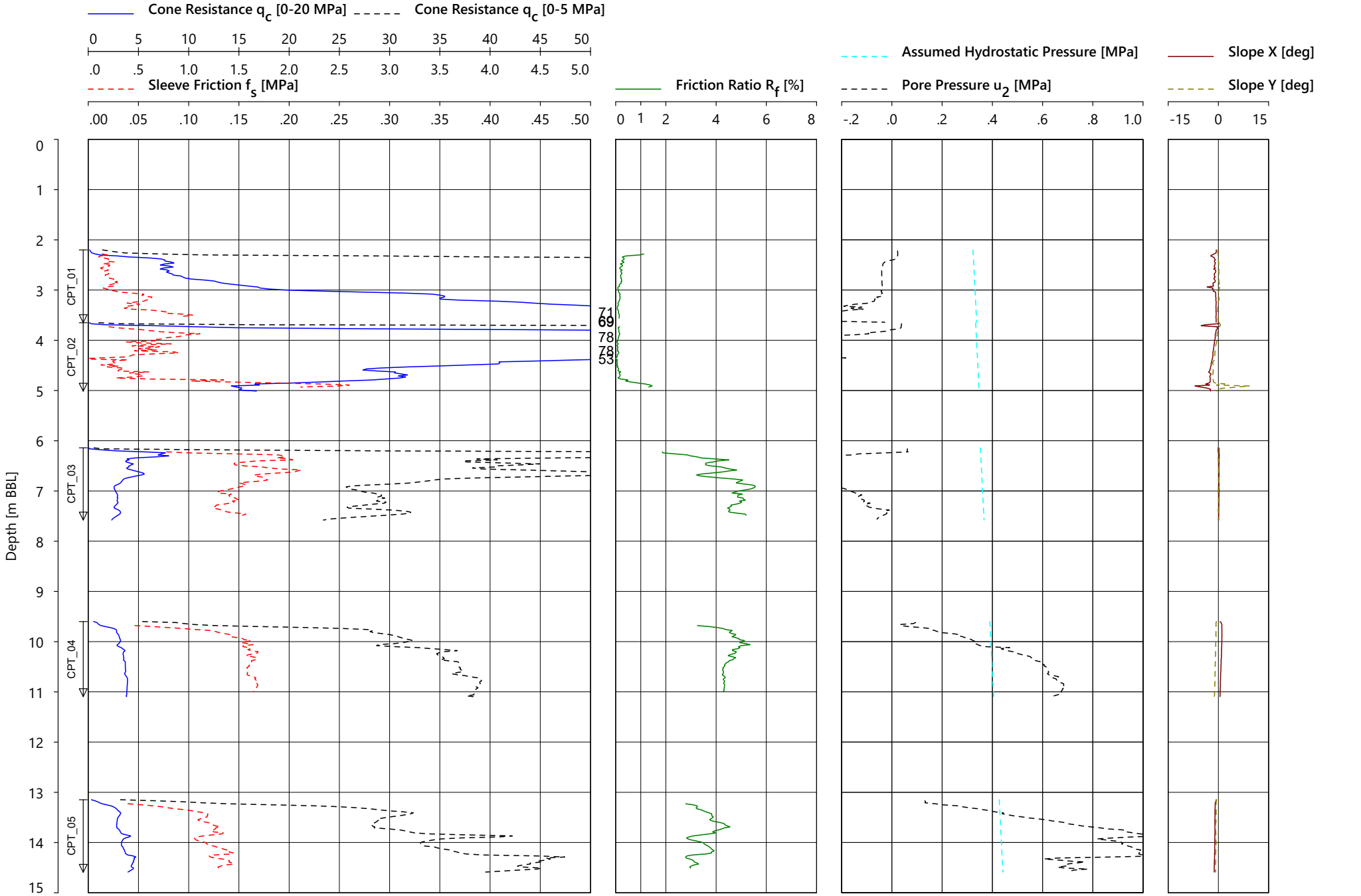
Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	0.100	0.028	0.000	-0.027	0.002	-0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_02	0.098	0.028	-0.007	-0.023	0.002	0.003	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_03	0.108	0.028	-0.007	-0.014	0.002	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_04	0.108	0.029	-0.008	-0.037	0.001	0.003	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_05	0.085	0.030	-0.008	-0.061	0.003	0.007	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_06	0.104	0.027	-0.006	-0.016	-0.002	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_07	0.086	0.028	-0.008	-0.019	-0.002	0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_08	0.105	0.026	-0.003	-0.082	0.005	-0.002	2	CP10-CF100PB10SN2	1706-2663	0.750	cone value
CPT_09	0.071	0.028	-0.004	-0.025	0.003	-0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_10	0.118	0.026	0.008	-0.075	0.006	-0.011	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_11	0.053	0.032	-0.004	-0.053	0.002	0.000	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

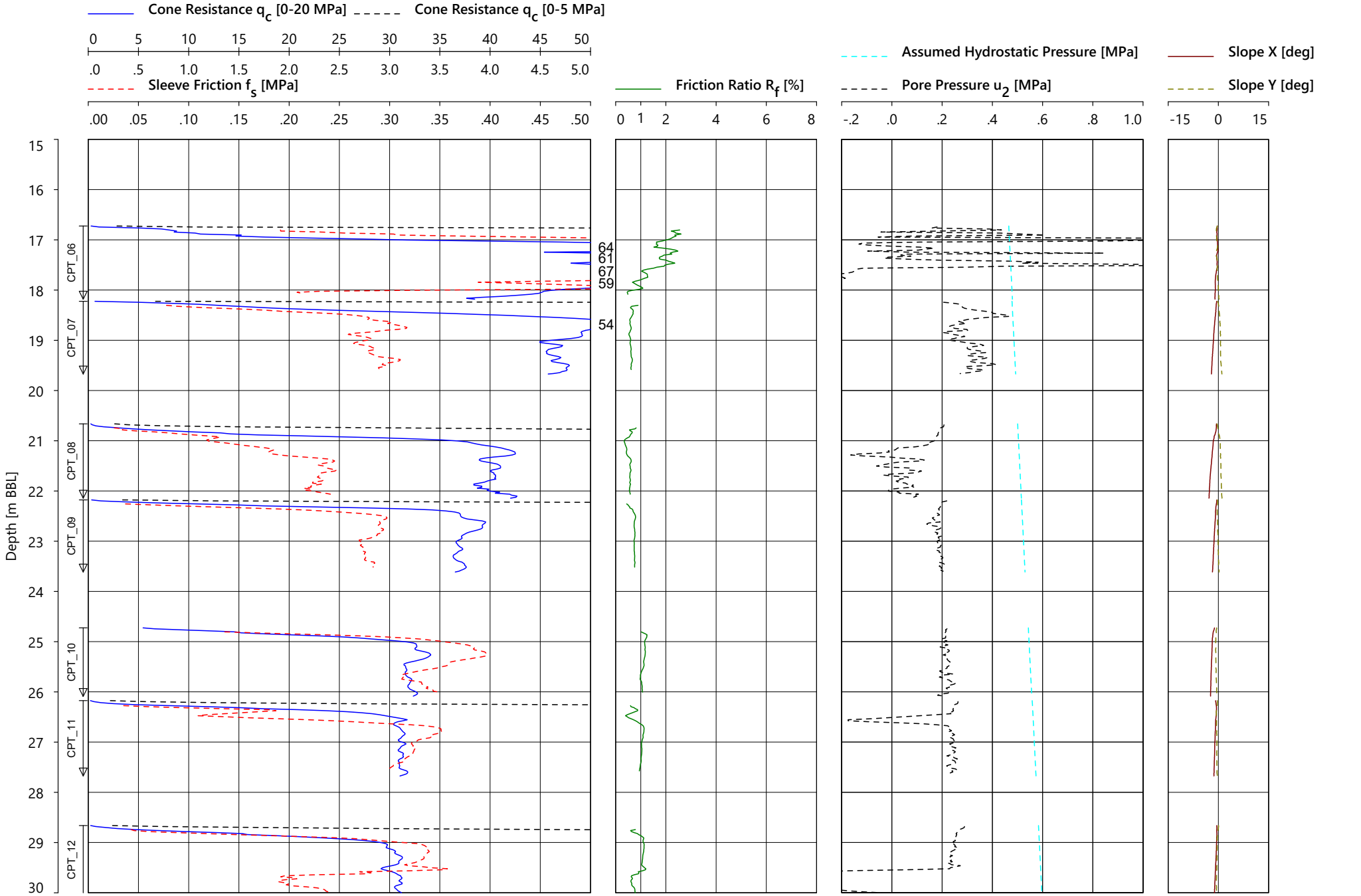
GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:09



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	07-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	30.1		

Location : **BH20**
Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

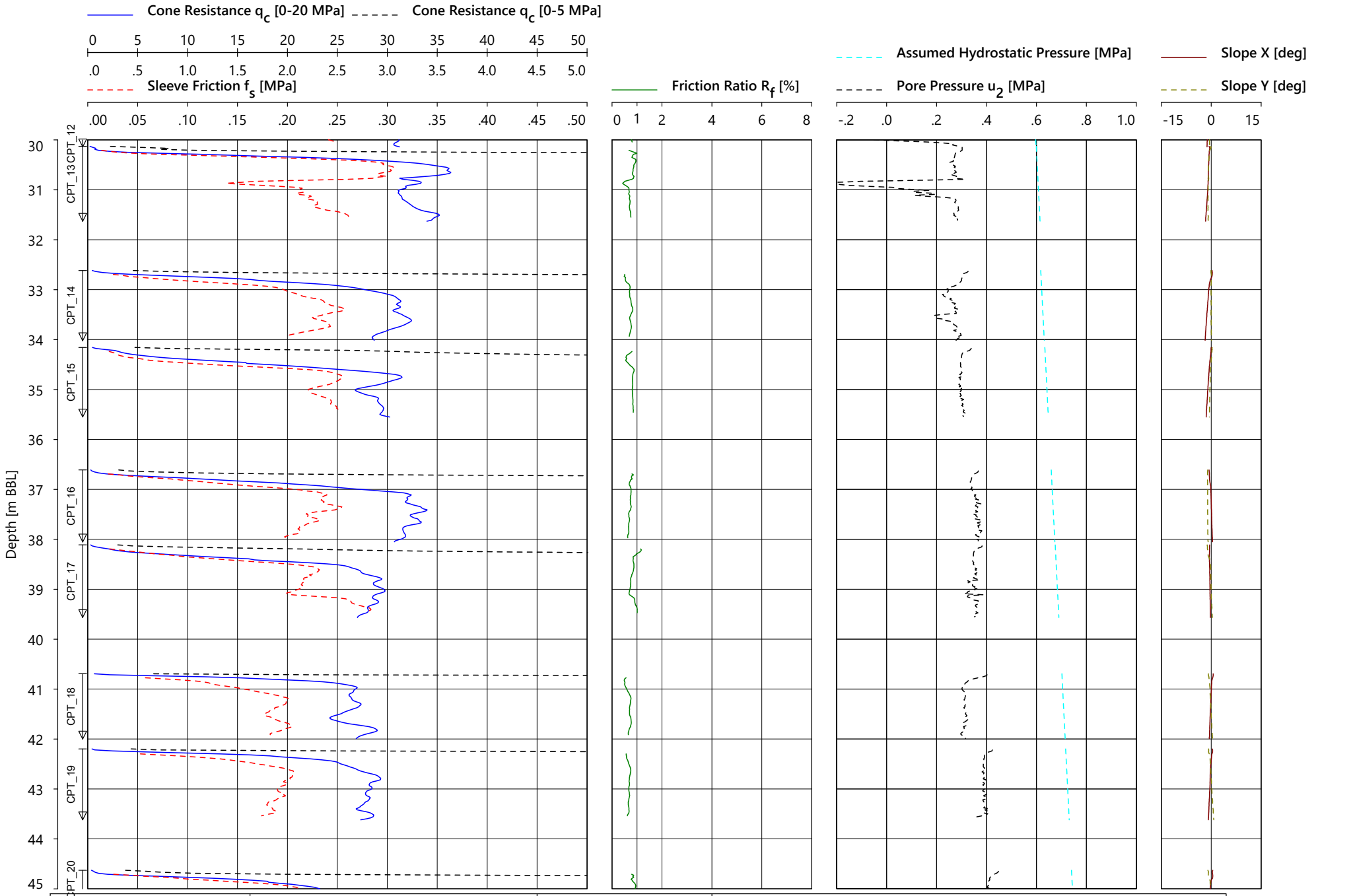
GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:57



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	07-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	29.8		

Location : **BH20**
Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:57



Piezocone Measured Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	08-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	29.7
Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : BH20

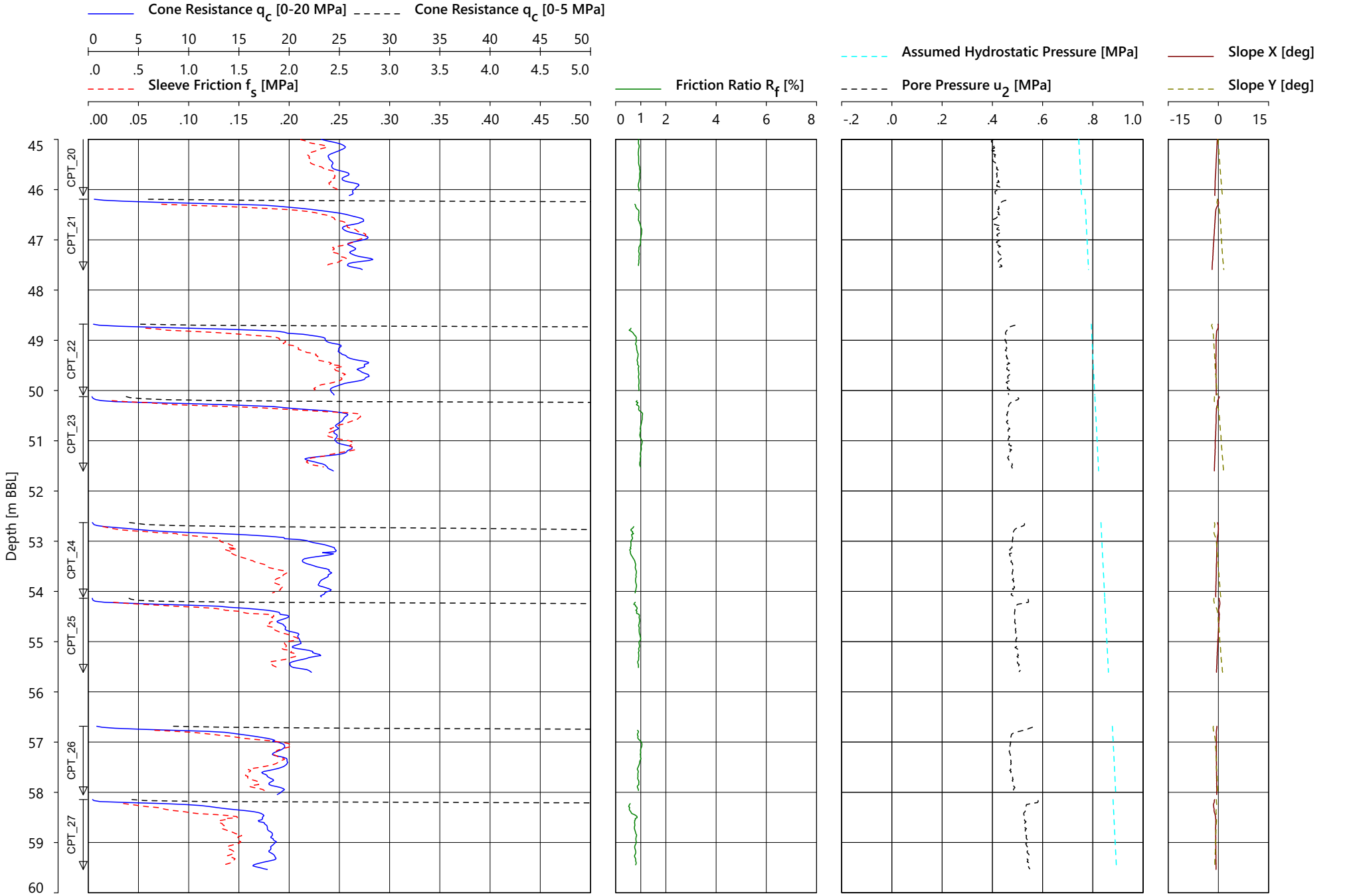
Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

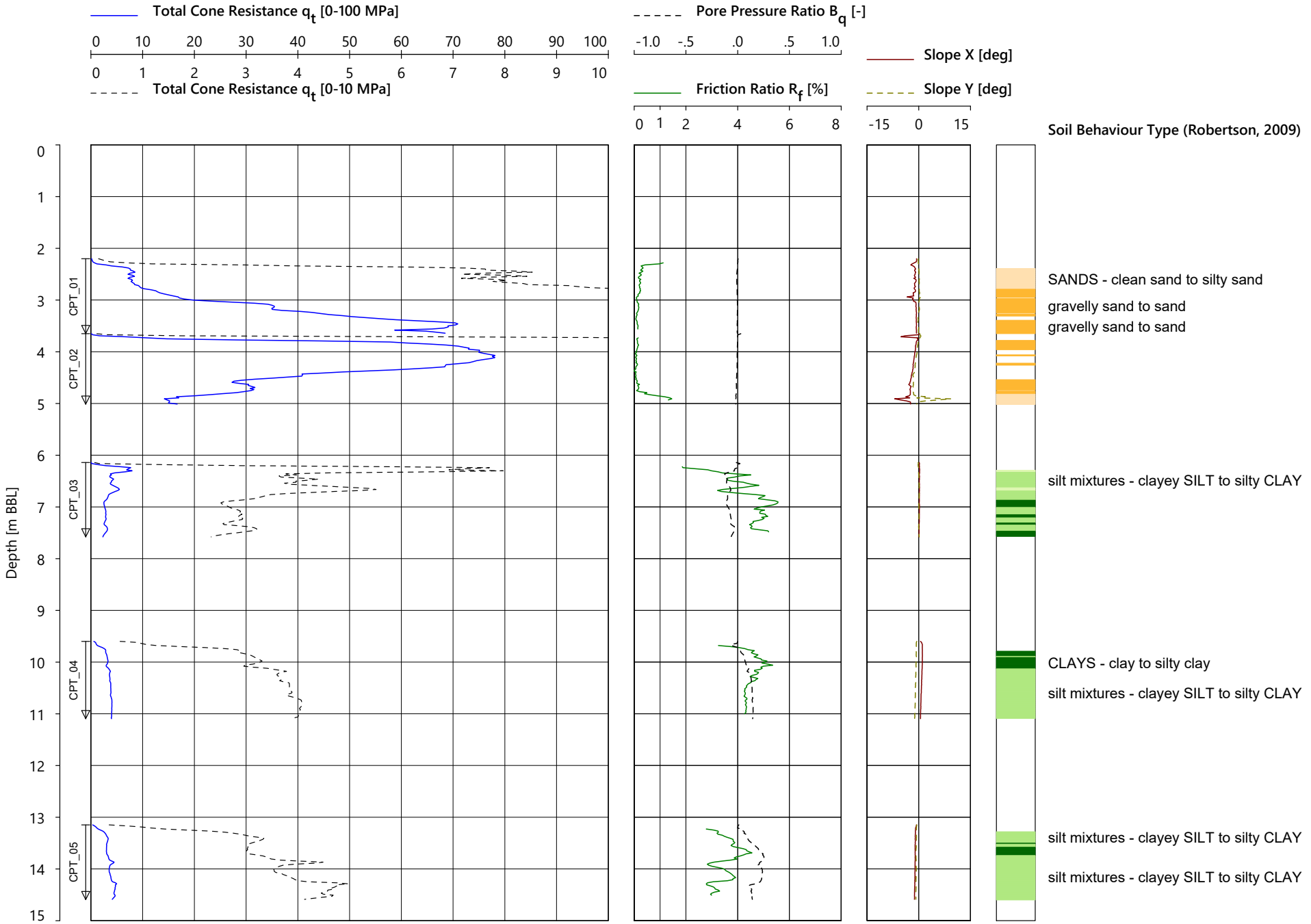
GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:57



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	08-Jul-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	29.4		

Location : **BH20**
Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:57



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	07-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	30.1
Operator :	TL
Compiled by :	Onboard
Checked by :	JD

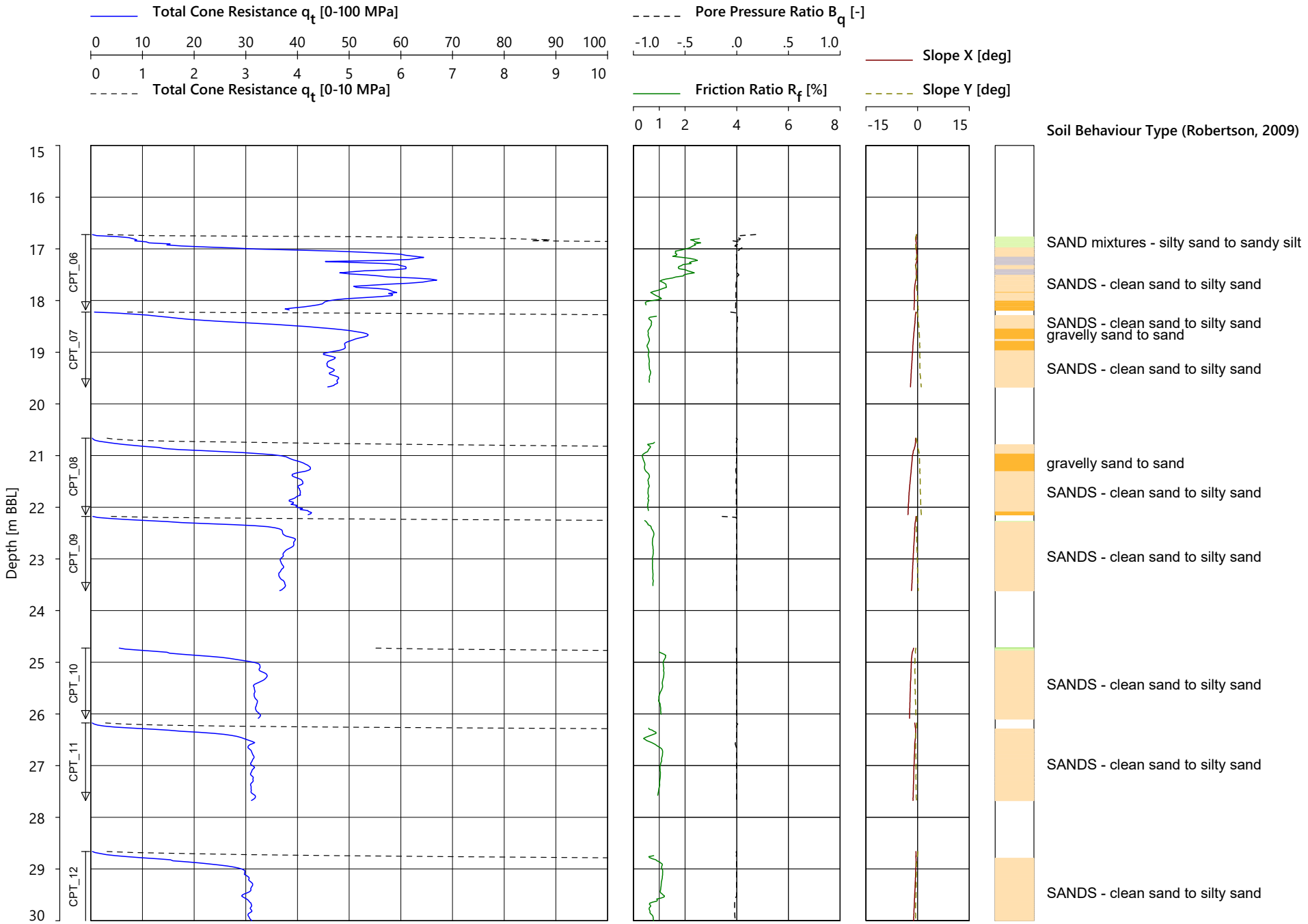
Location : BH20

Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

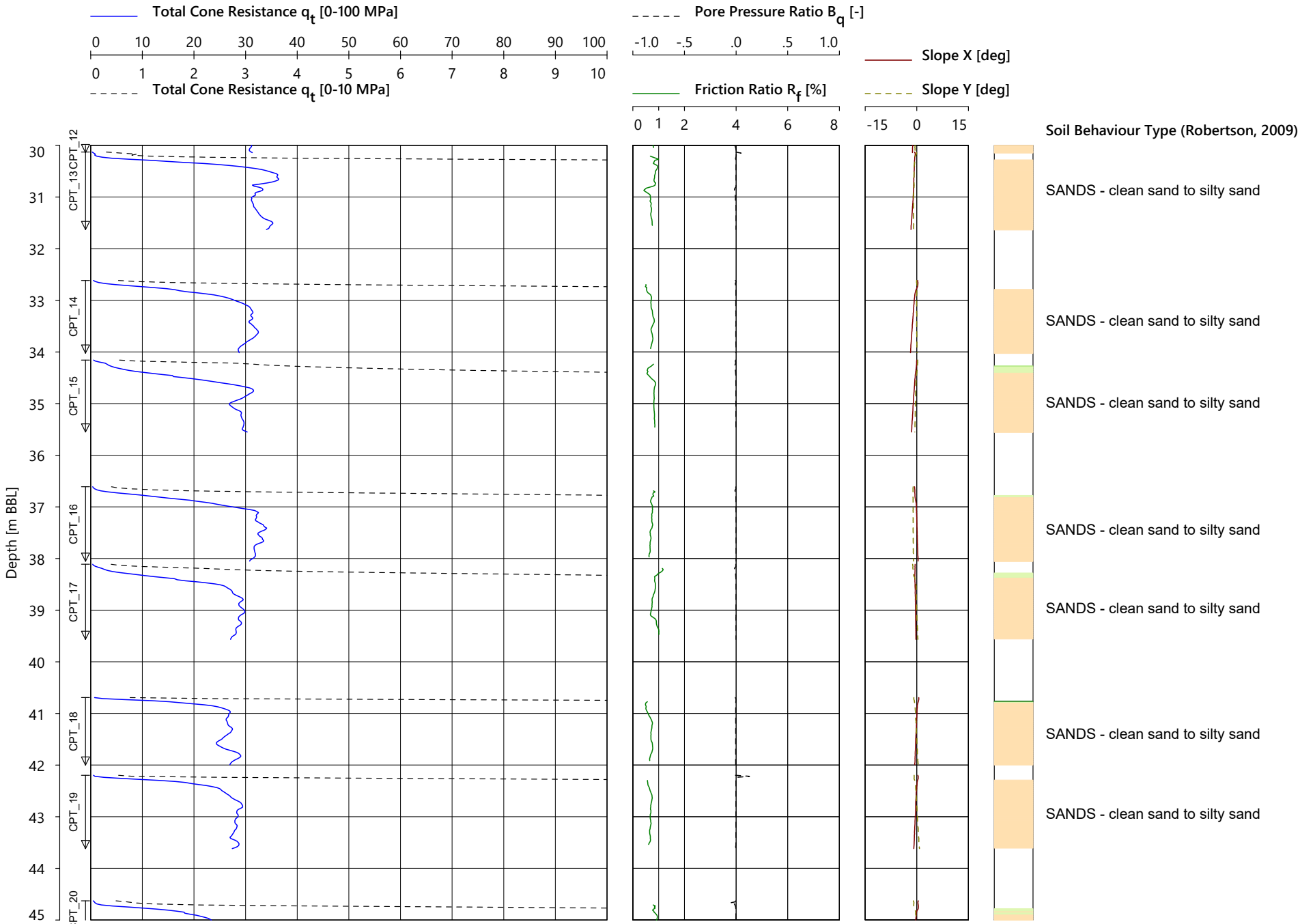


Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	07-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	29.8
Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH20**
Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:48:04



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	08-Jul-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	29.7

Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : **BH20**

Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40

Project : 210194

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Client : Sure Partners Limited

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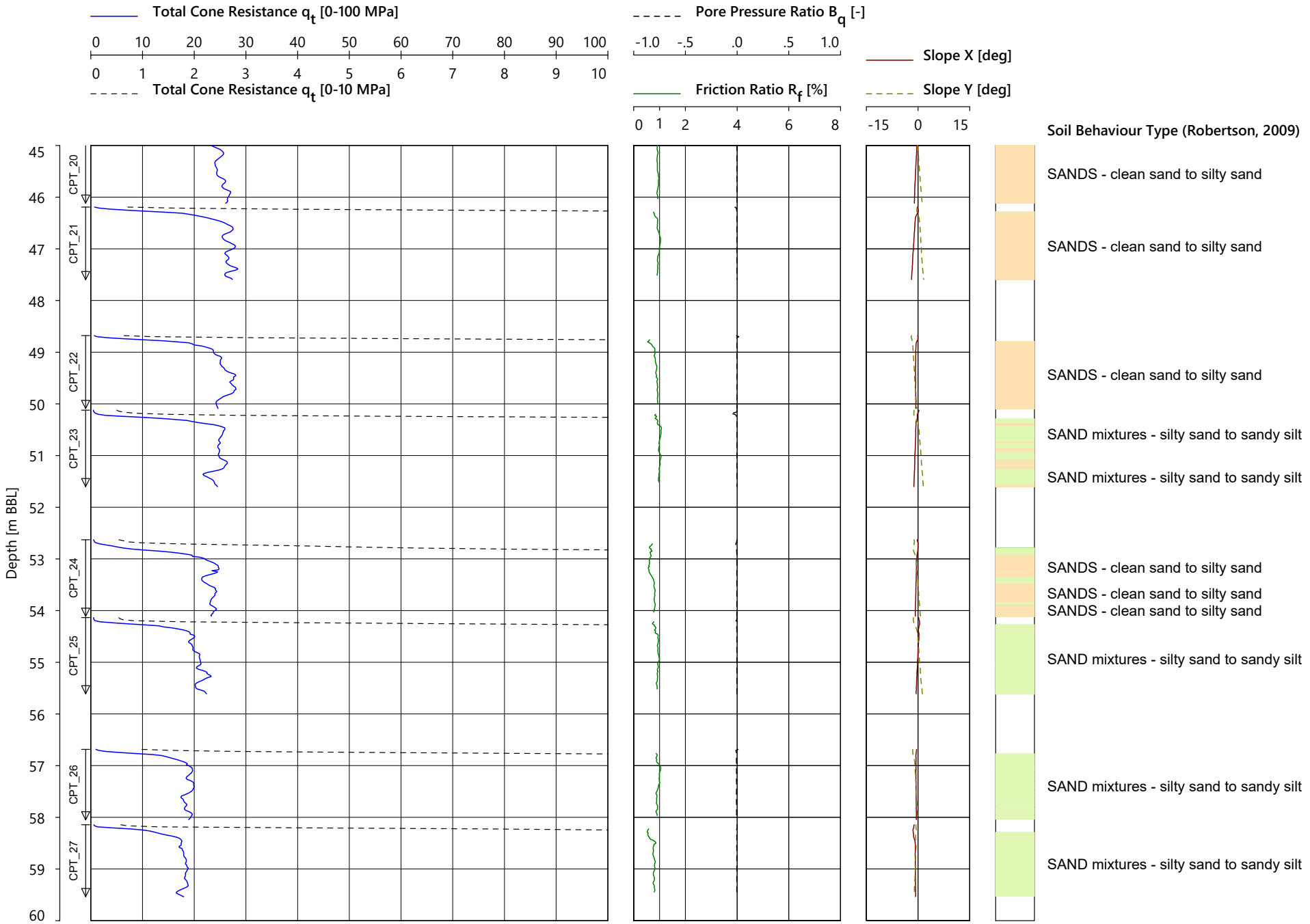

Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	08-Jul-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	29.4
Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : BH20

Coordinates : **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

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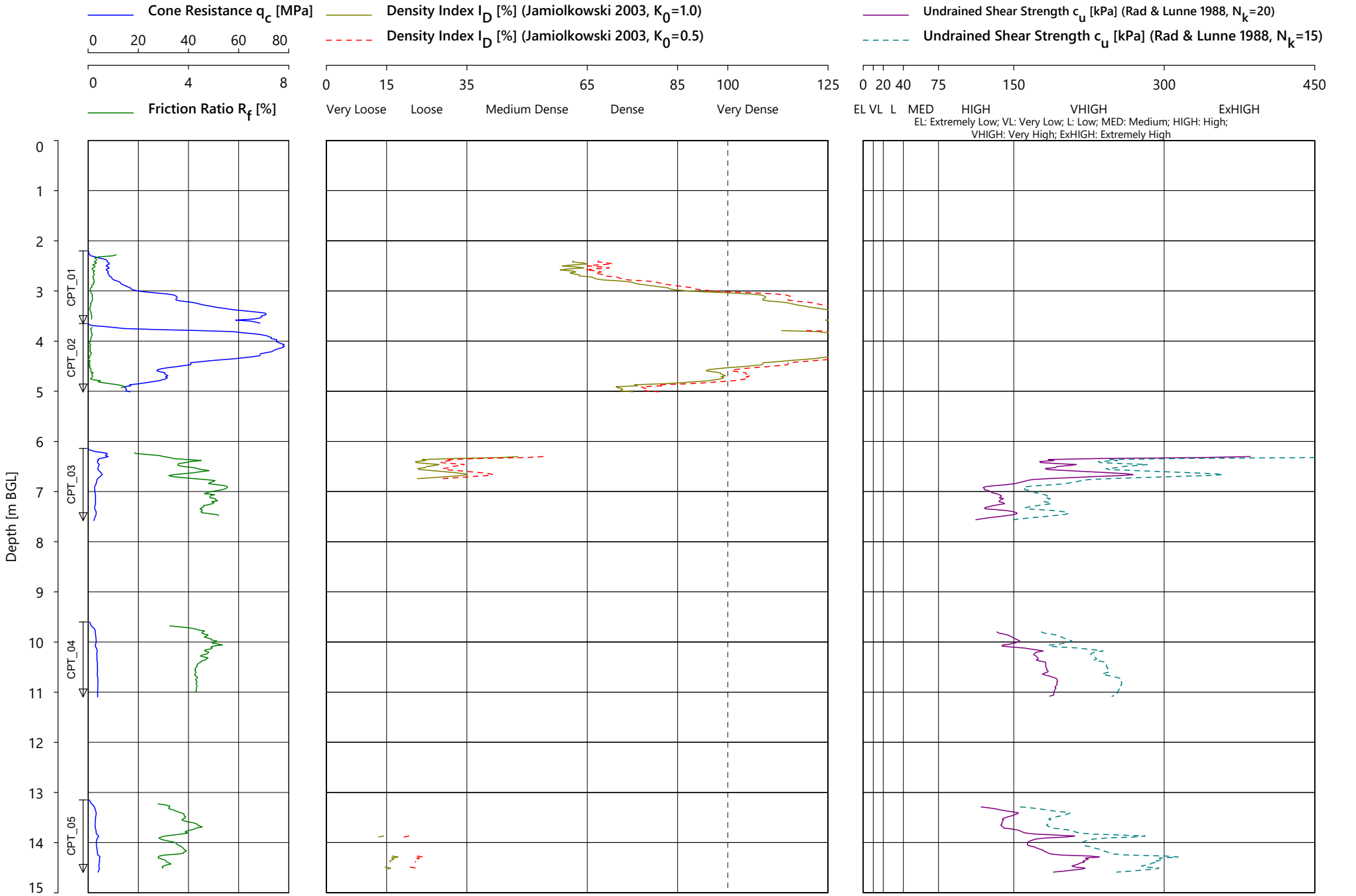
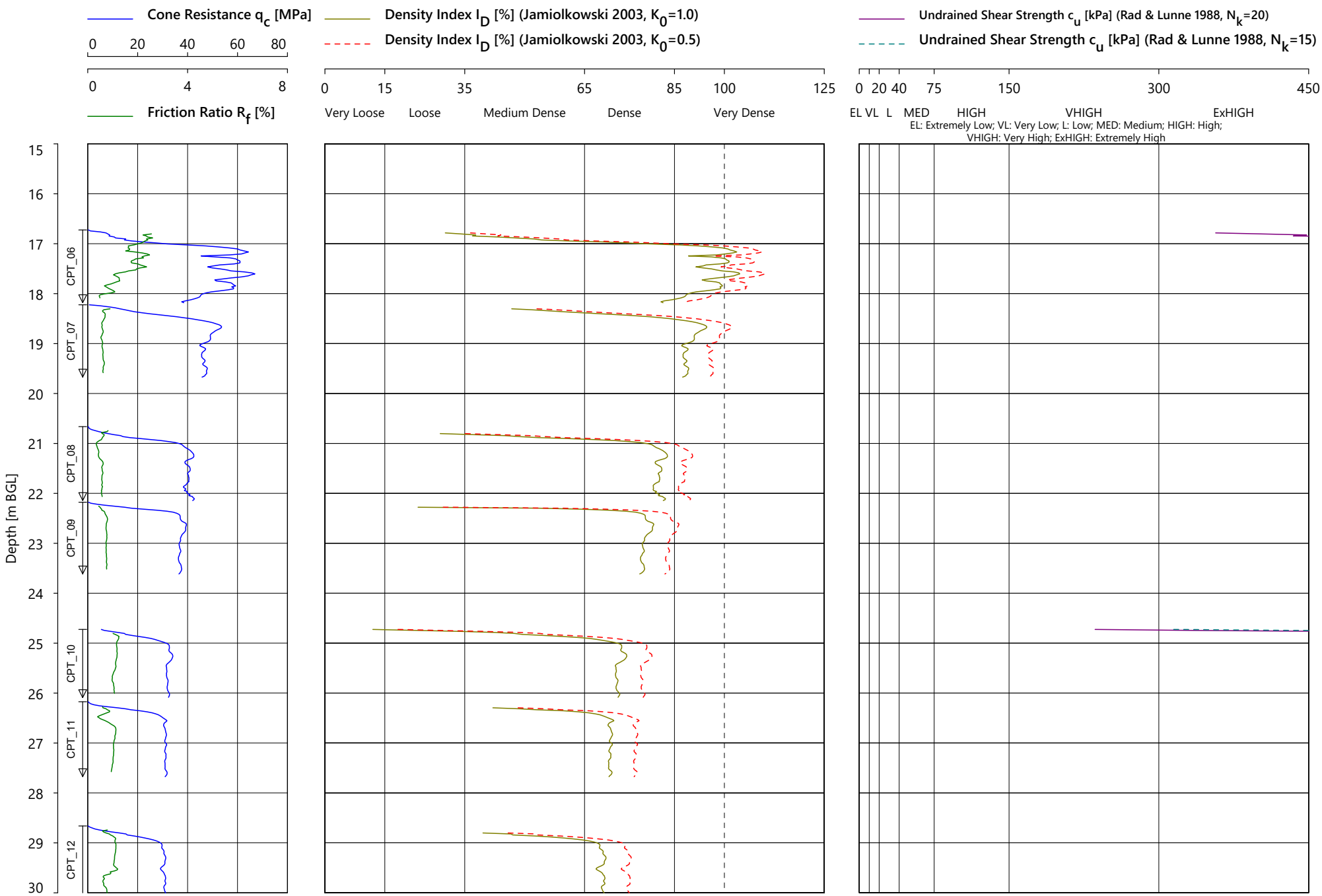
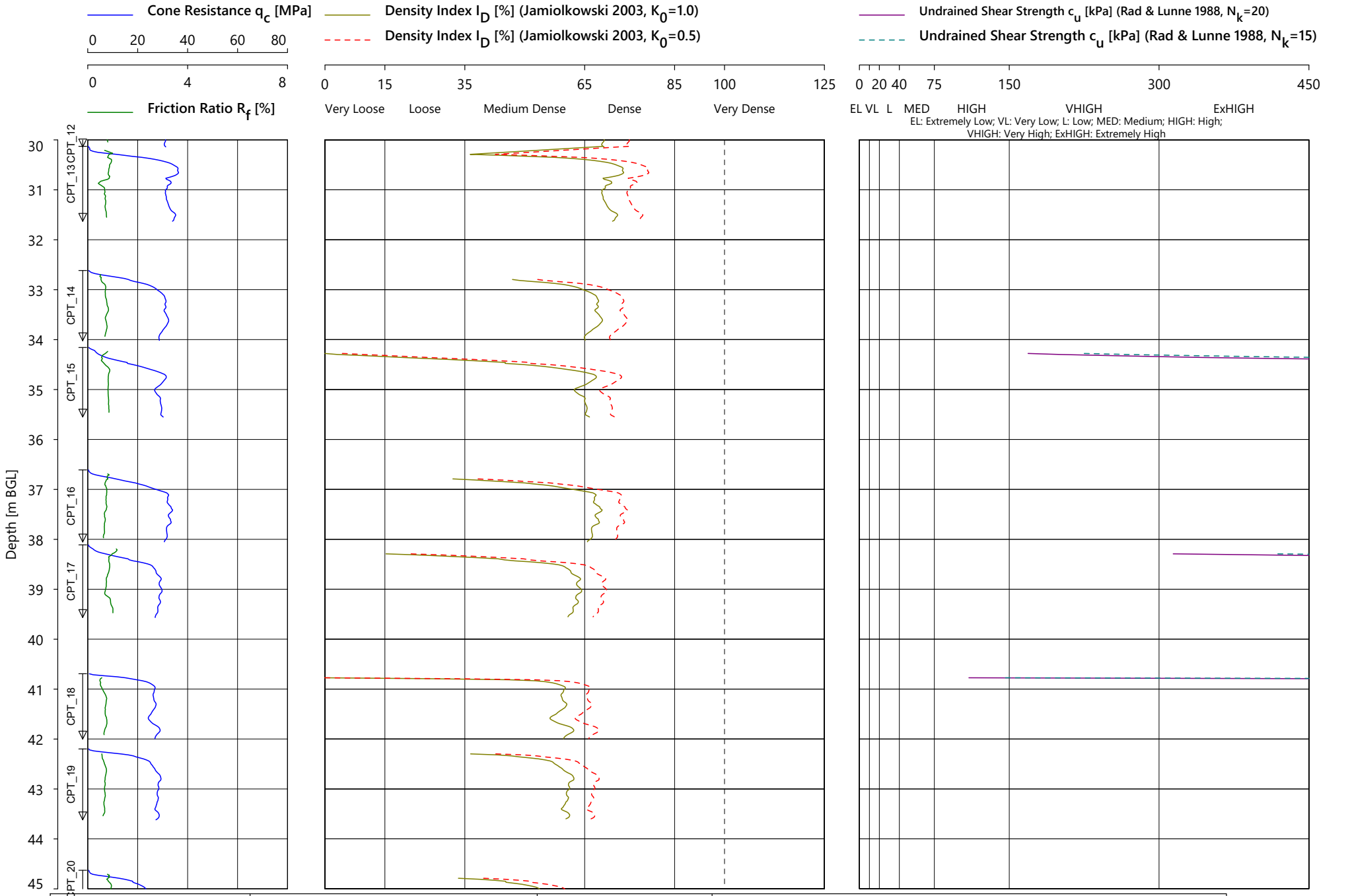


Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH20**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** TL	**Coordinates :** **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 07-Jul-2022	**Water Depth [m] :** 30.1	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** CD	**Location :** BH20
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** E 303136.14 N 5857856.82 **Bed Level [m LAT]:** -28.40
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 07-Jul-2022	**Water Depth [m] :** 29.8		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** TL	**Location :** BH20
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 08-Jul-2022	**Water Depth [m] :** 29.7		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:18

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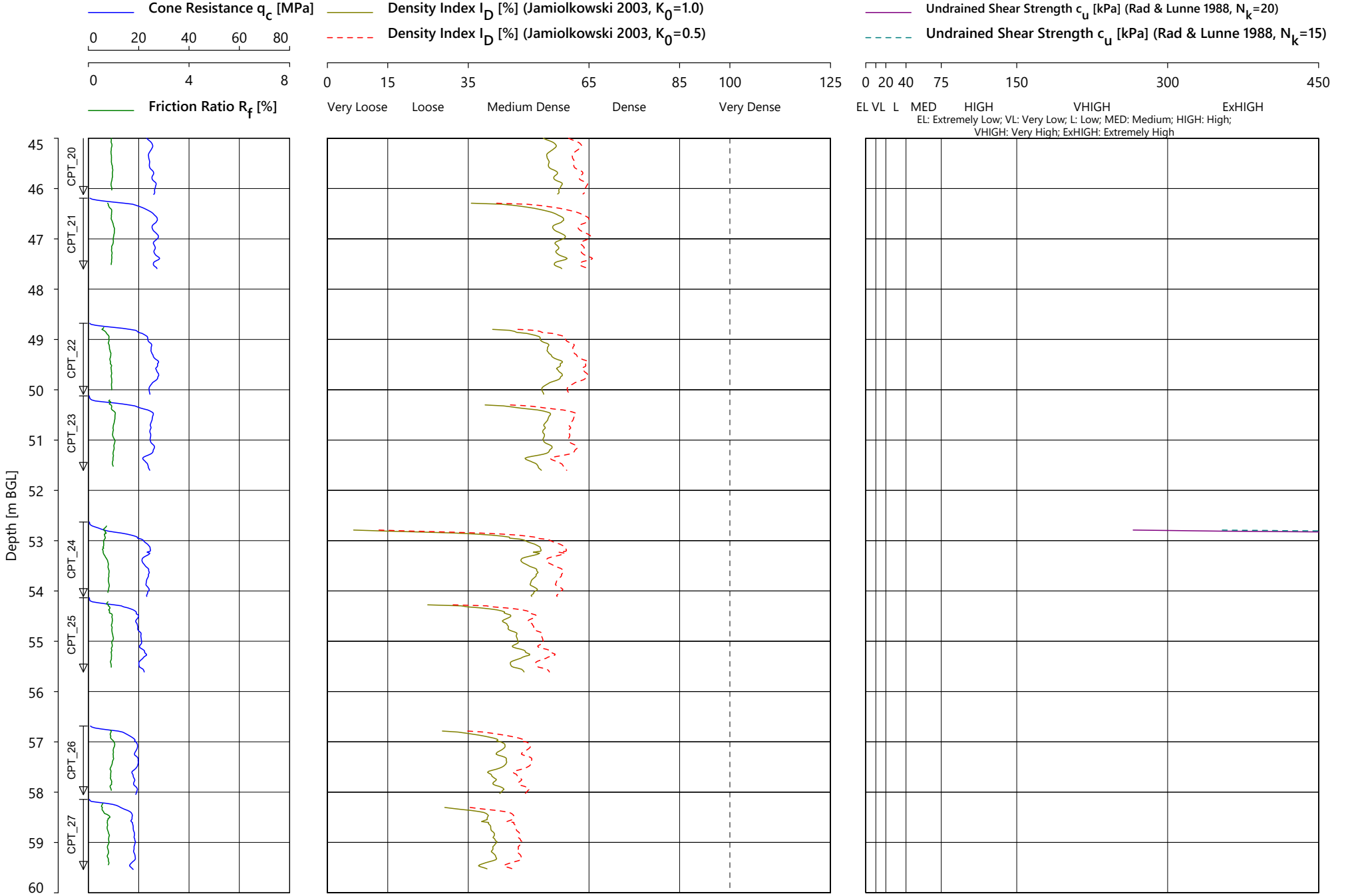

Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH20**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** TL	**Coordinates :** **E** 303136.14 **N** 5857856.82 **Bed Level [m LAT]:** -28.40
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 08-Jul-2022	**Water Depth [m] :** 29.4	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:18

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Location: **BH20**

Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	0.131	0.030	-0.004	-0.012	0.002	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	max. penetration force
CPT_02	0.133	0.031	-0.004	0.064	0.005	0.339	NC	CP10-CF100PB10SN2	1706-2663	0.750	other
CPT_03	0.121	0.030	-0.002	-0.066	0.004	-0.002	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_04	0.061	0.032	0.015	-0.045	0.003	-0.016	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_05	0.073	0.032	-0.002	0.027	-0.002	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_06	0.098	0.030	-0.004	-0.095	0.001	0.053	3	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_07	0.103	0.029	0.011	-0.065	0.001	0.034	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_08	0.089	0.031	-0.005	-0.030	-0.002	0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_09	0.105	0.030	-0.005	-0.030	-0.003	0.002	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_10	0.130	0.029	-0.004	-0.032	0.000	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_11	0.144	0.028	-0.004	-0.047	0.001	0.000	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_12	0.122	0.030	-0.003	-0.022	0.000	-0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_13	0.132	0.029	-0.003	0.466	-0.003	0.594	NC	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_14	0.155	0.027	0.008	-0.085	0.004	-0.011	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_15	0.168	0.026	0.002	-0.121	0.009	-0.004	3	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_16	0.060	0.034	0.002	-0.031	0.002	-0.003	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_17	0.063	0.035	0.002	0.021	-0.005	-0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_18	0.143	0.027	0.003	-0.091	0.005	-0.004	2	CP10-CF100PB10SN2	1706-2663	0.750	max. penetration force
CPT_19	0.094	0.031	-0.005	0.008	-0.002	0.003	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_20	0.127	0.029	-0.005	-0.013	0.000	0.002	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:24

Location: **BH20**

Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_21	0.138	0.027	-0.005	-0.022	0.000	0.003	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_22	0.142	0.027	-0.005	0.005	-0.001	0.002	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_23	0.152	0.027	-0.004	-0.039	0.001	0.002	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_24	0.145	0.027	-0.004	0.002	0.000	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_25	0.139	0.028	-0.004	-0.013	0.001	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_26	0.136	0.027	-0.003	0.024	-0.001	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_27	0.137	0.027	-0.004	-0.038	0.003	0.000	2	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
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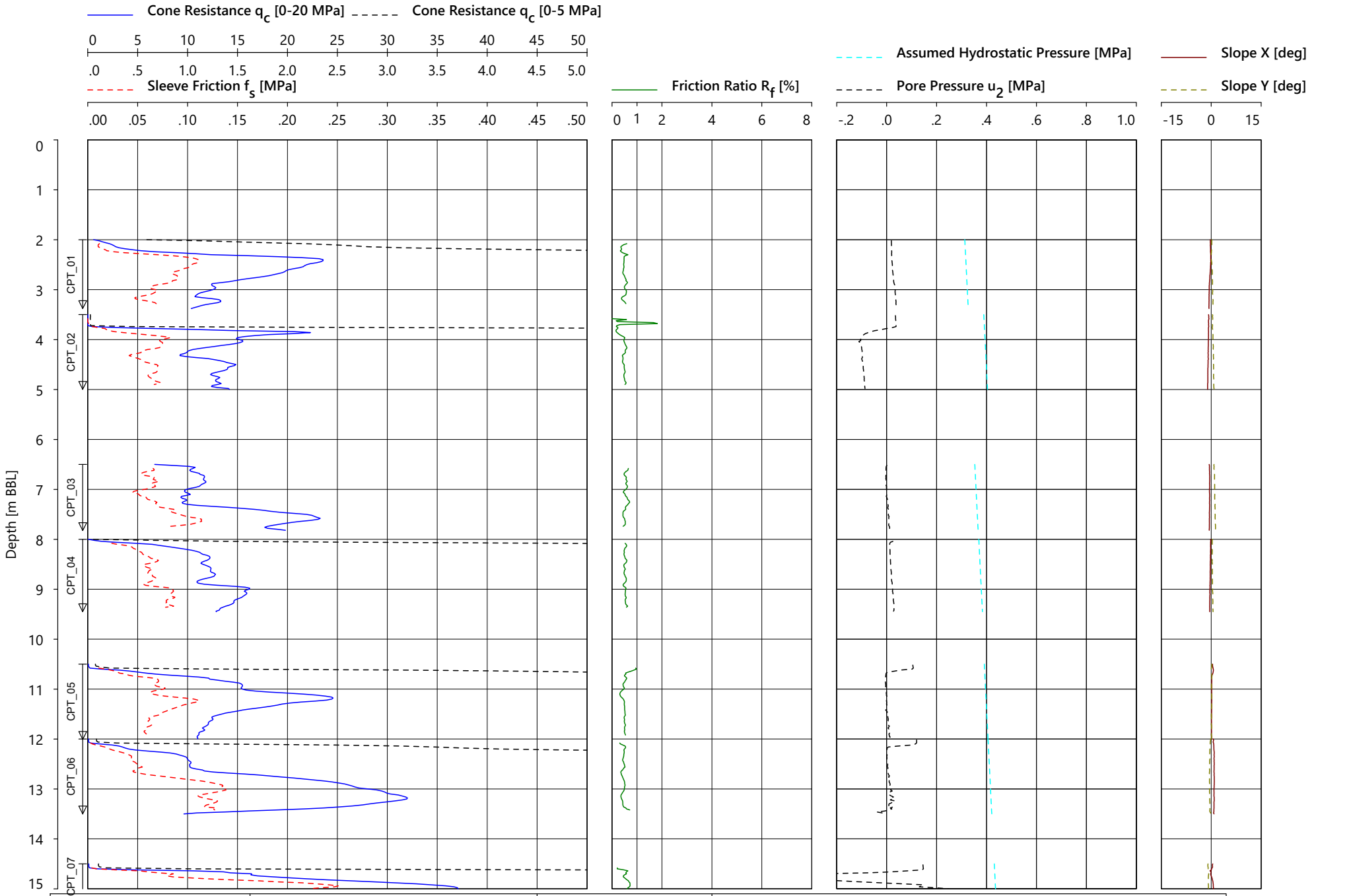
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

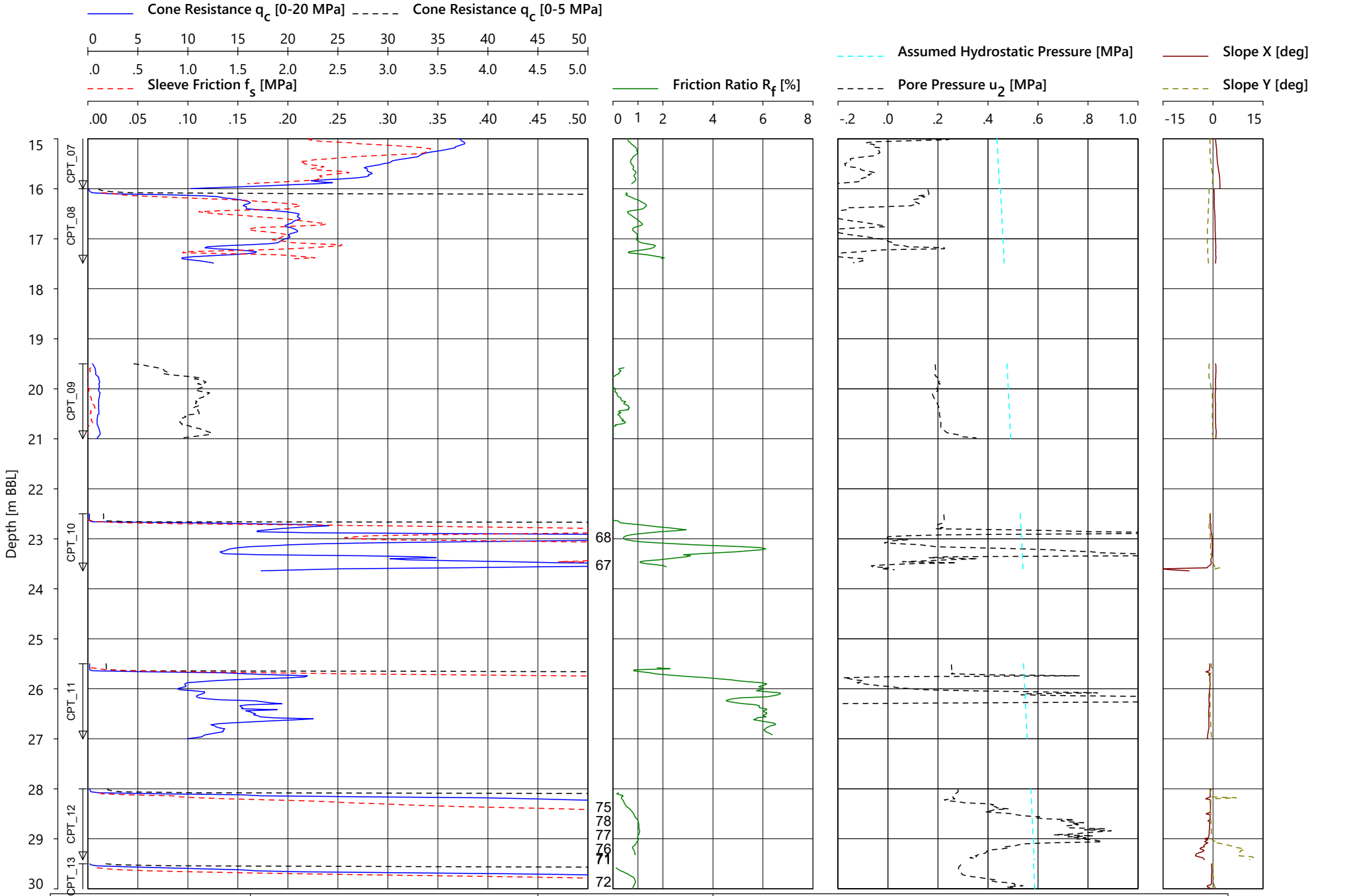
GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:24



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	TL
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	01-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	29.3		

Location : BH26
Coordinates : E 297804.74 N 5842066.43 **Bed Level [m LAT]:** -27.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

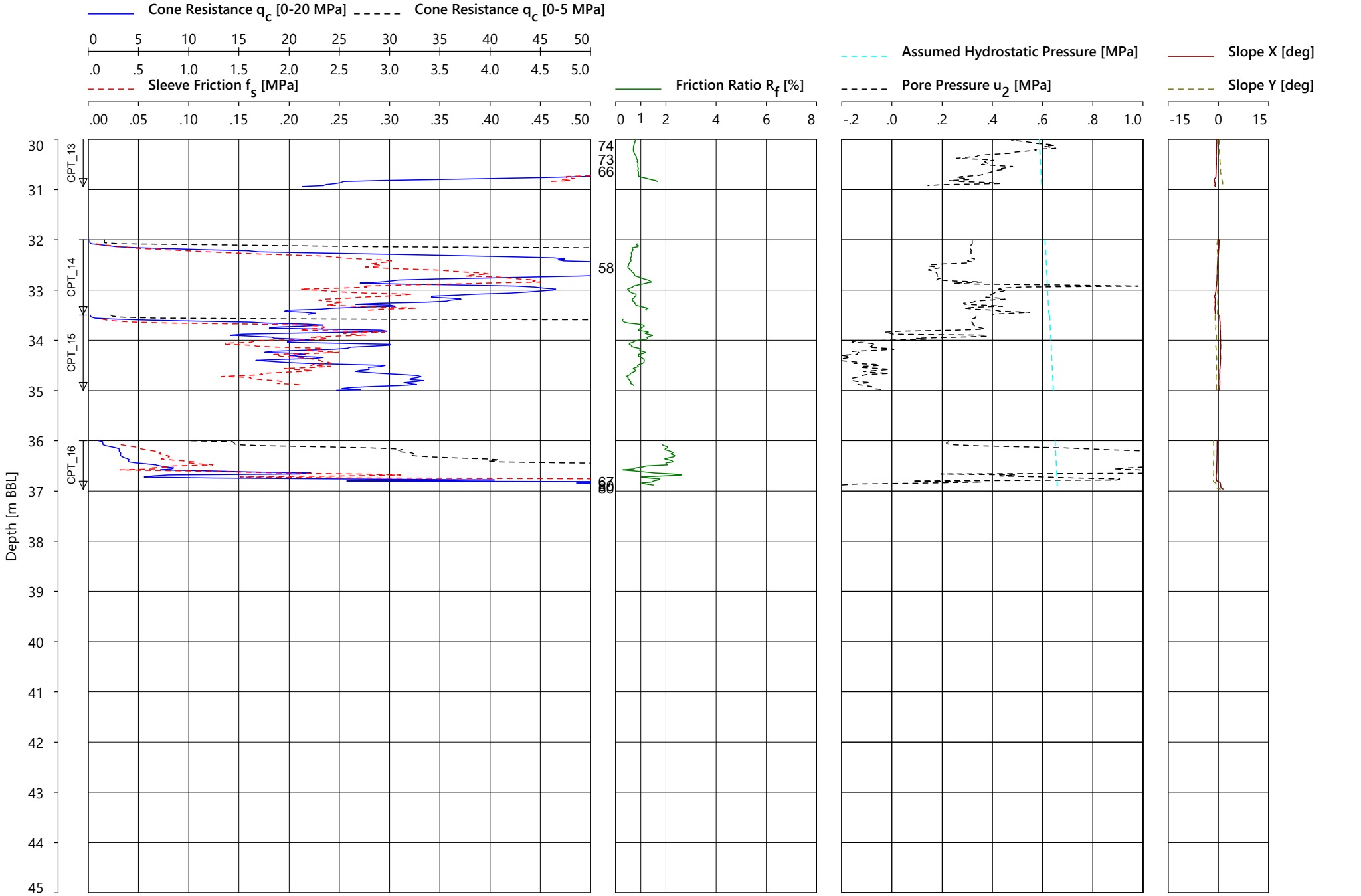
GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:48



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	02-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	28.6		

Location : BH26
Coordinates : E 297804.74 N 5842066.43 **Bed Level [m LAT]:** -27.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

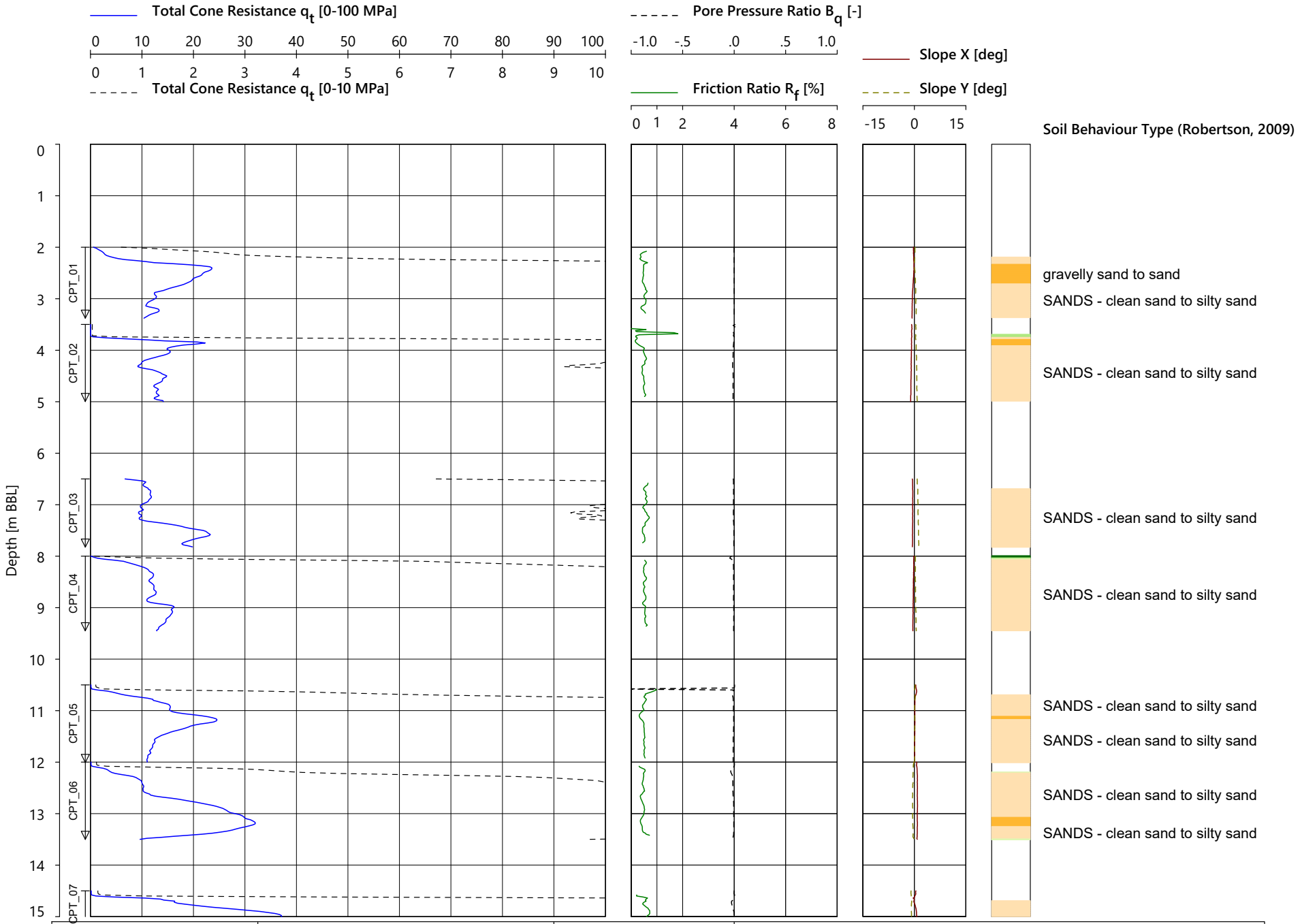
GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:48



Piezocone Measured Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	03-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	28.7		

Location : BH26
Coordinates : **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 01 measured.ucf / 2022-08-04 14:38:48



Piezocone Derived Data

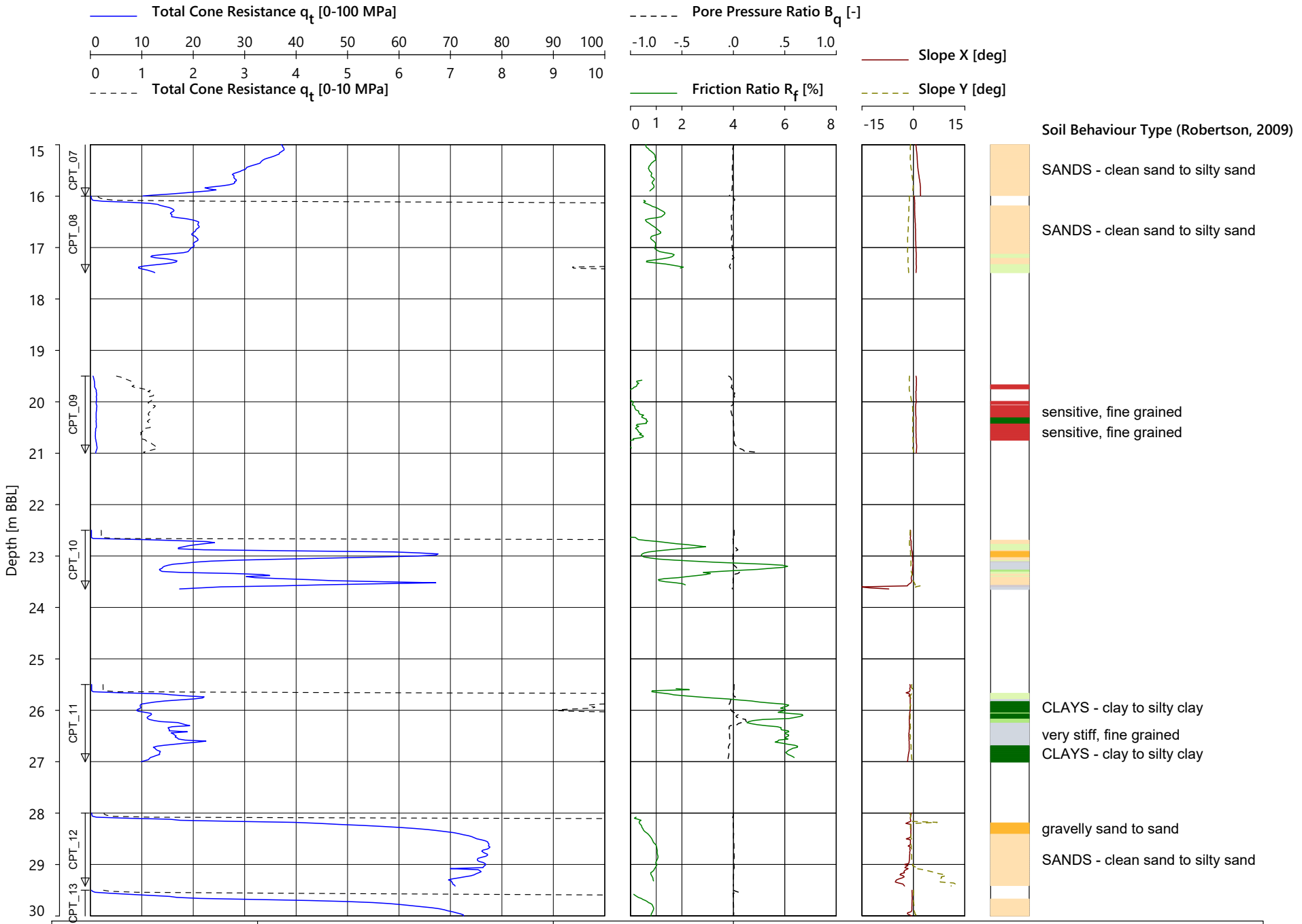
CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	01-Jun-2022

Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	29.3

Operator :	TL
Compiled by :	Onboard
Checked by :	JD

Location : **BH26**
Coordinates : **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:53



Piezocone Derived Data

CPT Rig ID :	GB20
CPT Cone :	1706-2663
Date of Test :	02-Jun-2022
Stop Criterion :	see separate report
Application Class / Type :	see class report
Assumed Soil Unit Weight :	19.0 [kN/m^3]
Water Depth [m] :	28.6
Operator :	CD
Compiled by :	Onboard
Checked by :	JD

Location : **BH26**

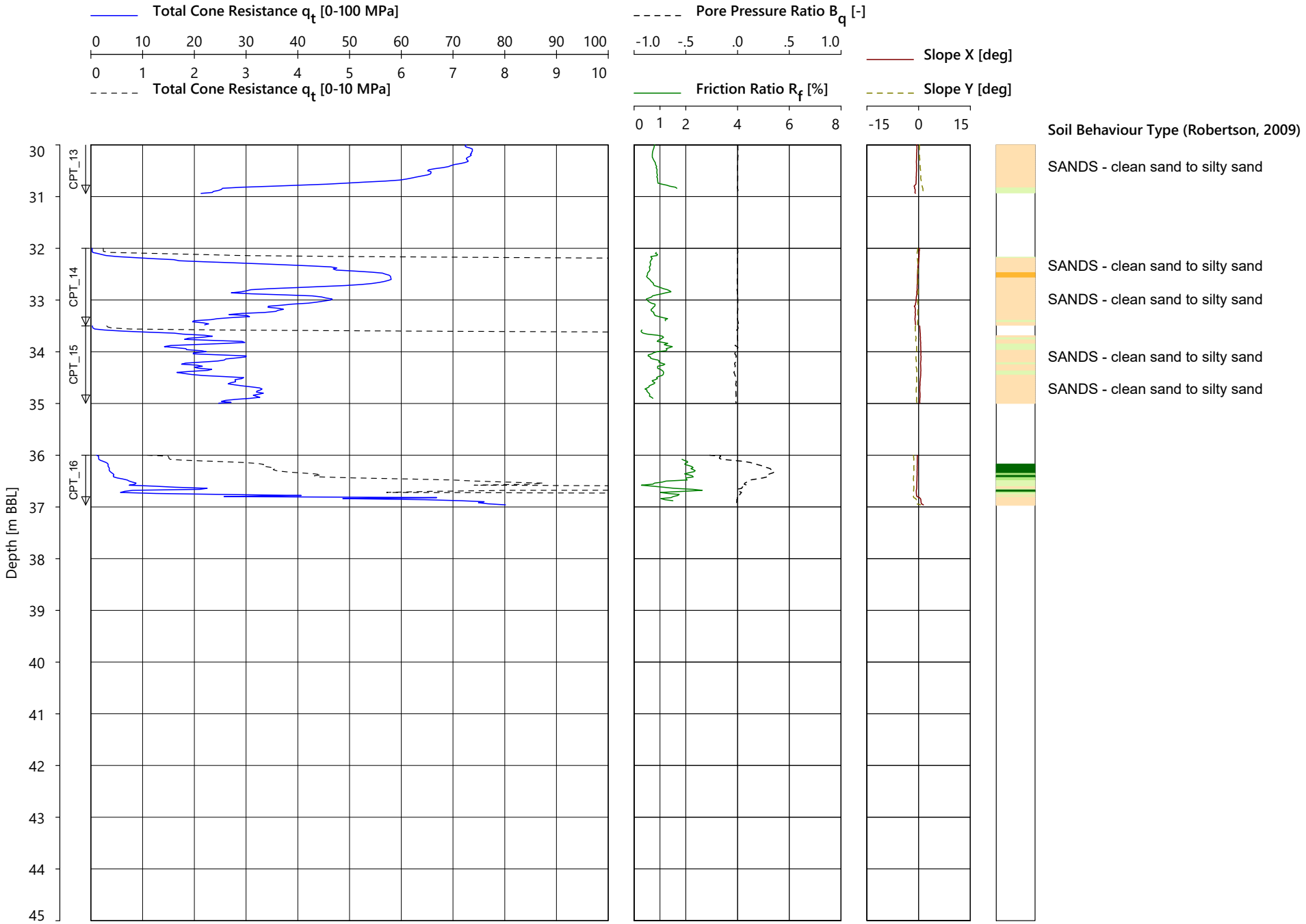
Coordinates : **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80

Project : 210194

F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022

Client : Sure Partners Limited

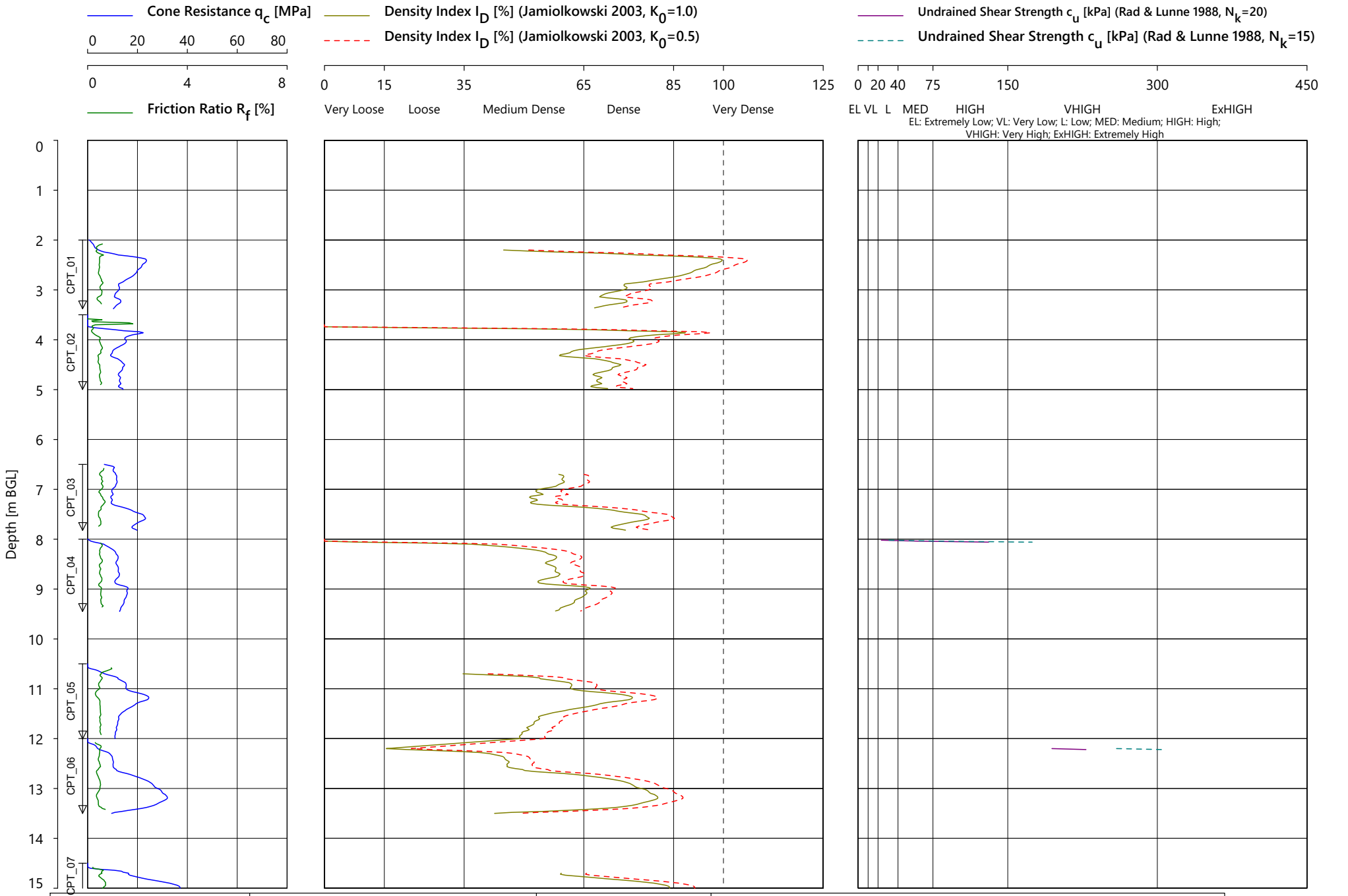
GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:53



Piezocone Derived Data					
CPT Rig ID :	GB20	**Stop Criterion :**	see separate report	**Operator :**	CD
CPT Cone :	1706-2663	**Application Class / Type :**	see class report	**Compiled by :**	Onboard
Date of Test :	03-Jun-2022	**Assumed Soil Unit Weight :**	19.0 [kN/m^3]	**Checked by :**	JD
		Water Depth [m] :	28.7		

Location : BH26
Coordinates : **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
Project : 210194
F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
Client : Sure Partners Limited

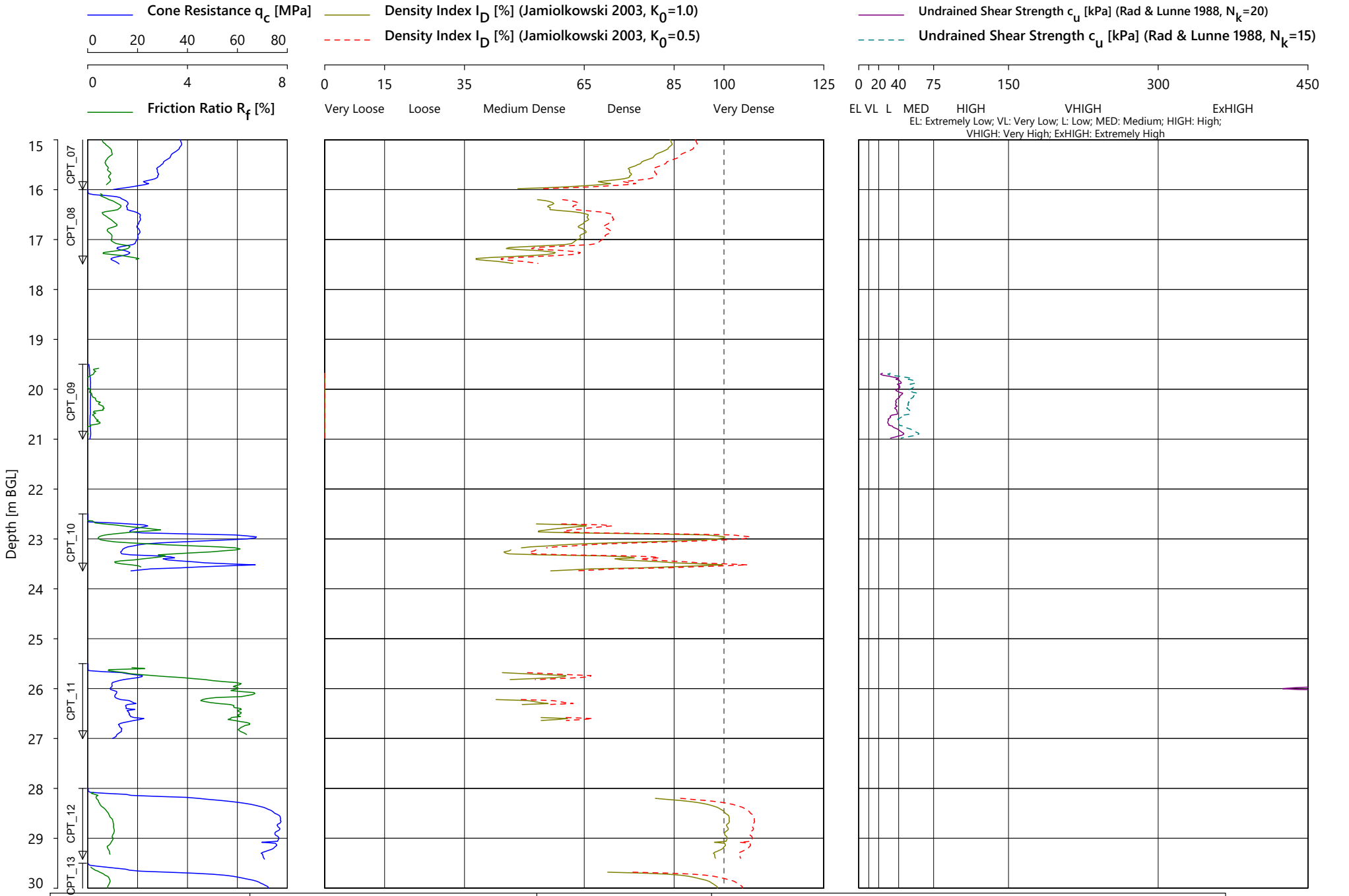
GEOVISUAL 3.6.0 / Derived.ucf / 2022-08-04 14:47:53



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report	**Operator :** TL	**Location : BH26**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Compiled by :** Onboard	**Coordinates :** **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Checked by :** JD	**Project :** 210194
Date of Test : 01-Jun-2022	**Water Depth [m] :** 29.3		F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

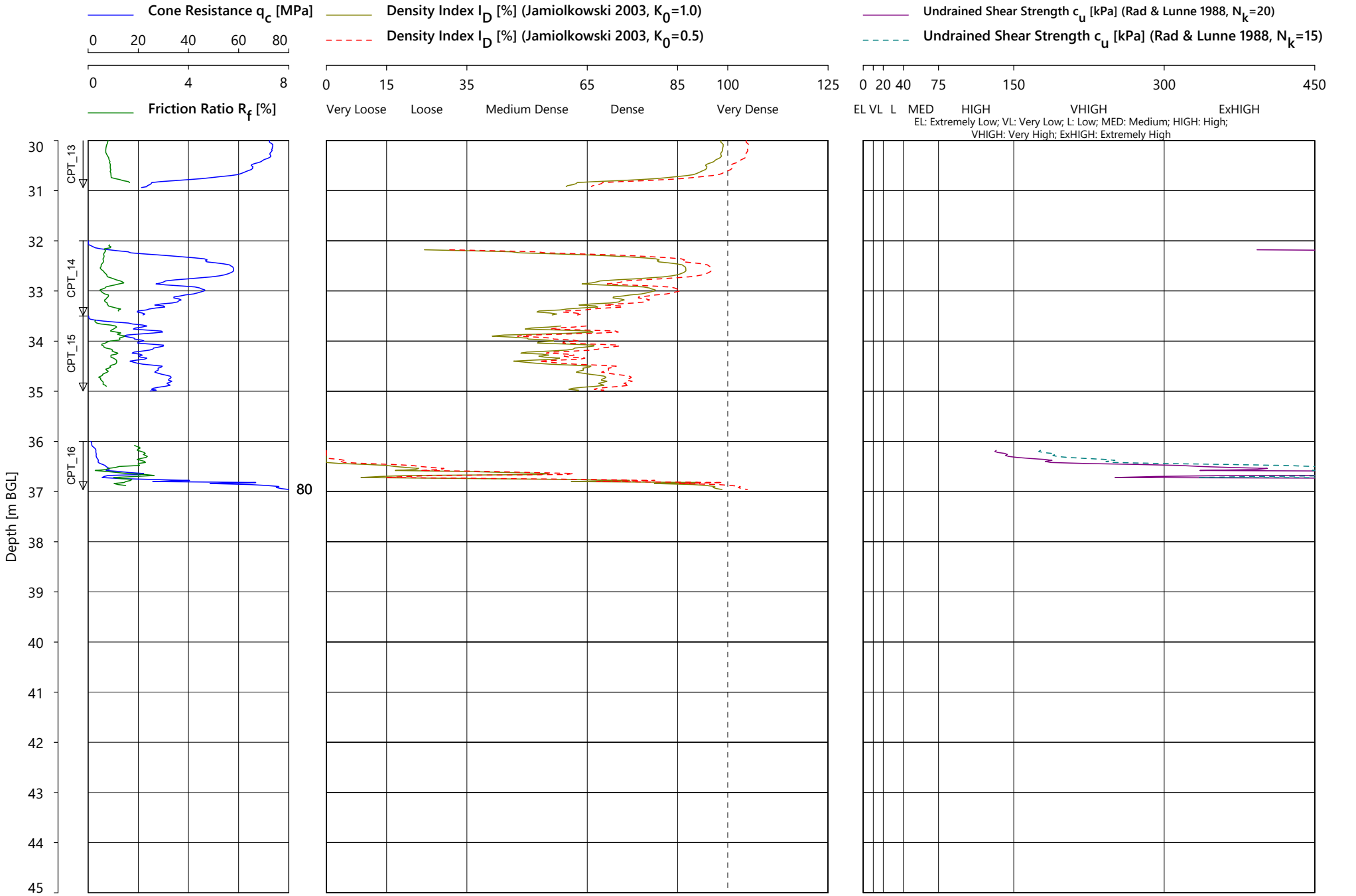
GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:05

FUGRO



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH26**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 02-Jun-2022	**Water Depth [m] :** 28.6	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:06



Density Index and Undrained Shear Strength	**Stop Criterion :** see separate report		**Location :** **BH26**
CPT Rig ID : GB20	**Application Class / Type :** see class report	**Operator :** CD	**Coordinates :** **E** 297804.74 **N** 5842066.43 **Bed Level [m LAT]:** -27.80
CPT Cone : 1706-2663	**Assumed Soil Unit Weight :** 19.0 [kN/m^3]	**Compiled by :** Onboard	**Project :** 210194
Date of Test : 03-Jun-2022	**Water Depth [m] :** 28.7	**Checked by :** JD	F186642 | Arklow Bank Wind Park – Geotechnical Borehole Survey 2022
			Client : Sure Partners Limited

GEOVISUAL 3.6.0 / 03 ID and Cu.ucf / 2022-08-04 14:42:06

FUGRO

Location: **BH26**

Test	Zero Reference Reading at Start of Test			Zero Drift			Zero Comparison - Application Classes (ISO 19901-8:2014)	Probe Type / ID. Number		Net area Ratio a [-]	Stop Criterion
	q_c [MPa]	f_s [MPa]	u [MPa]	q_c [MPa]	f_s [MPa]	u [MPa]					
CPT_01	0.043	-0.001	-0.010	-0.072	0.000	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_02	0.003	-0.001	-0.009	-0.022	0.000	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_03	0.050	-0.004	-0.009	-0.062	0.001	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_04	0.046	-0.007	-0.009	-0.040	0.002	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	max. penetration force
CPT_05	0.018	-0.006	-0.007	-0.017	0.003	-0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_06	0.010	-0.004	-0.008	-0.037	0.004	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_07	0.049	-0.004	-0.007	-0.059	0.001	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_08	0.025	-0.005	-0.007	-0.031	0.002	0.002	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_09	0.052	-0.005	-0.007	0.000	0.001	-0.002	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_10	0.045	-0.004	-0.009	-0.073	0.010	0.001	2	CP10-CF100PB10SN2	1706-2663	0.750	max. friction value
CPT_11	0.020	0.005	-0.011	-0.060	0.000	0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_12	0.042	0.001	-0.002	-0.050	0.003	-0.004	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_13	0.045	0.002	-0.003	-0.057	0.003	-0.003	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_14	0.036	0.003	0.001	-0.077	0.006	-0.005	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_15	0.049	0.005	-0.006	-0.055	0.001	0.000	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached
CPT_16	0.023	0.006	-0.009	-0.003	0.004	0.001	1	CP10-CF100PB10SN2	1706-2663	0.750	end depth reached

Key: q_c : cone resistance f_s : sleeve friction u : pore pressure -- : no value available

Notes:
1. A zero reference reading is a value presented in units of measurement results; the value itself is a conversion from system output, usually in digital counts; it has no explicit physical meaning
2. Zero reference readings can be taken at atmospheric conditions; some types of offshore tests allow taking zero reference readings close to seafloor
3. Zero Drift is the difference between zero reference readings at the start of the test and at the end of the test
4. Zero Comparison - Application Classes refers to comparison of zero drift values with minimum accuracy values for CPT Application Classes 1 to 3 (ISO 19901-8:2014) and Application Classes 1 to 4 (BS EN ISO 22476-1:2012)
5. Application Class 1 is intended for very soft to soft soil deposits, i.e. where maximum value of q_c for penetration phase of test is less than 0.5 MPa to 1 MPa
6. For a test with no pore pressure measurement, Zero Comparison – Application Classes Class 1 is inappropriate

CONE PENETRATION TEST - ZERO DRIFT

GEOVISUAL 3.6.0 / Zero load and application class.ucf / 2022-08-04 12:07:13

FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	MSI
Model	4MXB1000, S/N: 2453

Depth Encoder Specification	
Brand	Dynapar
Model	Quadrature
Pulses per revolution	200
Operational Voltage	5V

Logging Interface	
Brand	GeoVista
Model	Platform Logger
Serial Number	6531

CALIBRATION PARAMETERS	
Calibration distance	**75m**
Amount of pulses per rotation*	**600**
Wheel Circumference	**0.99878**
Verification run error**	**+/- 0.03m**

***For depth encoder mode**

****Verification error per calibration distance**

Date of Calibration: 09-Feb-22

Calibrated by: H Spence
M Magrosky

Place of Calibration: Wallingford

TOOL CERTIFICATE

Product type : ABI40-GR-2G
Serial Number : 182007
Build date : Jul-2021 (Last Service)

Advanced Logic Technology

Acoustic Head

Serial Number :	161109	
Tests :	Synchronisation motor amplitude	
	Pressure test (200bars)	
	Air and water acoustic test	
	Acoustic tests in 3" and 6" jig	

Deviation sensor

Model :	APS544	
Serial Number :	14588	
Firmware version :	4.3	
Tests :	Calibration Certificate from Applied Physics	
	Temperature test (0-70°C)	
	Qualification test in reference tool (Rolling test)	

Cartridge

Serial Number :	182007		
Firmware :	1.09		
Tests :	Current consumption	45 mA	
	Main voltage input	120 V	

3" Natural GR Module

Serial Numbers :	Crystal :	020218C	
	PMT 9924B :	10141	
	Alim PMT PS1805/5-02 :	45413	
Crystal type : **Scintillation**	Dimension : **7/8"x3"**	Mat. = **NaI(Tl)**	
Tests :	Total Count Natural Gamma Calibration Factor		1.0873
	Reference source 700 API		
	Oven test - Signal drift verification		

Final test

Tests :	Marker position	353.8 deg	
	Qualification test (Rolling test)* - Measuring :	Azimuth :	Tilt :
		+/- 1.252 deg	+/- 0.280 deg
	Burn-in (1 night)		0
	Telemetry tests on reference winch :	Cable Length	Baud rate
	Mono Cond. 1/8"	1500m	125kb/s
	4 Cond 3/16"	480m	500kb/s
	Field test		

* Acceptable tolerance max : Azimuth = +/- 2.5 deg
Tilt = +/- 0.5 deg

Calibration Responsible : Date : 26/07/21

Validation by :

ALT sa. Bâtiment A, Route de Niederpallen, L-8506 Redange-sur-Attert Luxembourg
T:(352)23 649 289 F:(352)23 649 364 e-mail: sales@alt.lu RCS:2001-22 10559 VAT: LU18773332

TOOL CERTIFICATE

Product type :	**ABI40-GR-2G**
Serial Number :	**221319**
Build date :	**mars-22**

Advanced Logic Technology

Acoustic Head

Serial Number :	**220908**
Tests :	Synchronisation motor amplitude
	Pressure test (200bars)
	Air and water acoustic test
	Acoustic tests in 3" and 6" jig

Deviation sensor

Model :	**Zitn**
Serial Number :	**2103036**
Firmware version :	**1.3**
Tests :	Calibration Certificate from Applied Physics
	Temperature test (0-70°C)
	Qualification test in reference tool (Rolling test)

Cartridge

Serial Number :	**221319**		
Firmware :	**1.2**		
Tests :	Current consumption	**65 mA**	
	Main voltage input	**120 V**	

3" Natural GR Module

Serial Numbers :	Crystal :	**120321K**	
	PMT 9924B :	**105649**	
	Alim PMT PS1805/5-02 :	**501372**	
Crystal type : **Scintillation**	Dimension : **7/8"x3"**	Mat. = **NaI(Tl)**	
Tests :	Total Count Natural Gamma Calibration Factor		**1.06932**
	Reference source 700 API		
	Oven test - Signal drift verification		

Final test

Tests :	Marker position	**0.0 deg**	
	Qualification test (Rolling test)* - Measuring :	Azimuth :	Tilt :
		+/- 1.792 deg	**+/- 0.243 deg**
	Burn-in (1 night)		
	Telemetry tests on reference winch :	Cable Length	Baud rate
	Mono Cond. 1/8"	**1500m**	**125kb/s**
	4 Cond 3/16"	**480m**	**500kb/s**
	Field test		

* Acceptable tolerance max : Azimuth = +/- 2.5 deg
Tilt = +/- 0.5 deg

Calibration by :

Validation by :

Date : 01/04/22

ALT sa. Bâtiment A, Route de Niederpallen, L-8506 Redange-sur-Attert Luxembourg
T:(352)23 649 289 F:(352)23 649 364 e-mail: sales@alt.lu RCS:2001-22 10559 VAT: LU18773332

Fugro GeoService Ltd., Fugro House, Hithercroft Road, Wallingford, OX10 9RB, United Kingdom
web: www.fugro.com

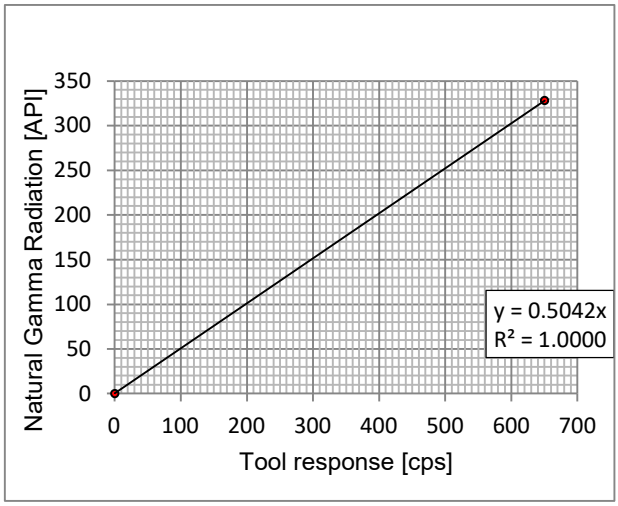
GR

QC/QA-TEST-CERTIFICATE

(v.10/2019)

Date:	12-04-2022	**Surface Unit:**	Matrix 0916
Engineer:	D Gartner	**Laptop:**	FGSLWALL387
Winch:	GV-510 (S/N:6677)	**Tool:**	ALT ABI-GR (2G) 182007

Radiation [API]	Response [cps]
0.00	0.00
328.00	650.55



NATURAL GAMMA OK

This is to certify that the specified tool has been assembled, calibrated and quality controlled according to Fugro's calibration and verification standards. The system will comply with product technical specifications if used in accordance with recommended operating procedures.

Certificate valid until: 12-04-2023

Date	**Name/Signature (wireline engineer)**
09-05-22	Denes Gartner

Fugro GeoService Ltd., Fugro House, Hithercroft Road, Wallingford, OX10 9RB, United Kingdom
web: www.fugro.com

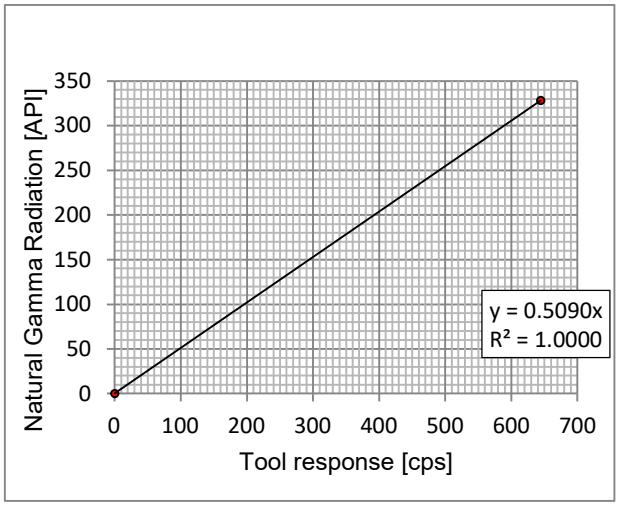
GR

QC/QA-TEST-CERTIFICATE

(v.10/2019)

Date:	13-04-2022	**Surface Unit:**	Matrix 0916
Engineer:	D Gartner	**Laptop:**	FGSLWALL387
Winch:	GV-510 (S/N:6677)	**Tool:**	ALT ABI-GR (2G) 221319

Radiation [API]	Response [cps]
0.00	0.00
328.00	644.34



NATURAL GAMMA OK

This is to certify that the specified tool has been assembled, calibrated and quality controlled according to Fugro's calibration and verification standards. The system will comply with product technical specifications if used in accordance with recommended operating procedures.

Certificate valid until: 13-04-2023

Date	**Name/Signature (wireline engineer)**
14-04-22	Denes Gartner

FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	Geovista
Model	550
S/N	4874

Depth Encoder Specification	
Brand	Lika Electronics
Model	CK46
Pulses per revolution	1000
Operational Voltage	5V

Logging Interface	
Brand	ALT
Model	MATRIX
Serial Number	916

CALIBRATION PARAMETERS	
Calibration distance	**75m**
Amount of pulses per rotation*	**4000**
Wheel Circumference	**0.398354**
Verification run error**	**+/- 0.01m**

***For depth encoder mode**

****Verification error per calibration distance**

Date of Calibration: 12-May-22 Calibrated by: H. Spence

Place of Calibration: Wallingford

FUGRO GEOSERVICES LIMITED

TENSION CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	550
S/N	4874

Logging Interface	
Brand	ALT
Model	ScoutPro
Serial Number	211314

CALIBRATION PARAMETERS

		Readings
Calibration weight : Low	**8.4 kg**	**1344.3**
Calibration weight : High	**23.2 kg**	**1469.5**
Tension Gauge CalA:		**0.118243**
Tension Gauge CalB:		**-150.562**

Date of Calibration: 12-May-22

Calibrated by: Denes Gartner
Hamish Spence

Place of Calibration: Wallingford

Plate 3.133

FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	550
S/N	4874

Depth Encoder Specification	
Brand	Lika Electronics
Model	CK46
Pulses per revolution	1000
Operational Voltage	5V

Logging Interface	
Brand	GeoVista
Model	GVLogger
Serial Number	7270

CALIBRATION PARAMETERS	
Calibration distance	**75m**
Amount of pulses per rotation*	**1000**
Wheel Circumference	**0.398354**
Verification run error**	**+/- 0.01m**

***For depth encoder mode**

****Verification error per calibration distance**

Date of Calibration: 12-May-22 Calibrated by: Hamish Spence

Place of Calibration: Wallingford

MANUFACTURER'S CERTIFICATE **No. GV550**	*Date:* 17th July 2018

We,

Geovista Ltd
Unit 10, Cae Ffwt Business Park
Glan Conwy LL28 5SP, United kingdom

declare under our sole responsibility that the products listed below have been checked and /or tested in accordance with our quality assurance procedure for this equipment.

Item	*Description*	*Serial No.*	*Manufacturer*
1	GV530 Winch	4874	Geovista Ltd

Tension Calibration Certificate

	Calibration Parameters	
Low	**5**	**40018**
High	**40**	**42088**
M coefficient	**0.0169080**	
C coefficient	**39722**	

Issued by: Simon Fletcher
Production Manager

FOR AND ON BEHALF OF
GEOVISTA LTD
Reg. No. 3620302 / VAT No. 682082530

Fugro GeoService Ltd., Fugro House, Hithercroft Road, Wallingford, OX10 9RB, United Kingdom
web: www.fugro.com

CAL3

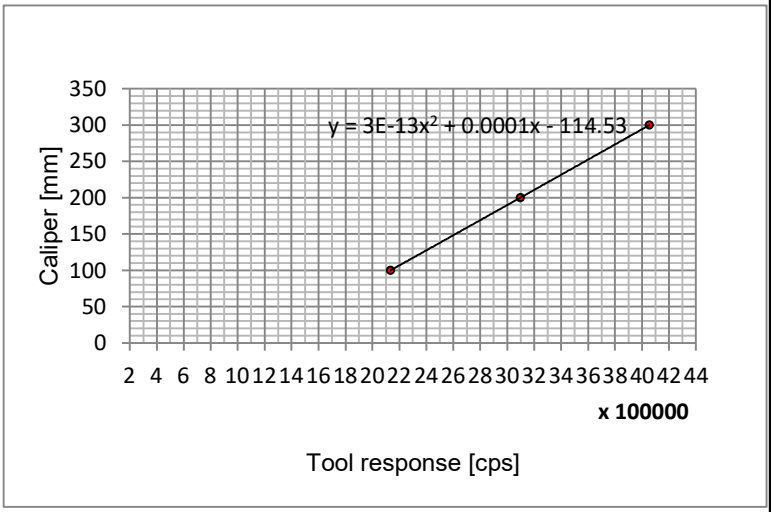
QC/QA-TEST-CERTIFICATE

(v.10/2019)

Date:	11-05-2022	**Surface Unit:**	GV 7270
Engineer:	H Spence	**Laptop:**	FGSLWALL378
Winch:	GV-550 (S/N:4874)	**Tool:**	GV-CAL3-6631

3-ARM-CALIPER

Caliper [mm]	Response [cps]
100	2084427.70
200	3047702.32
300	4005774.90



3-ARM-CALIPER OK

This is to certify that the specified tool has been assembled, calibrated and quality controlled according to Fugro's calibration and verification standards. The system will comply with product technical specifications if used in accordance with recommended operating procedures.

Certificate valid until: 11-05-2023

Date	**Name/Signature (wireline engineer)**
11-05-22	Denes Gartner

CAL3

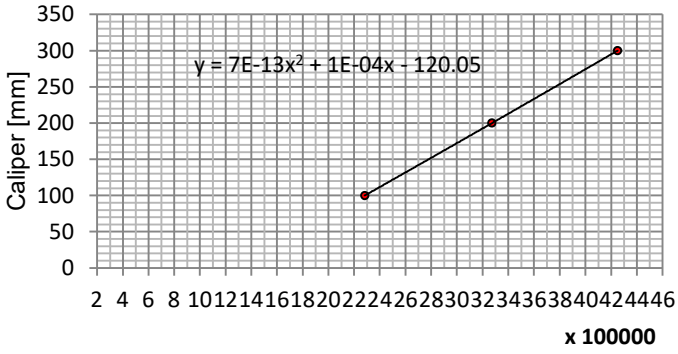
QC/QA-TEST-CERTIFICATE

(v.10/2019)

Date:	11-05-2022	**Surface Unit:**	GV 7270
Engineer:	H Spence	**Laptop:**	FGSLWALL378
Winch:	GV-550	**Tool:**	GV-CAL3-7651

3-ARM-CALIPER

Caliper [mm]	Response [cps]
100	2232031.08
200	3222701.52
300	4199468.39



3-ARM-CALIPER OK

This is to certify that the specified tool has been assembled, calibrated and quality controlled according to Fugro's calibration and verification standards. The system will comply with product technical specifications if used in accordance with recommended operating procedures.

Certificate valid until: 11-05-2023

Date	**Name/Signature (wireline engineer)**
11-05-22	Denes Gartner

PSL

QC/QA-TEST-CERTIFICATE
(v.01/2017)

Date:	10-05-22	**Surface Unit:**	GV 7270
Engineer:	D Gartner	**Laptop:**	FGSLWALL378
Winch:	GV 550 S/N:4874	**Tool:**	PSL-6527

TEST NAME	TEST DATE	STATUS
TOOL FUNCTIONALITY TEST (as per tool operations manual)	10-05-22	**PASSED**

Certificate Valid Until: 10-05-23

Date	**Location**	**Name/Signature (wireline engineer)**
10-05-22	Wallingford, UK	Denes Gartner

Fugro GeoService Ltd., Fugro House, Hithercroft Road, Wallingford, OX10 9RB, United Kingdom
web: www.fugro.com

PSL

QC/QA-TEST-CERTIFICATE
(v.01/2017)

Date:	10-05-22	**Surface Unit:**	GV 7270
Engineer:	D Gartner	**Laptop:**	FGSLWALL378
Winch:	GV 550 S/N:4874	**Tool:**	PSL-6529

TEST NAME	TEST DATE	STATUS
TOOL FUNCTIONALITY TEST (as per tool operations manual)	10-05-22	**PASSED**

Certificate Valid Until: 10-05-23

Date	**Location**	**Name/Signature (wireline engineer)**
10-05-22	Wallingford, UK	Denes Gartner

Plate 3.139

FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	MSI
Model	4MXB1000, S/N: 2453

Depth Encoder Specification	
Brand	Dynapar
Model	Quadrature
Pulses per revolution	200
Operational Voltage	5V

Logging Interface	
Brand	ALT
Model	Scout
Serial Number	211315

CALIBRATION PARAMETERS	
Calibration distance	**75m**
Amount of pulses per rotation*	**2400**
Wheel Circumference	**0.99878**
Verification run error**	**+/- 0.03m**

***For depth encoder mode**

****Verification error per calibration distance**

Date of Calibration: 09-Sep-22

Calibrated by: H Spence
M Magrosky

Place of Calibration: Wallingford

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
Borehole: BH01	Fugro Site Manager: Robert Fraser	10/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 303547.62, N: 5866922.76	Grid Reference: UTM Zone 30N Elevation: -24.80 m LAT

Borehole Depth (Drilling):	75.01 m
Borehole Depth (Wireline):	71.93 m
Logging Datum:	Mud Level
Logged Interval:	43.81 m - 71.66 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence & J. Fernandez Processed By: H. Spence

Remarks:

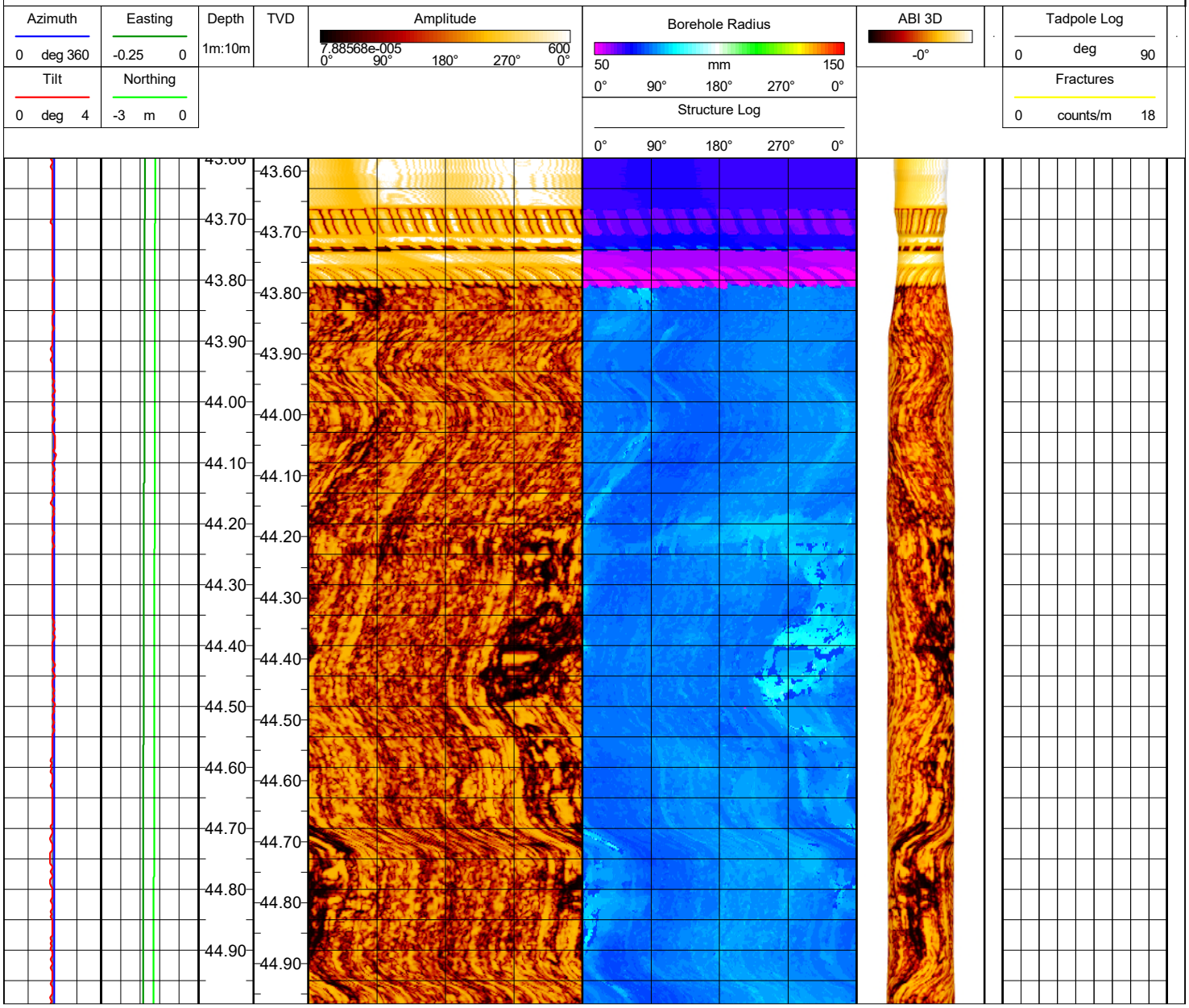
Borehole was logged in four sections. The casing started off at a depth of 49.80 m before being pulled back to 43.90 m, 32.00 m, and finally to 20.00 m. Borehole originally drilled to 75.01 m however the borehole collapsed to 71.66 m before the first wireline run. ABI logs merged at 54.50 m. ABI logging of Sections 3 and 4 was aborted due to expected low quality and borehole stability concerns. Limited number of structures visible due to the nature of the soft sedimentary clay.

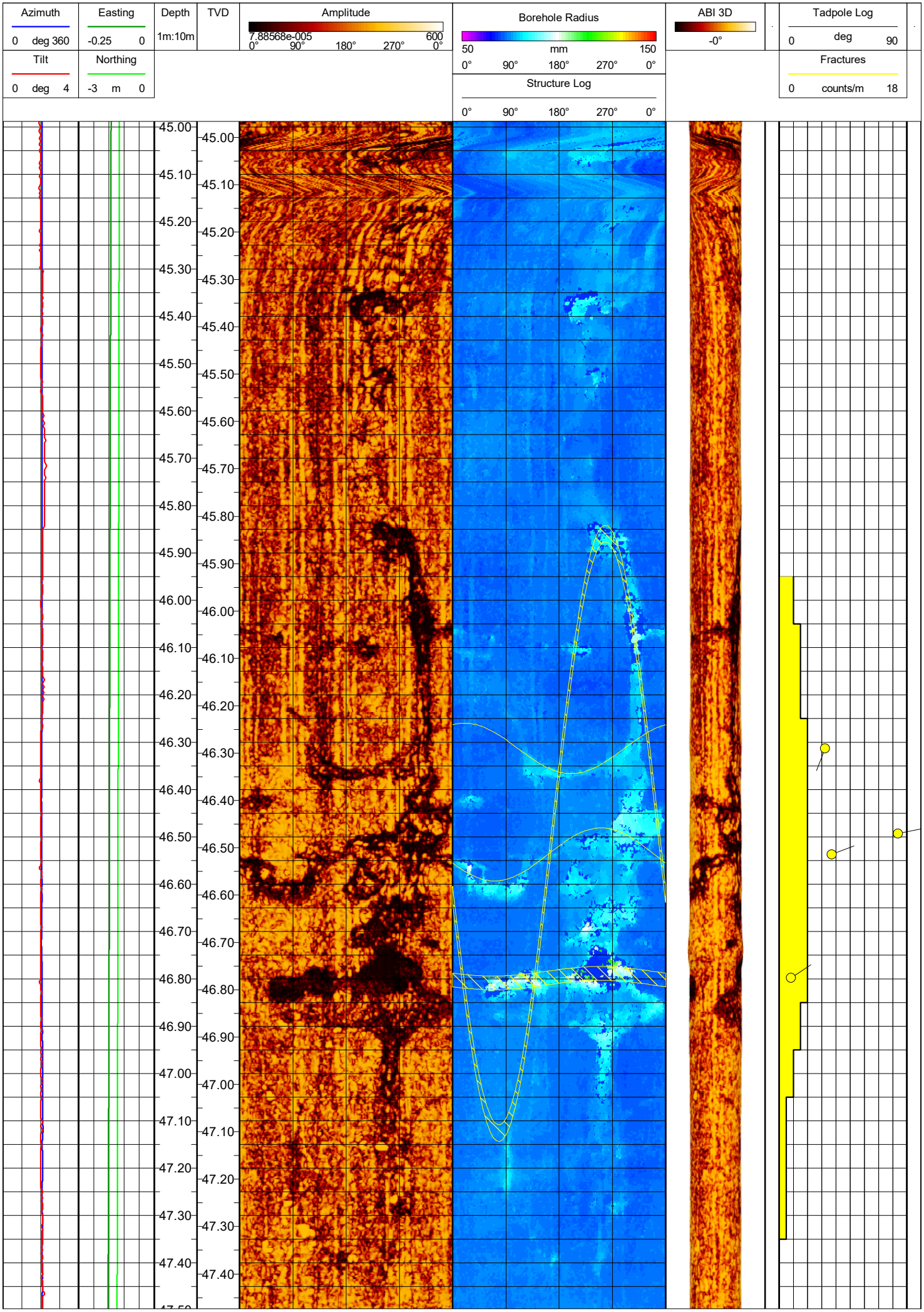
BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	16.70 m
146 mm	16.70 m	75.01 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 43.30 m	2.00 m
Steel	175 mm	- 43.30 m	16.70 m
Steel (Section 4)	146 mm	- 43.30 m	20.00 m
Steel (Section 3)	146 mm	- 43.30 m	32.00 m
Steel (Section 2)	146 mm	- 43.30 m	43.90 m
Steel (Section 1)	146 mm	- 43.30 m	49.80 m

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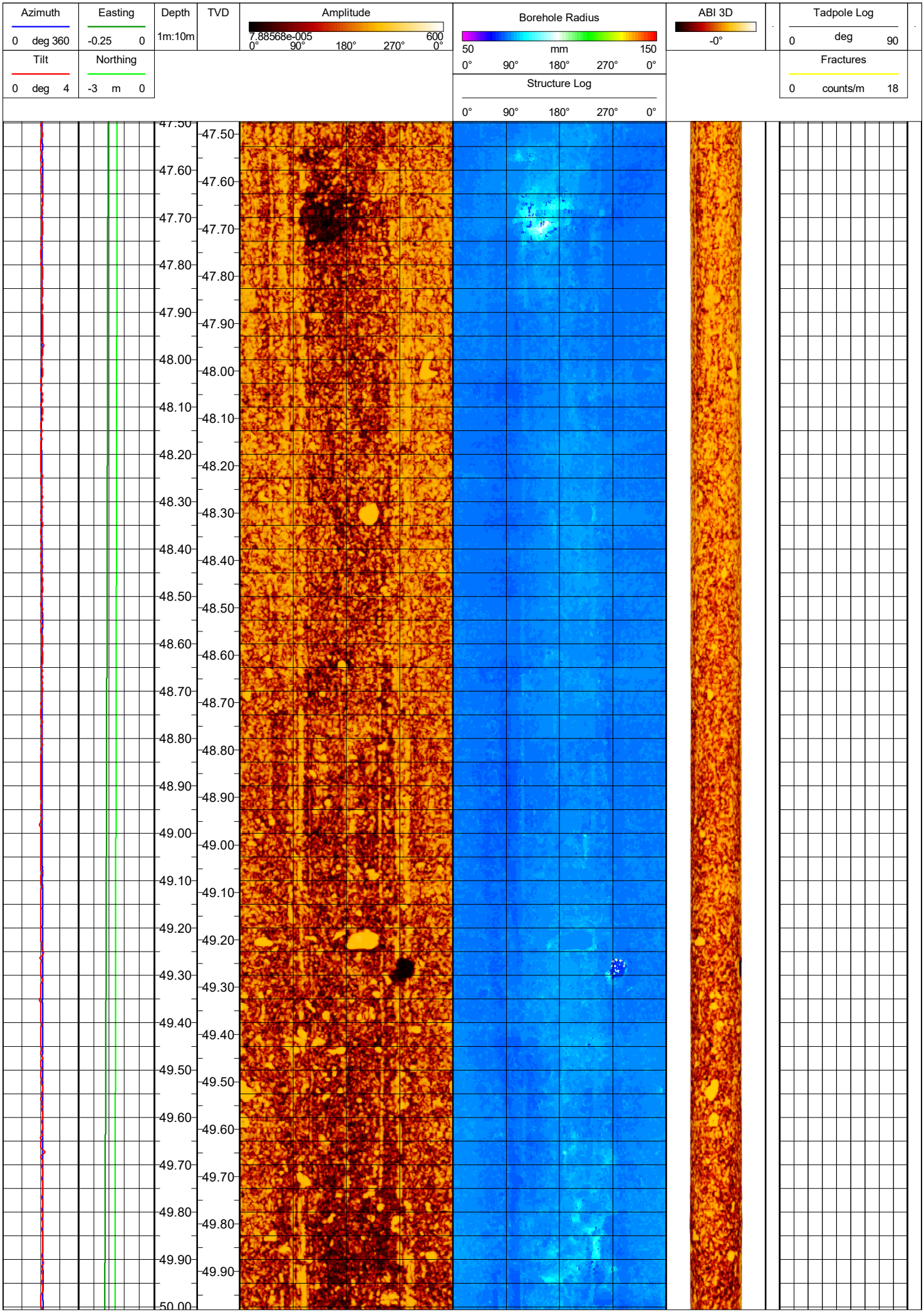
0 deg 360
Tilt
0 deg 4
Easting
-0.25 0
Northing
-3 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005 600
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
45.80
45.90
46.00
46.10
46.20
46.30
46.40
46.50
46.60
46.70
46.80
46.90
47.00
47.10
47.20
47.30
47.40

Plate 3.142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Easting
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Depth
1m:10m
TVD
Amplitude
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0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Fractures
0 counts/m 18
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00
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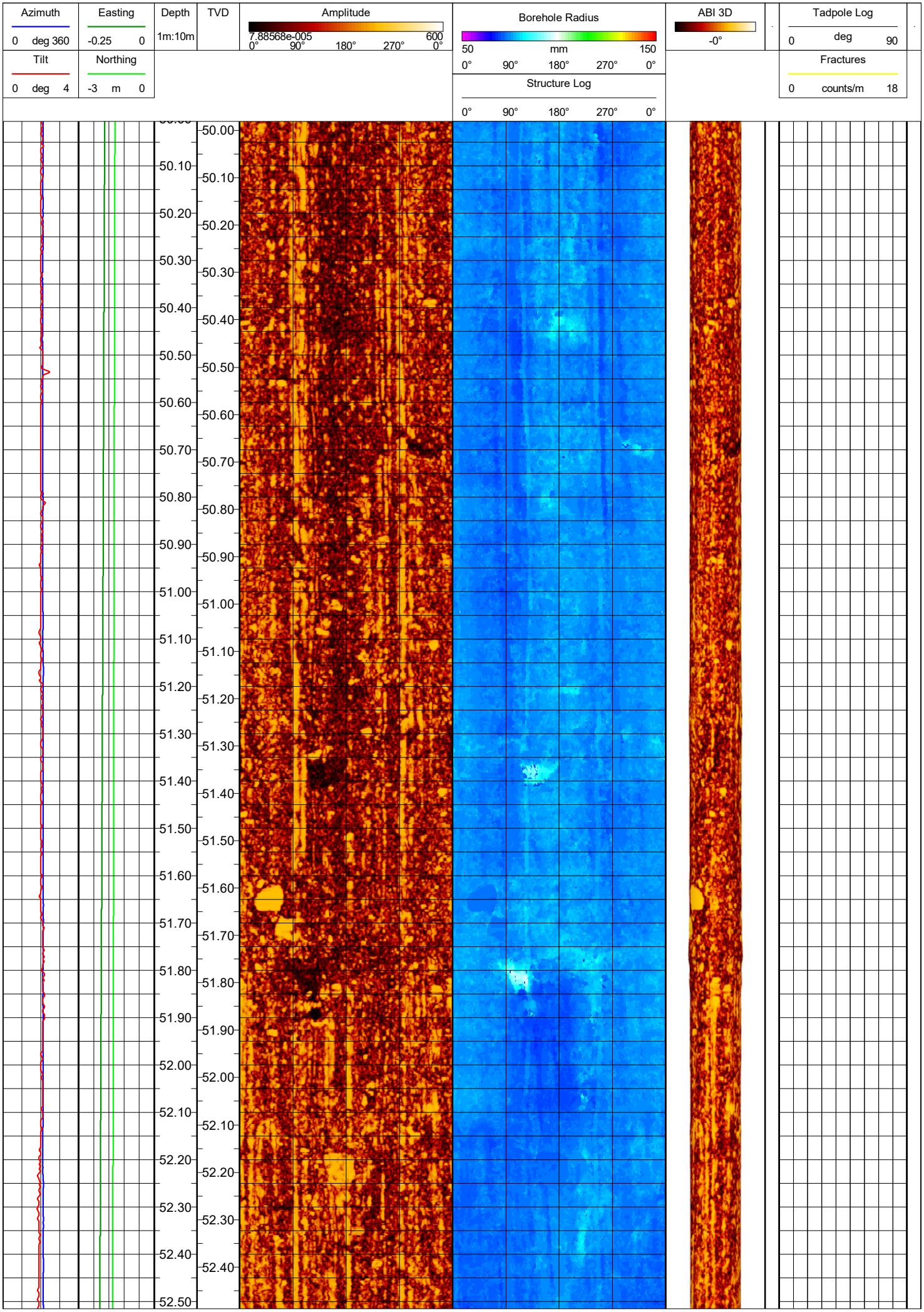
49.40
49.50
49.60
49.70
49.80
49.90
50.00

Plate 3.143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Easting
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Depth
1m:10m
TVD
Amplitude
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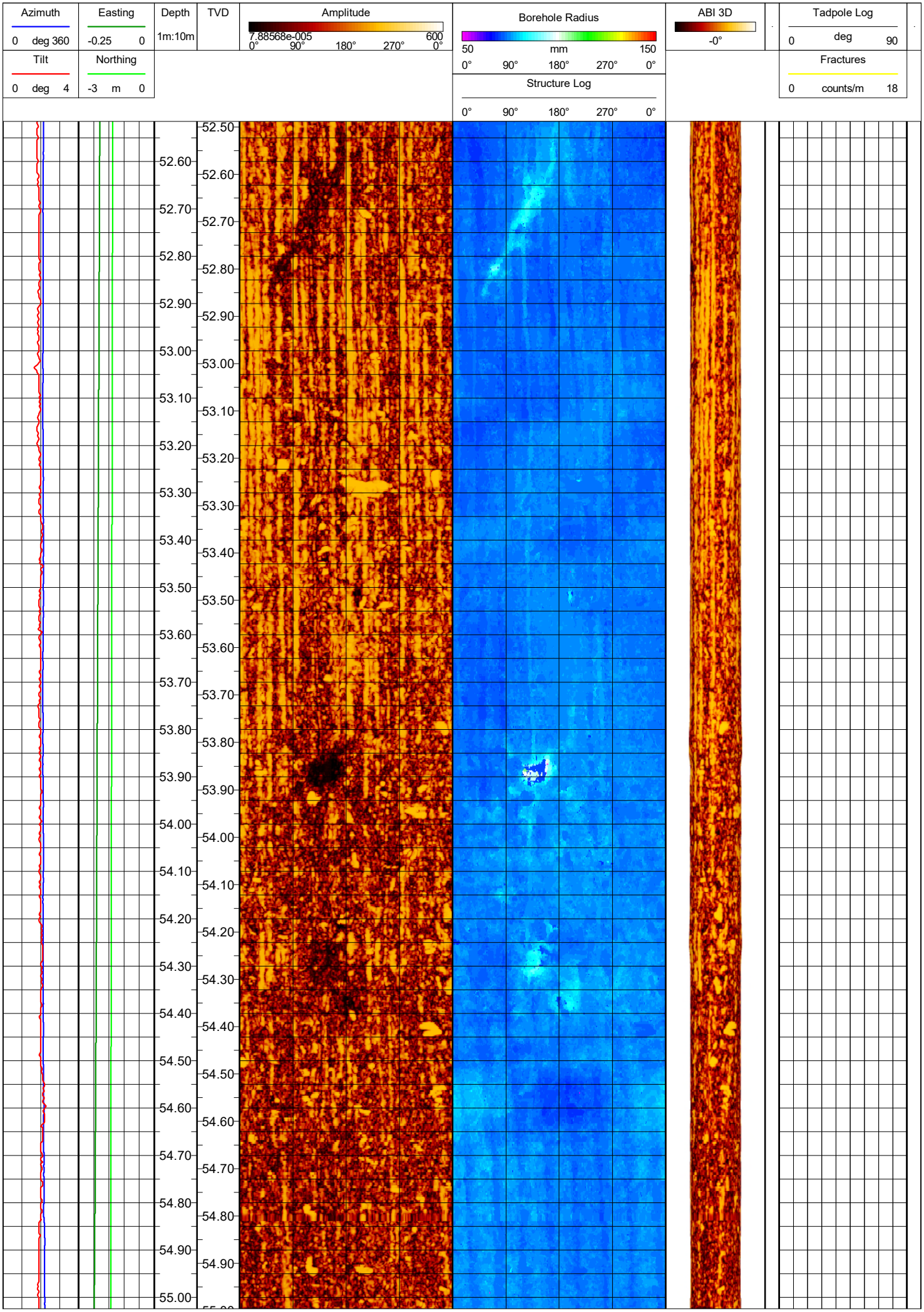
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Fractures
0 counts/m 18
50.00
50.10
50.20
50.30
50.40
50.50
50.60
50.70
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60
51.70
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50

Plate 3.144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Easting
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Depth
1m:10m
TVD
Amplitude
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0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Fractures
0 counts/m 18
52.50
52.60
52.70
52.80
52.90
53.00
53.10
53.20
53.30
53.40
53.50
53.60
53.70
53.80
53.90
54.00
54.10
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54.30
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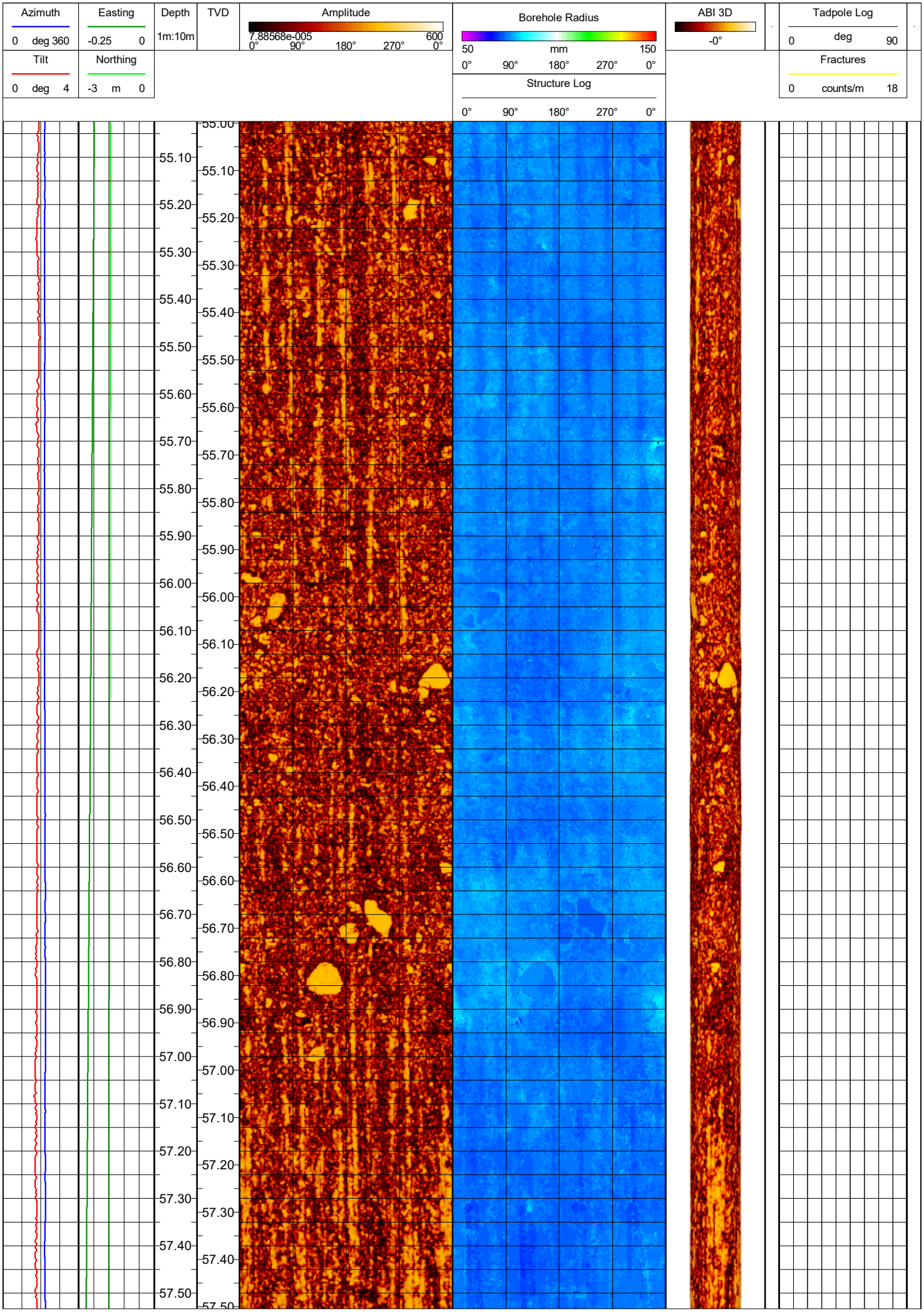
54.50
54.60
54.70
54.80
54.90
55.00

Plate 3.145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Tilt
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Easting
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Northing
-3 m 0
Depth
1m:10m
TVD
Amplitude
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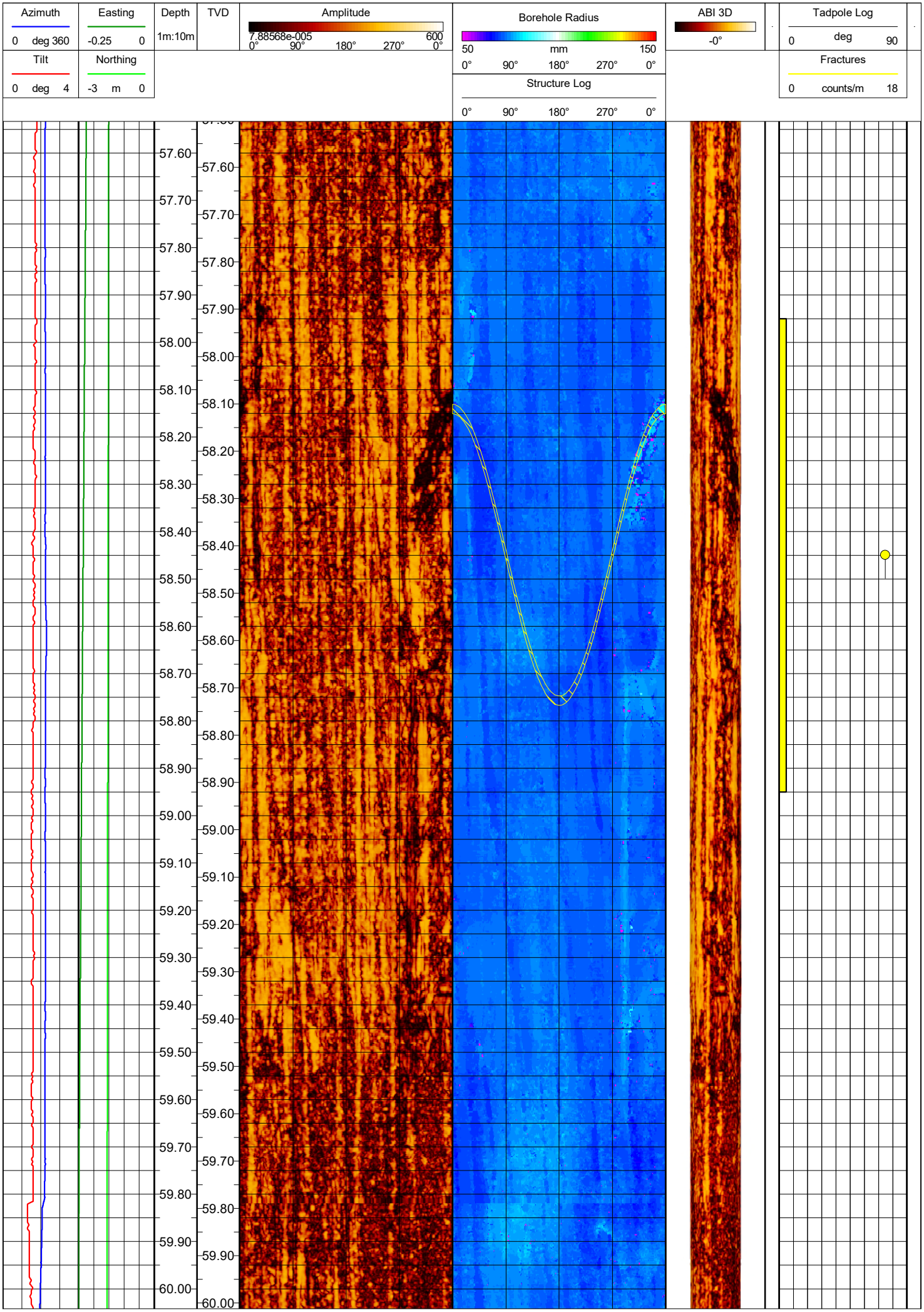
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
55.00
55.10
55.20
55.30
55.40
55.50
55.60
55.70
55.80
55.90
56.00
56.10
56.20
56.30
56.40
56.50
56.60
56.70
56.80
56.90
57.00
57.10
57.20
57.30
57.40
57.50

Plate 3.146


Azimuth
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Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
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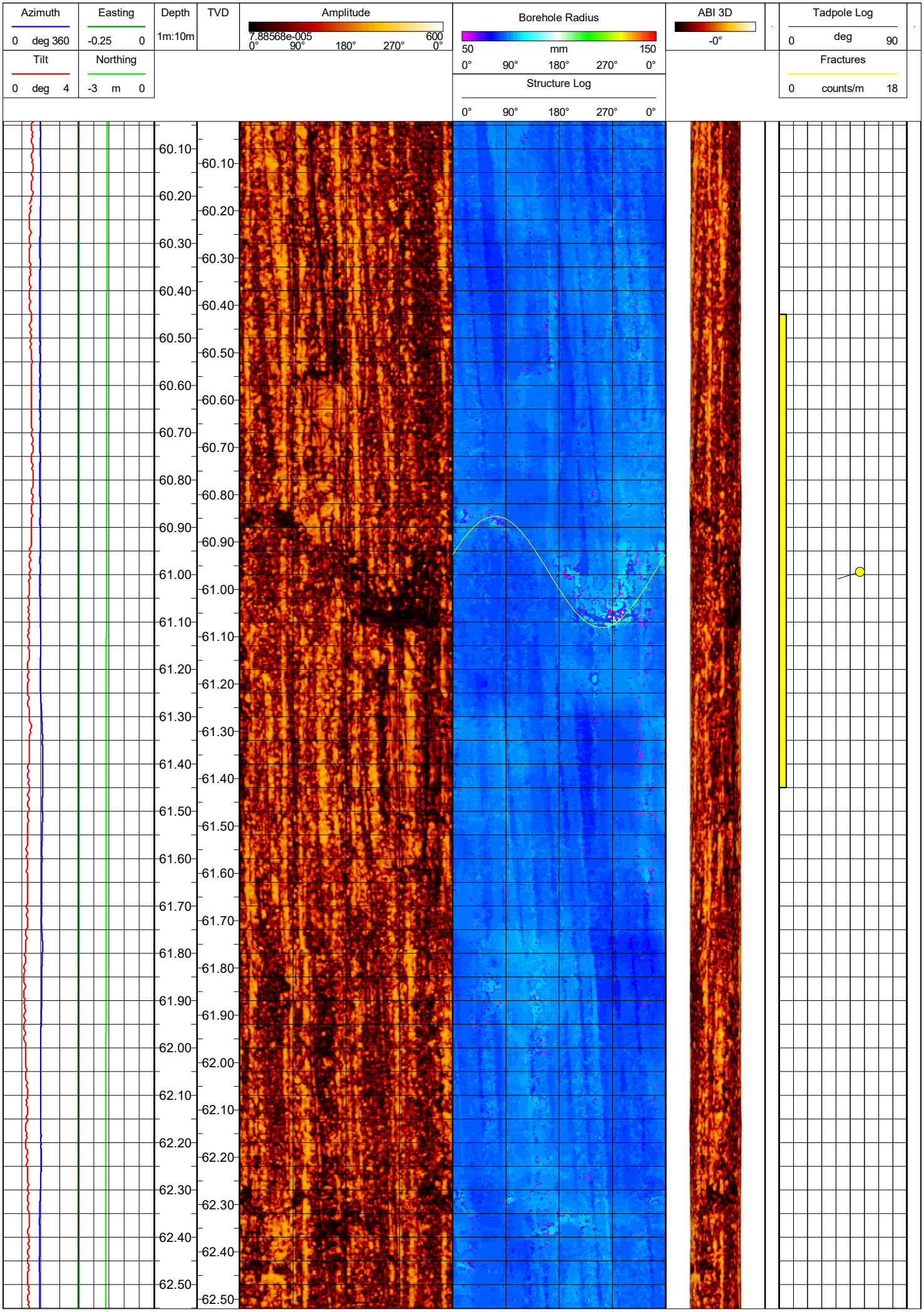
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Fractures
0 counts/m 18
57.60
57.70
57.80
57.90
58.00
58.10
58.20
58.30
58.40
58.50
58.60
58.70
58.80
58.90
59.00
59.10
59.20
59.30
59.40
59.50
59.60
59.70
59.80
59.90
60.00

Plate 3.147


Azimuth
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Easting
-0.25 0
Depth
1m:10m
TVD
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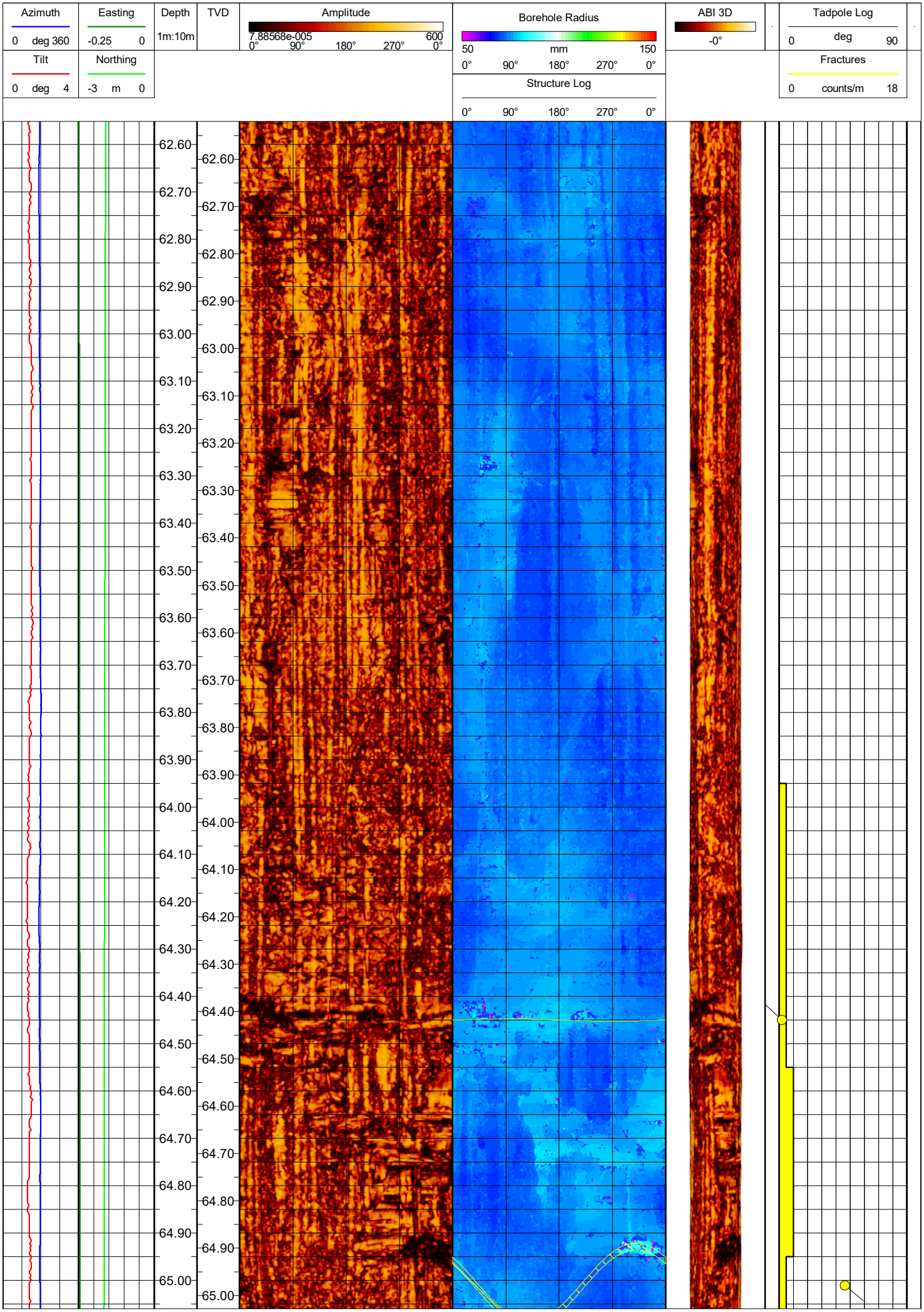
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
60.10
60.20
60.30
60.40
60.50
60.60
60.70
60.80
60.90
61.00
61.10
61.20
61.30
61.40
61.50
61.60
61.70
61.80
61.90
62.00
62.10
62.20
62.30
62.40
62.50

Plate 3.148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Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
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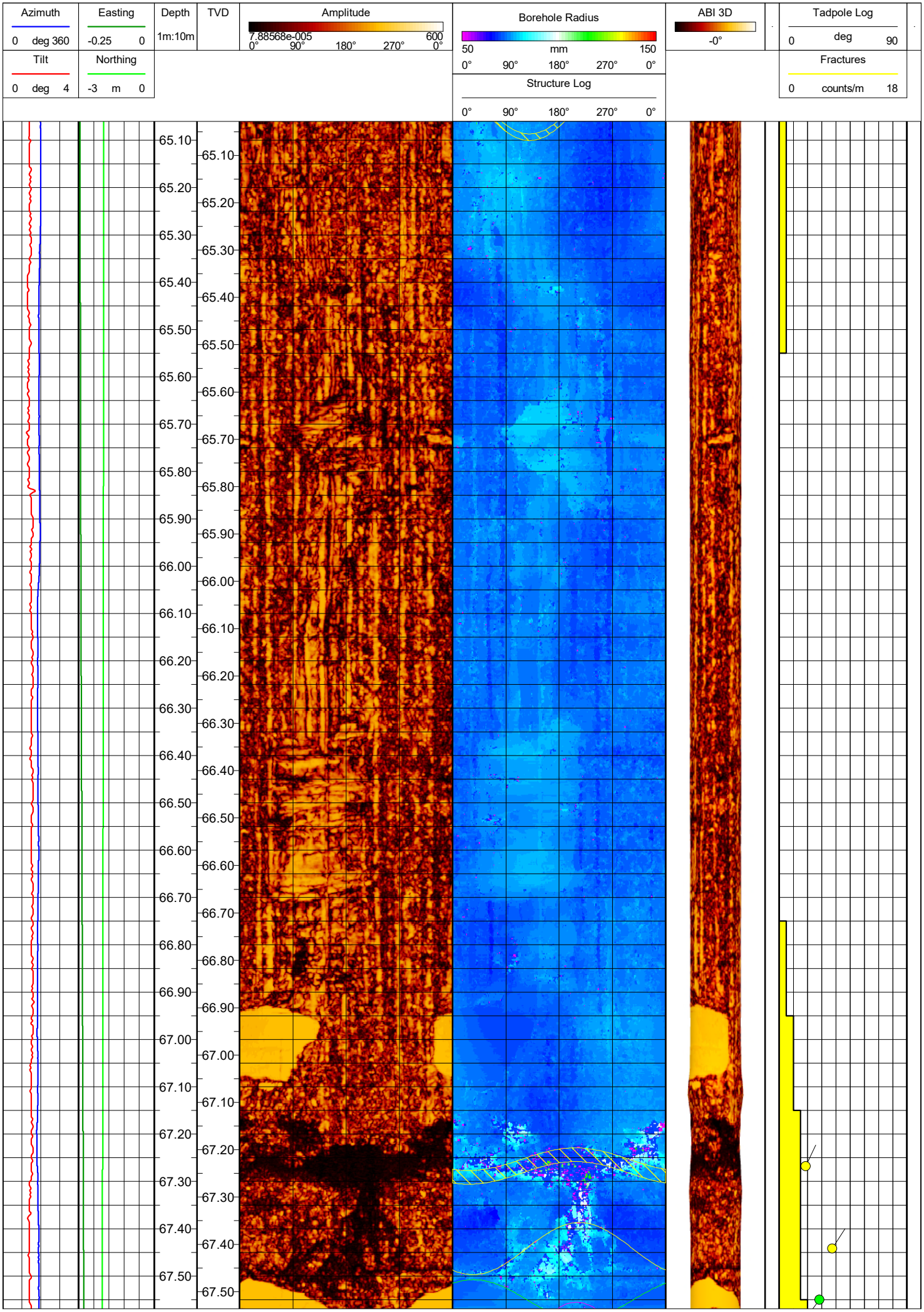
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Fractures
0 counts/m 18
62.60
62.70
62.80
62.90
63.00
63.10
63.20
63.30
63.40
63.50
63.60
63.70
63.80
63.90
64.00
64.10
64.20
64.30
64.40
64.50
64.60
64.70
64.80
64.90
65.00

Plate 3.149


Azimuth
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Tilt
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Easting
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Northing
-3 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005 600
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
65.10
65.20
65.30
65.40
65.50
65.60
65.70
65.80
65.90
66.00
66.10
66.20
66.30
66.40
66.50
66.60
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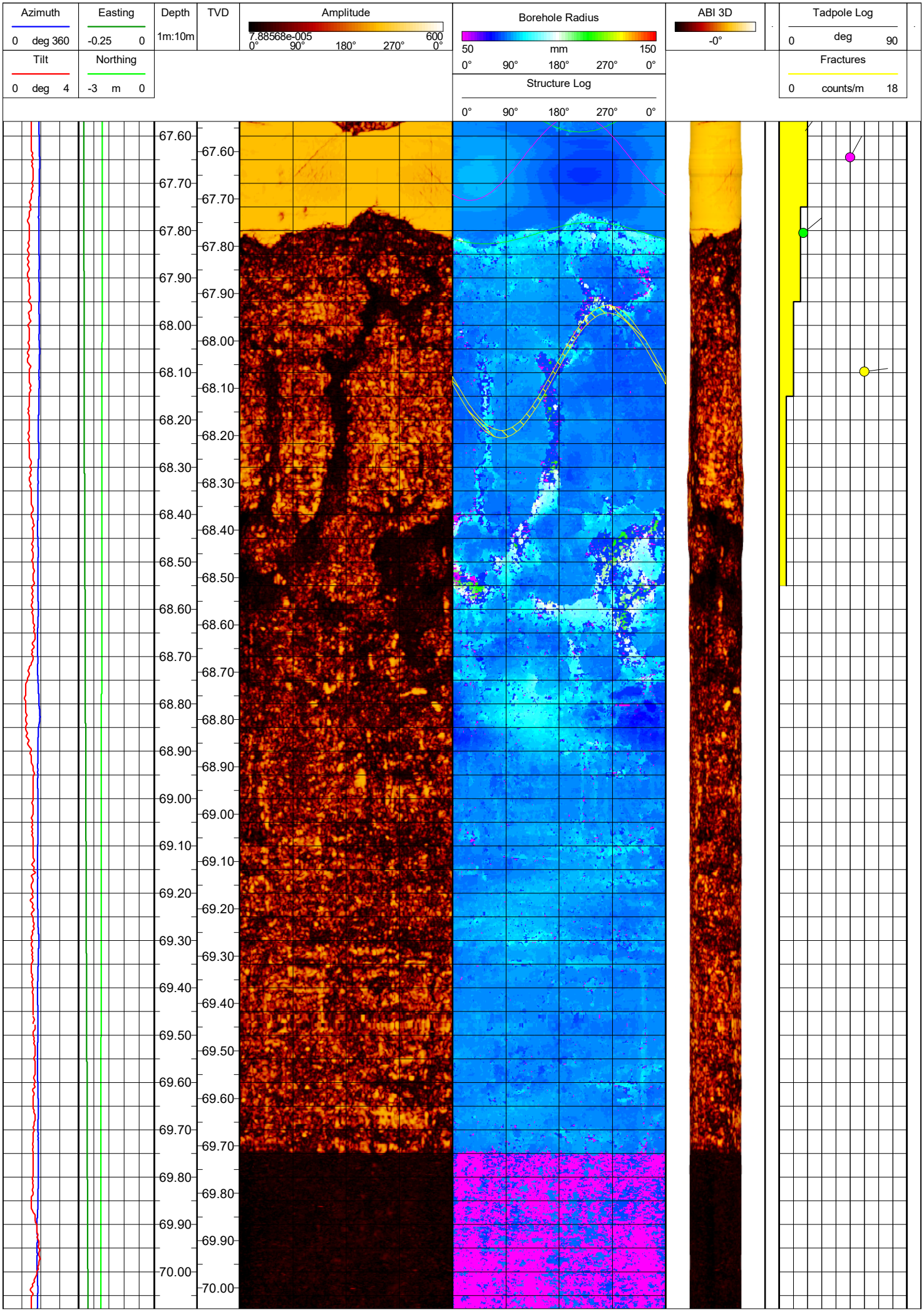
66.80
66.90
67.00
67.10
67.20
67.30
67.40
67.50

Plate 3.150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Northing
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Depth
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TVD
Amplitude
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600
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
67.60
67.70
67.80
67.90
68.00
68.10
68.20
68.30
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68.70
68.80
68.90
69.00
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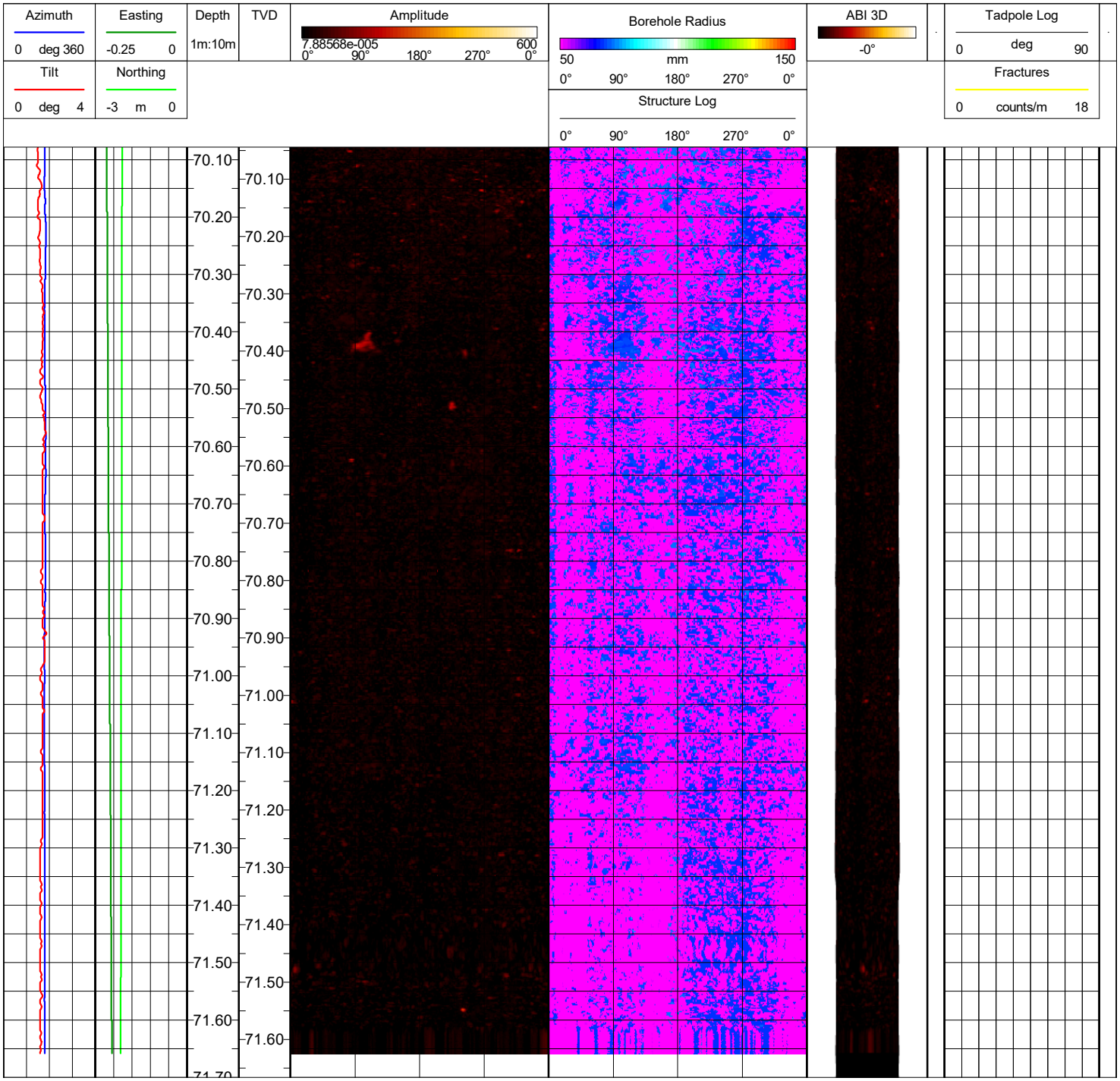
69.70
69.80
69.90
70.00

Plate 3.151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Easting
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Depth
1m:10m
TVD
Amplitude
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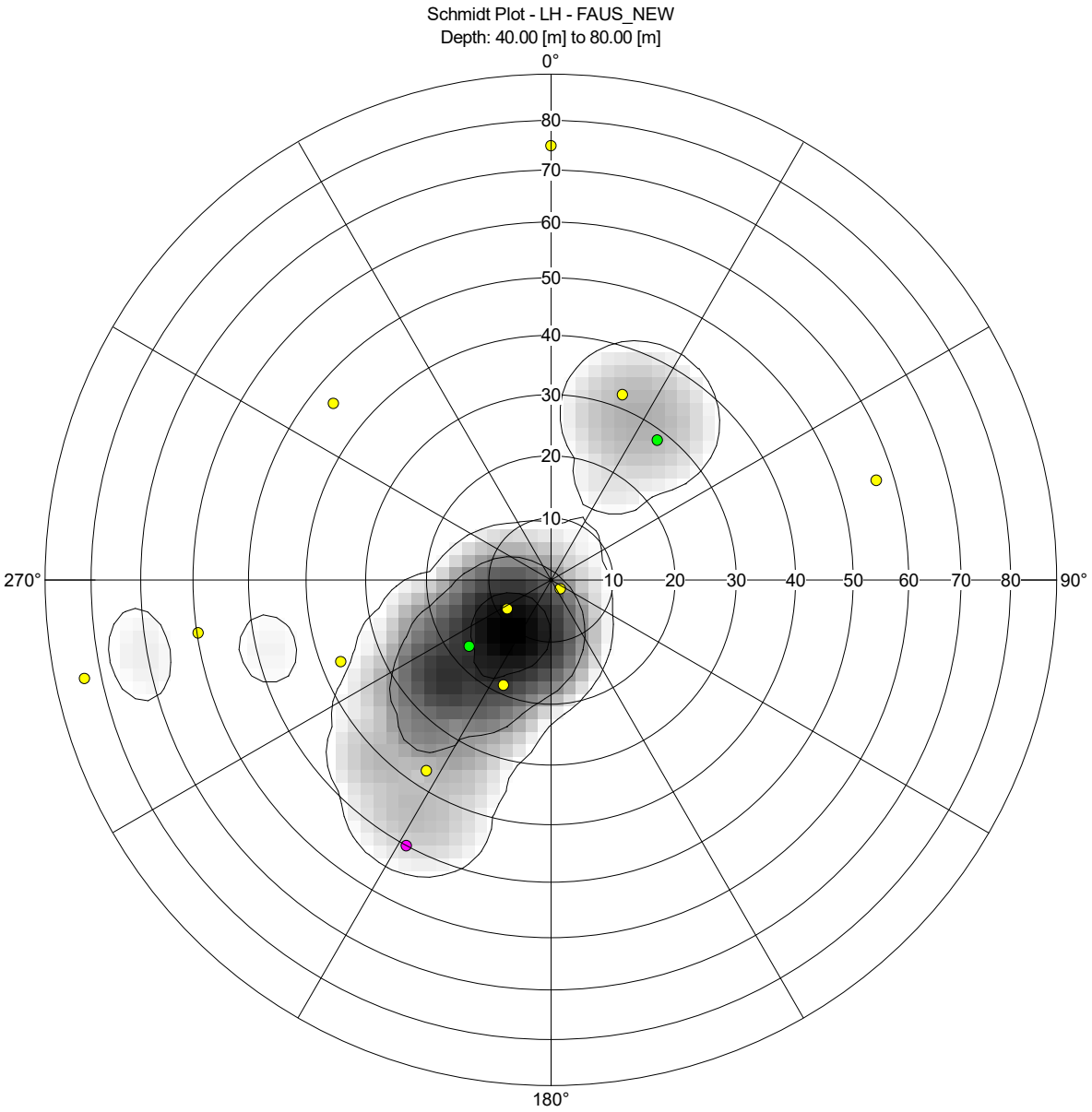
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-3 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
70.10
70.20
70.30
70.40
70.50
70.60
70.70
70.80
70.90
71.00
71.10
71.20
71.30
71.40
71.50
71.60

Plate 3.152

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH01**
Log Title:	**Polar Plot**

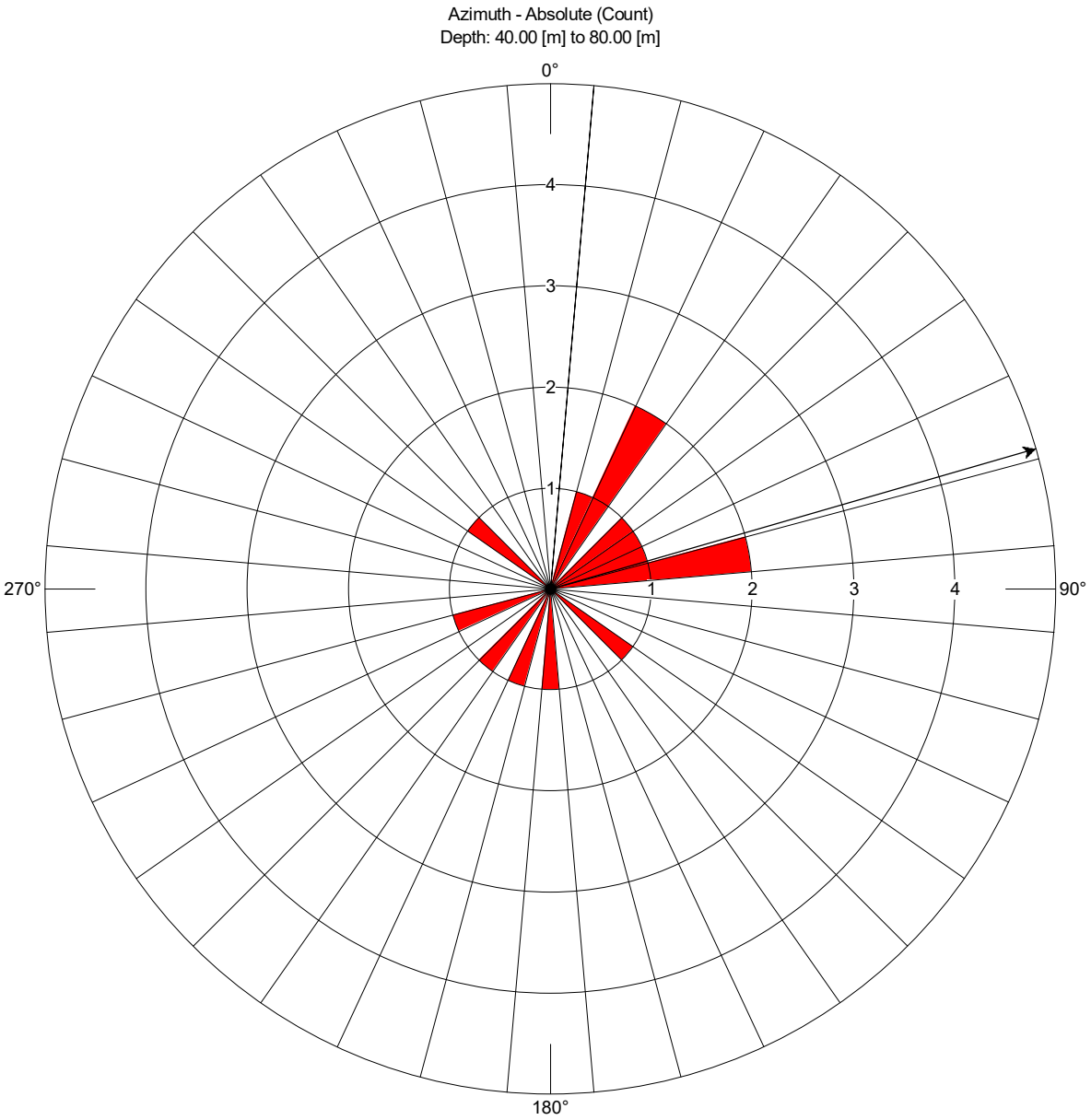
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	14	17.42	73.82
○	11	21.17	83.95
○	2	6.35	197.92
○	1	50.09	28.64

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH01**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	14.00
Mean (3D):	73.82
Min:	24.55
Max:	312.56

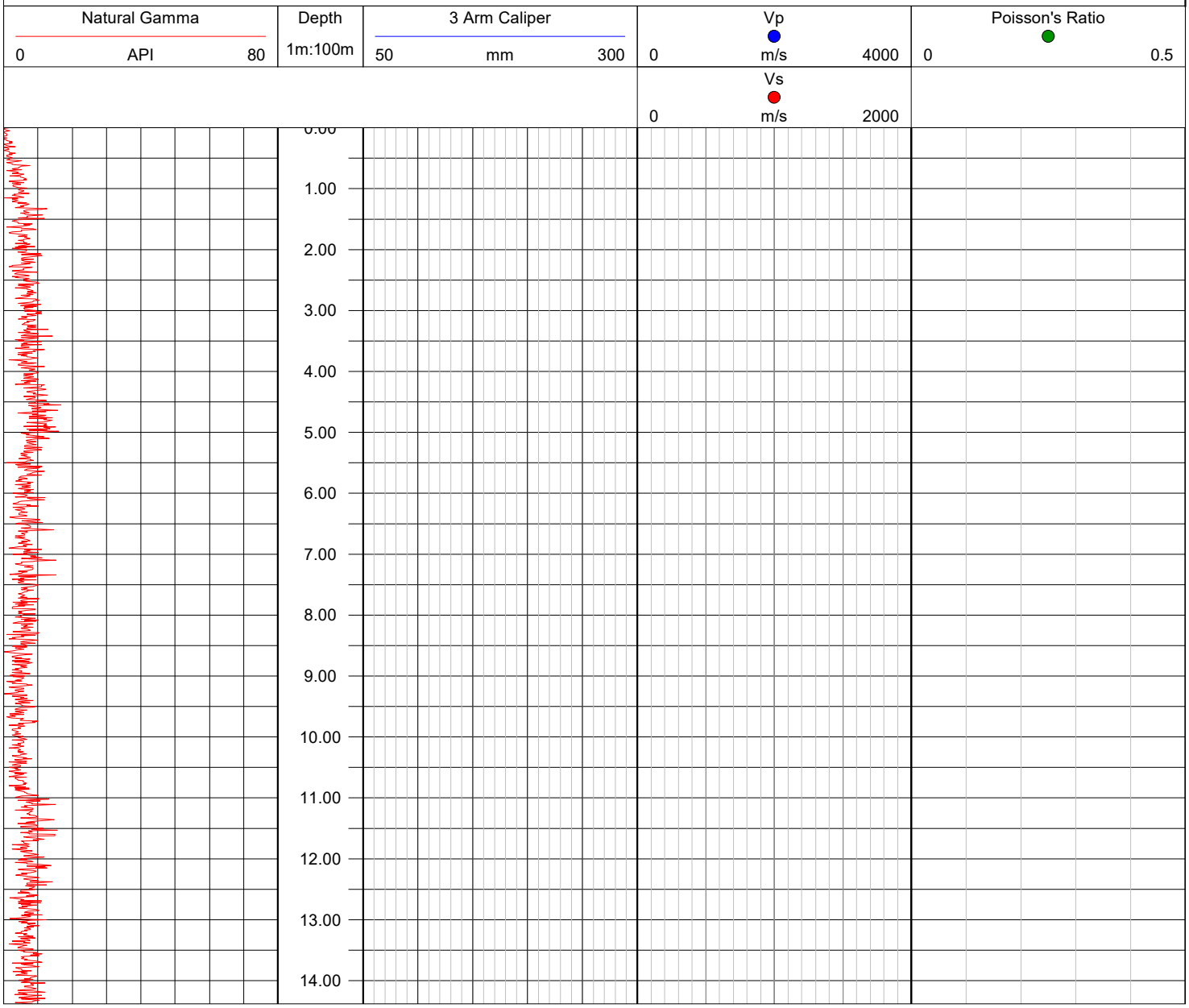
FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**	
	Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
	Borehole: BH01	Fugro Site Manager: Robert Fraser	10/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 303547.62, N: 5866922.76	Grid Reference: UTM Zone 30N	Elevation: -24.80 m LAT
Borehole Depth (Drilling): 75.01 m		Recorded By: H. Spence & J. Fernandez	Processed By: H. Spence
Borehole Depth (Wireline): 71.93 m		Remarks:	
Logging Datum: Mud Level		Borehole was logged in four sections, collapsed at 71.66 m before the first wireline run. Borehole collapsed at 40.91 m in Section 3, PS logging was aborted this section due to concerns about hole stability.	
Logged Interval: 0.00 m - 71.93 m			
Fluid Level: 0.00 m			

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	16.70 m
146 mm	16.70 m	75.01 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 43.30 m	2.00 m
Steel	175 mm	- 43.30 m	16.70 m
Steel (Section 4)	146 mm	- 43.30 m	20.00 m
Steel (Section 3)	146 mm	- 43.30 m	32.00 m
Steel (Section 2)	146 mm	- 43.30 m	43.90 m
Steel (Section 1)	146 mm	- 43.30 m	49.80 m



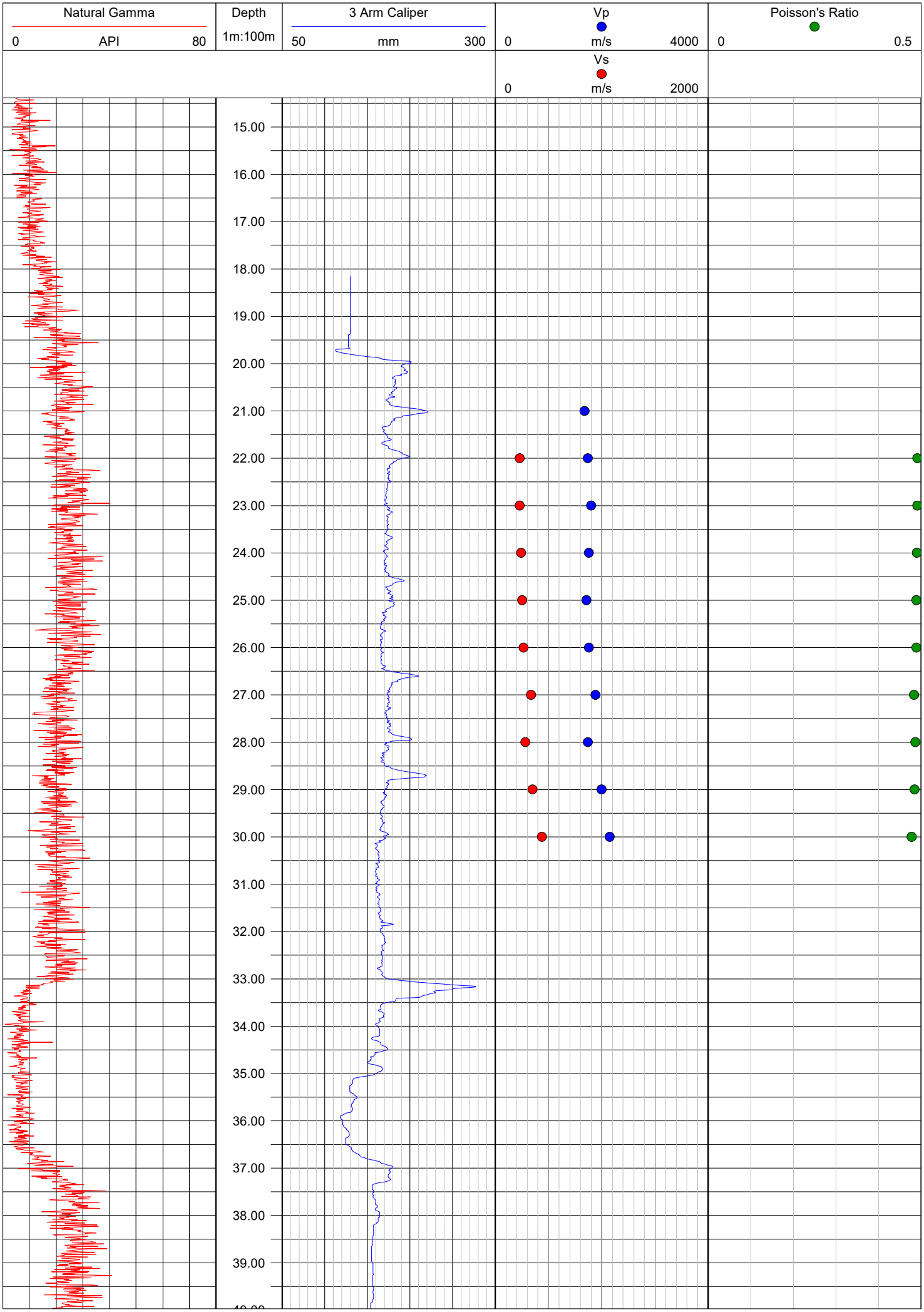
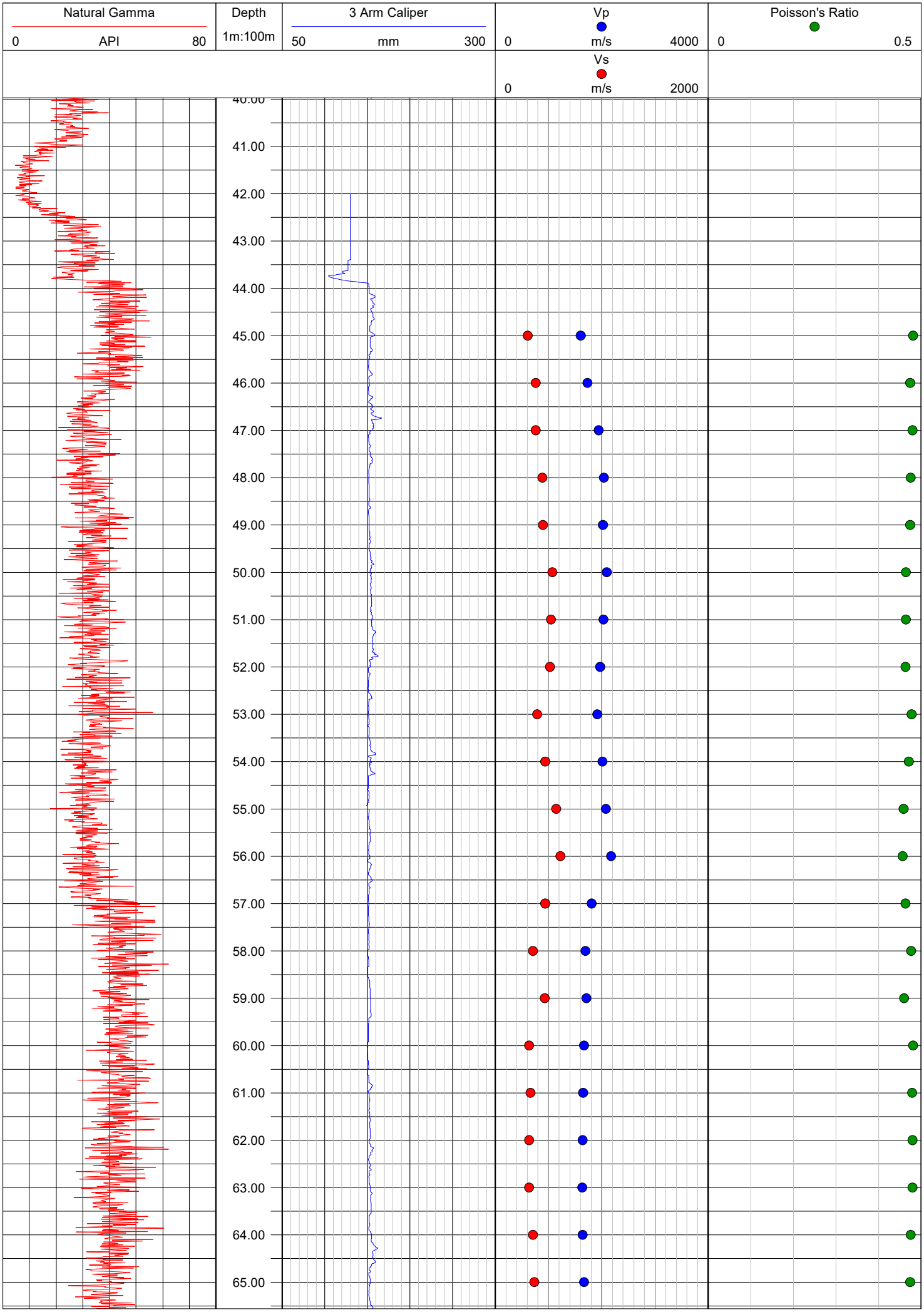

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.156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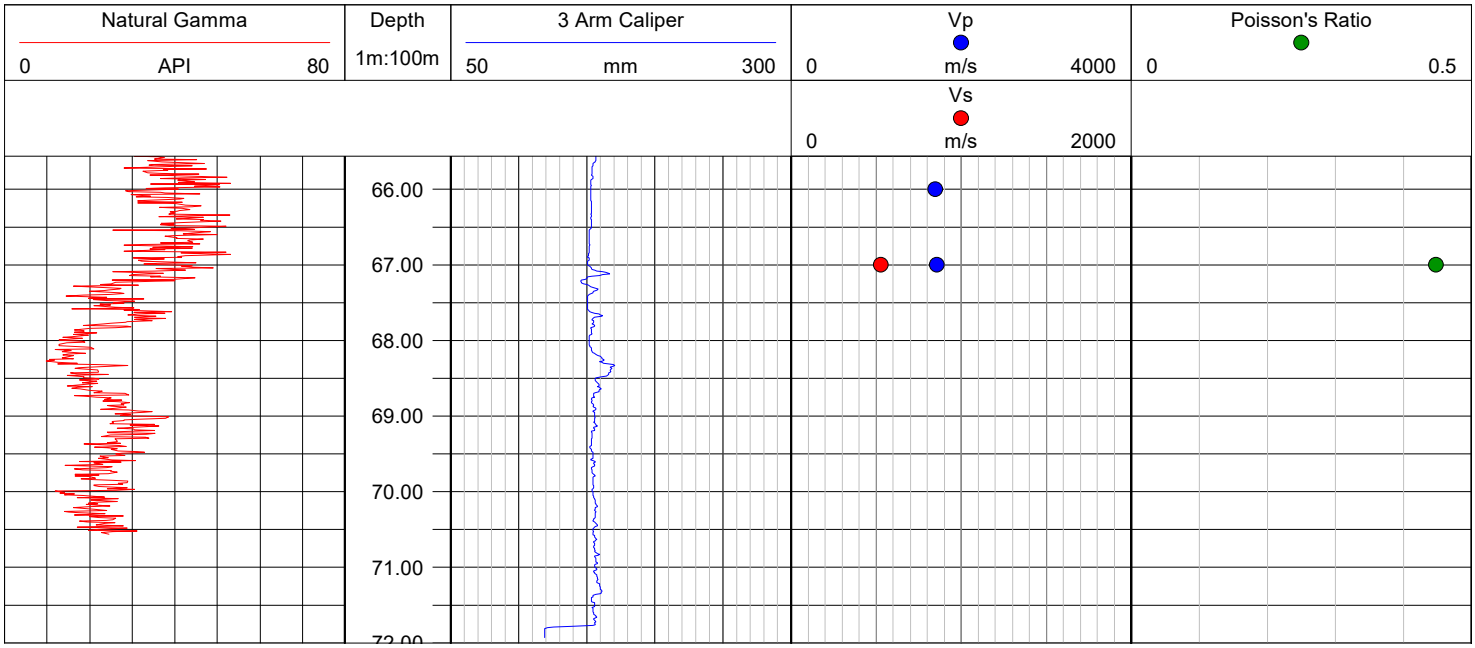
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00
53.00
54.00
55.00
56.00
57.00
58.00
59.00
60.00
61.00
62.00
63.00
64.00
65.00

Plate 3.157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0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
66.00
67.00
68.00
69.00
70.00
71.00

FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**
	Client: Sure Partners Limited	Client Representative: Stephen Forster — Logging Date:
	Borehole: BH08	Fugro Site Manager: James Hills — 13/07/2022

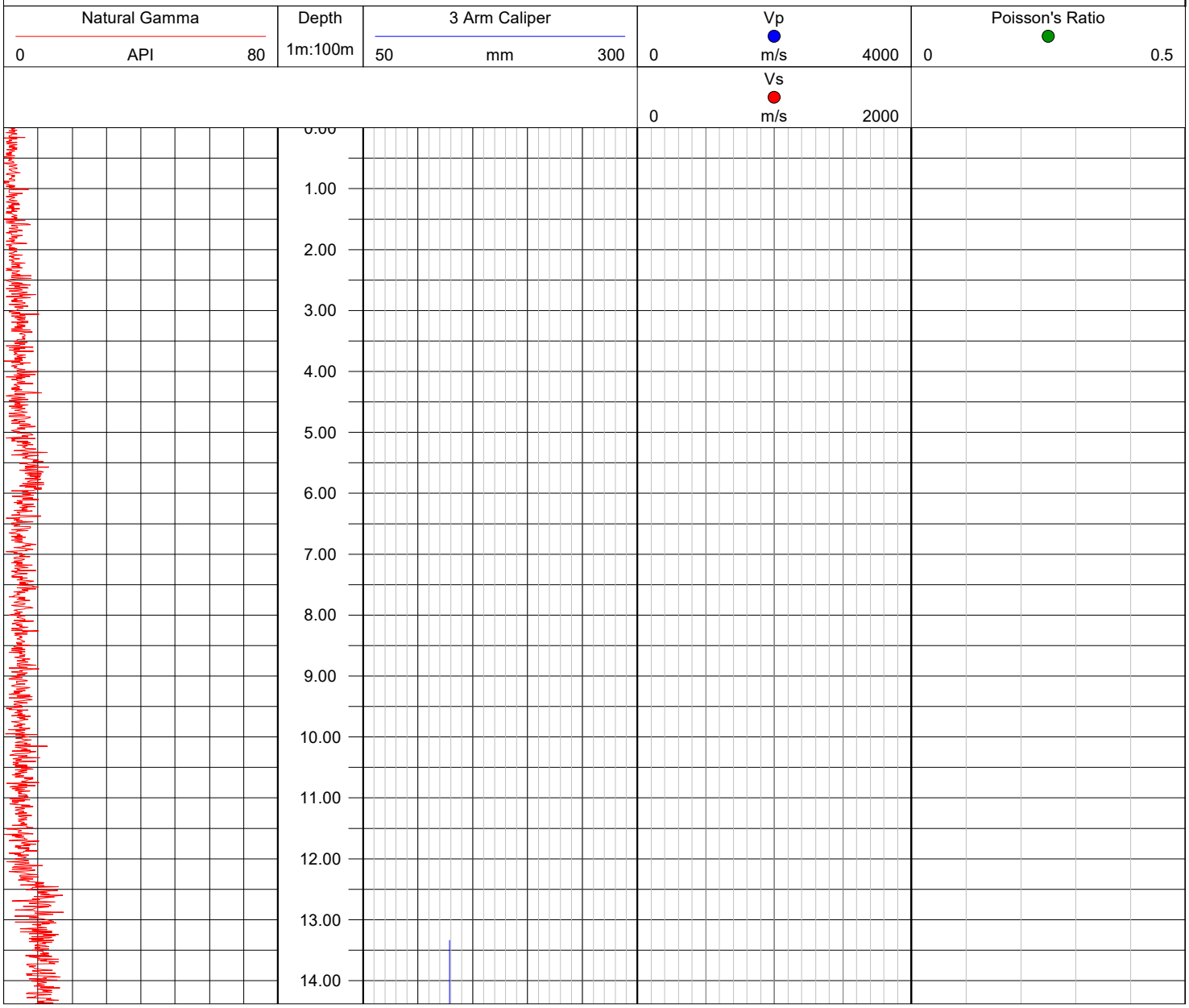
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 301523.68, N: 5856887.61	Grid Reference: UTM Zone 30N — Elevation: -19.40 m LAT
Borehole Depth (Drilling): 57.20 m		Recorded By: H. Spence — Processed By: H. Spence
Borehole Depth (Wireline): 53.73 m		Remarks:
Logging Datum: Mud Level		Client requested to abort open hole ABI logging due to low expected data quality due to soft sediments and concerns about hole stability. Tool was run in casing to acquire NGR data (Section 1). Wireline logging in Section 2 was carried out above 33.00 m only by client request. No tools were run above 17.00 m due to borehole stability concerns.
Logged Interval: 0.00 m - 53.73 m		
Fluid Level: 0.00 m		

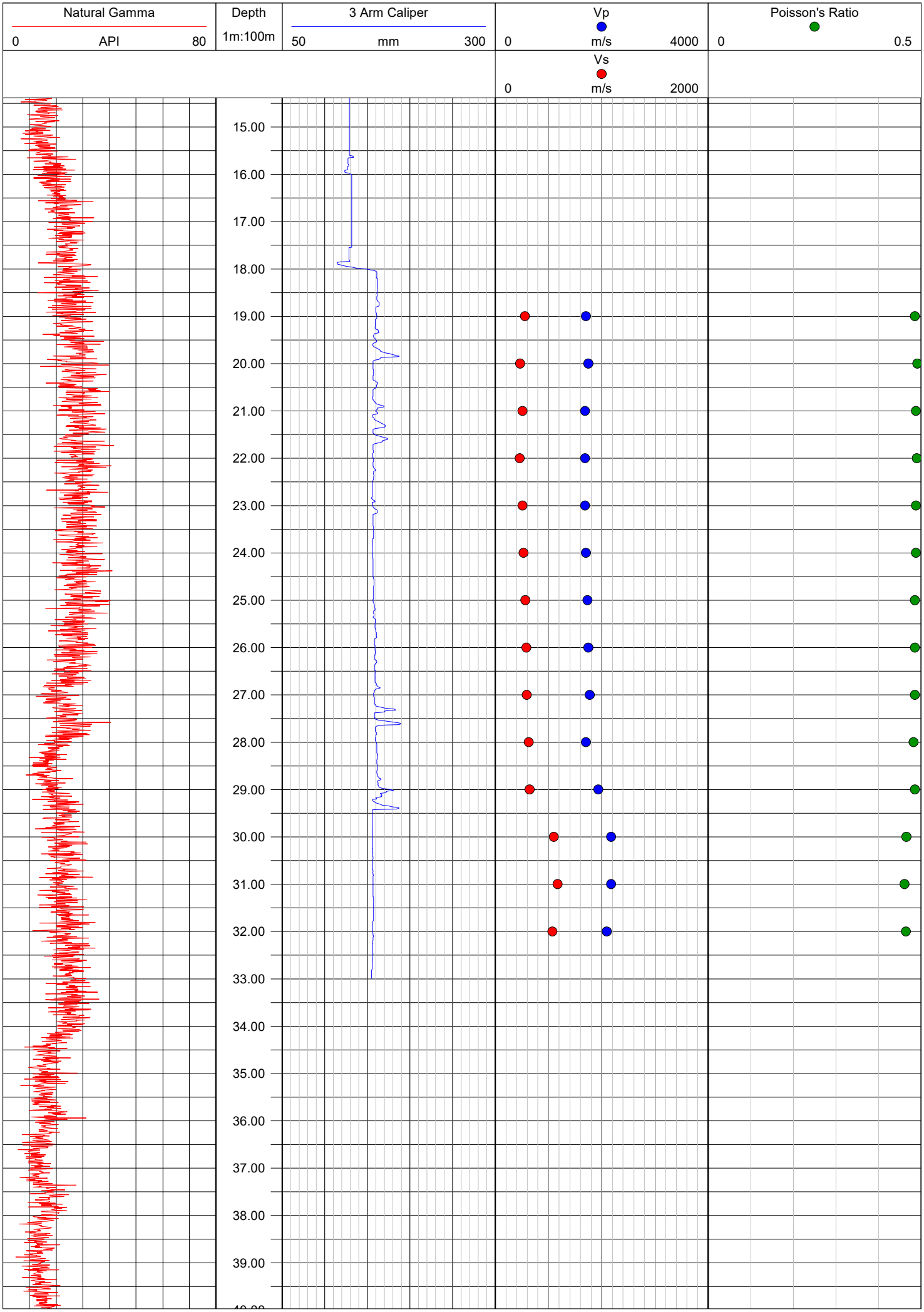
BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	3.00 m
146 mm	3.00 m	57.20 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 35.73 m	2.50 m
Steel	175 mm	- 35.73 m	3.00 m
Steel (Section 2)	146 mm	- 35.73 m	18.30 m
Steel (Section 1)	146 mm	- 35.73 m	56.00 m

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0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.160


Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00
53.00

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
Borehole: BH09	Fugro Site Manager: James Hills	19/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 300261.50, N: 5853958.52	Grid Reference: UTM Zone 30N Elevation: -30.50 m LAT

Borehole Depth (Drilling):	55.00 m
Borehole Depth (Wireline):	54.96 m
Logging Datum:	Mud Level
Logged Interval:	13.01 m - 53.73 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence & J. Fernandez Processed By: H. Spence

Remarks:

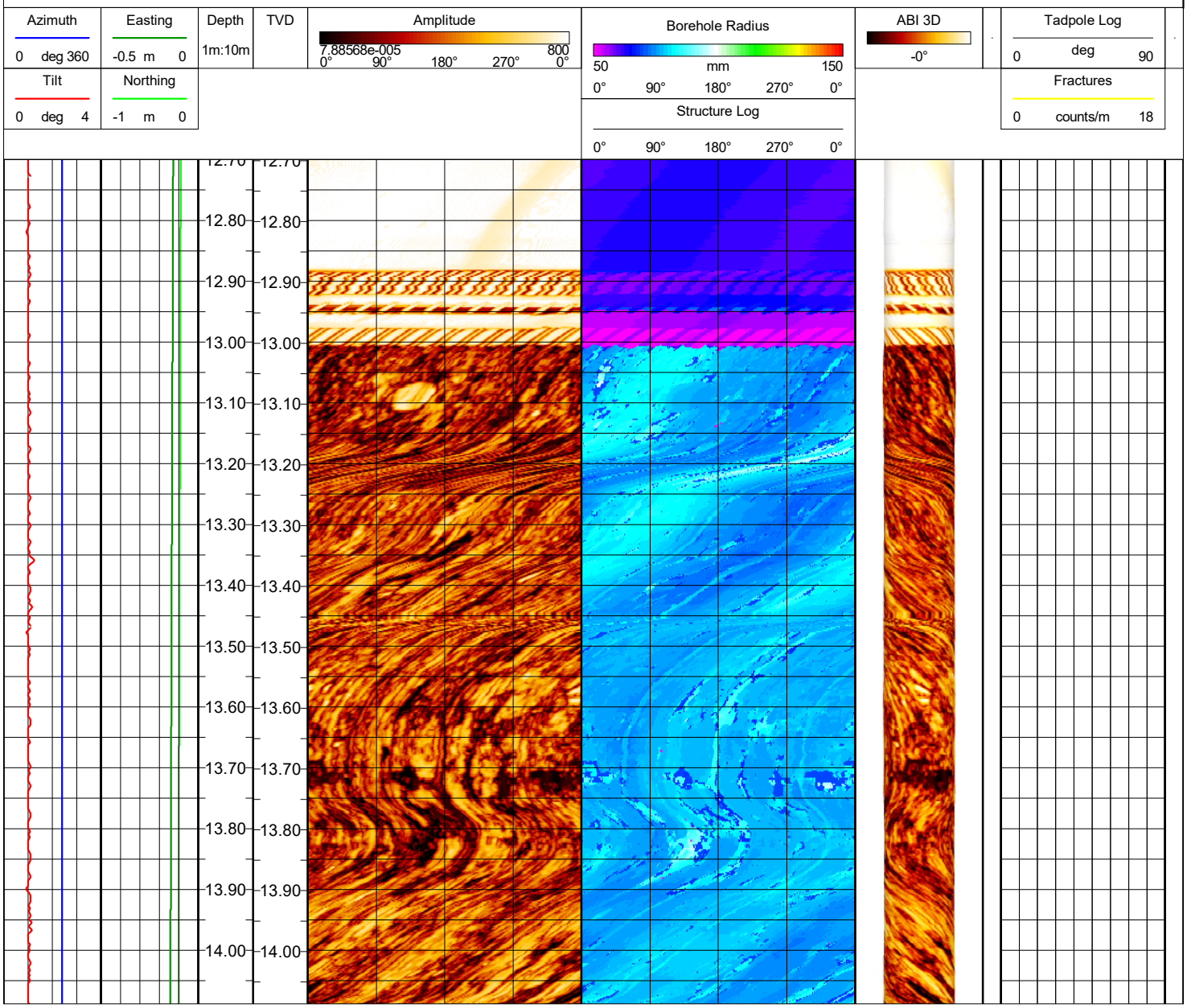
Borehole was logged in three section, hole collapse at 32.80 m in Section 2. ABI and PSL run were aborted in Section 3 by client request due to concerns about borehole stability.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	12.20 m
146 mm	12.20 m	55.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 47.10 m	2.10 m
Steel	175 mm	- 47.10 m	12.20 m
Steel (Section 3)	146 mm	- 47.10 m	3.10 m
Steel (Section 2)	146 mm	- 47.10 m	12.80 m
Steel (Section 1)	146 mm	- 47.10 m	35.30 m



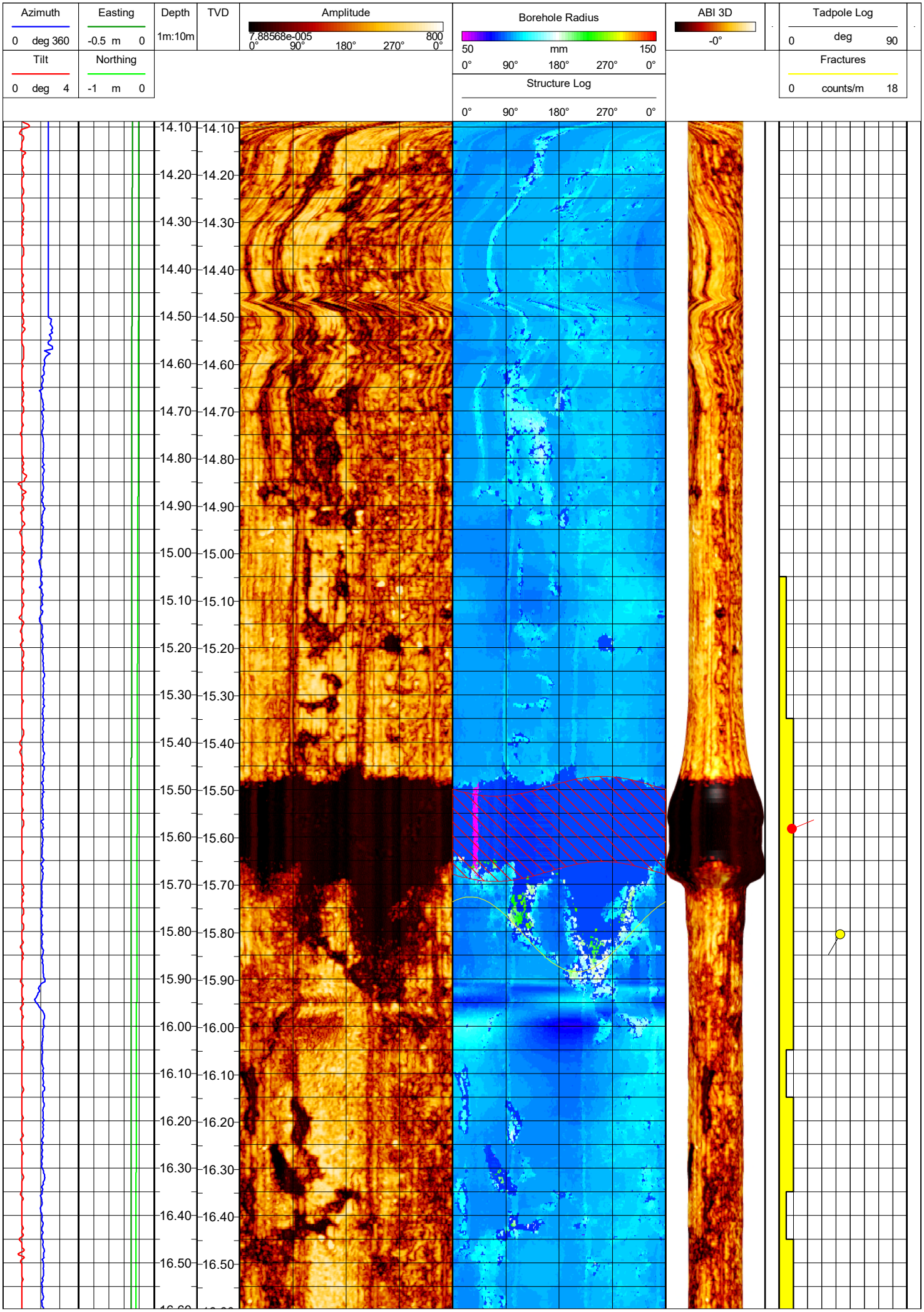
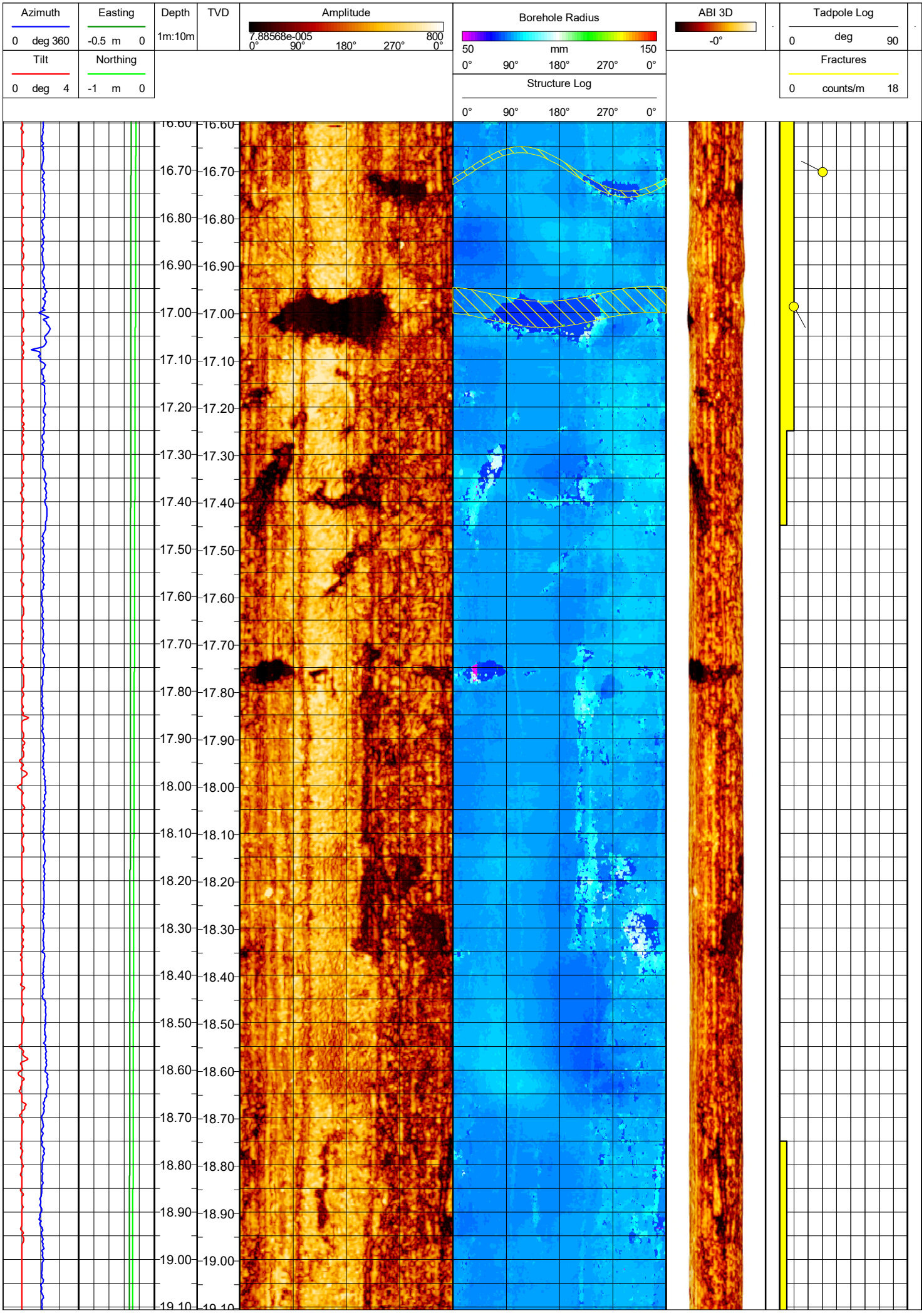

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
14.10
14.20
14.30
14.40
14.50
14.60
14.70
14.80
14.90
15.00
15.10
15.20
15.30
15.40
15.50
15.60
15.70
15.80
15.90
16.00
16.10
16.20
16.30
16.40
16.50

Plate 3.163


Azimuth
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Tilt
0 deg 4
Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
16.60
16.70
16.80
16.90
17.00
17.10
17.20
17.30
17.40
17.50
17.60
17.70
17.80
17.90
18.00
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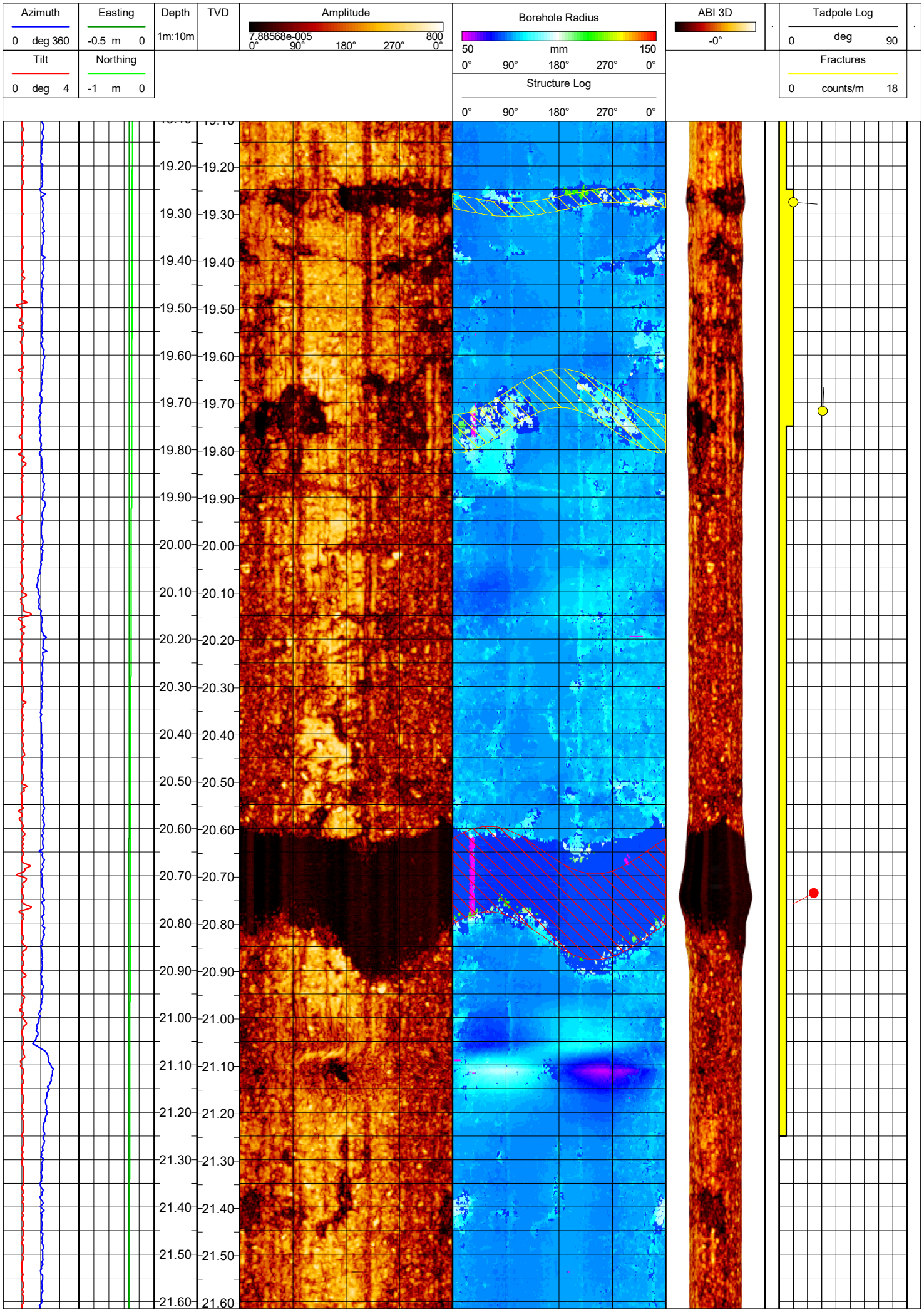
18.80
18.90
19.00
19.10

Plate 3.164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Tilt
0 deg 4
Easting
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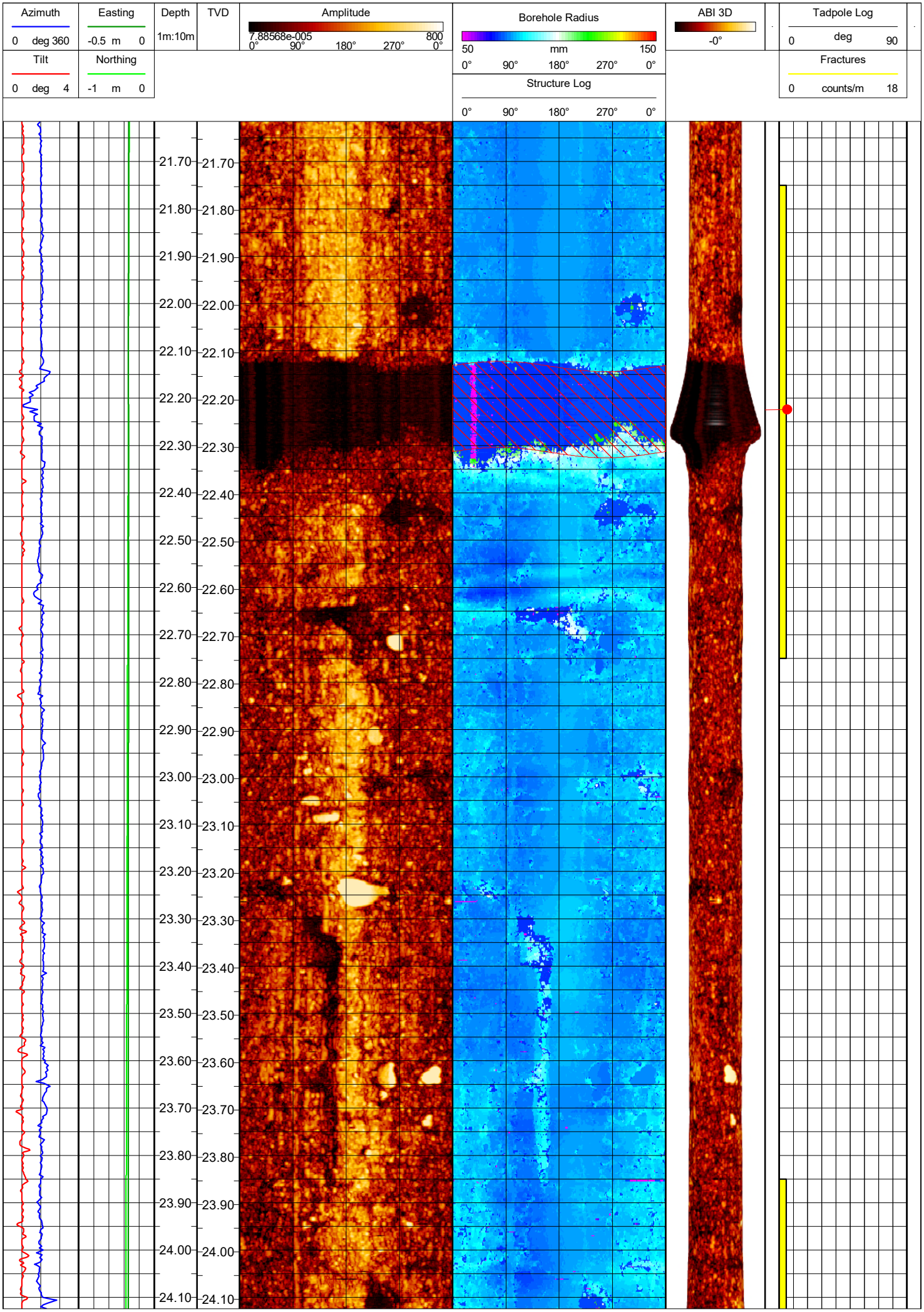
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
19.20
19.30
19.40
19.50
19.60
19.70
19.80
19.90
20.00
20.10
20.20
20.30
20.40
20.50
20.60
20.70
20.80
20.90
21.00
21.10
21.20
21.30
21.40
21.50
21.60

Plate 3.165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Tilt
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Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
21.70
21.80
21.90
22.00
22.10
22.20
22.30
22.40
22.50
22.60
22.70
22.80
22.90
23.00
23.10
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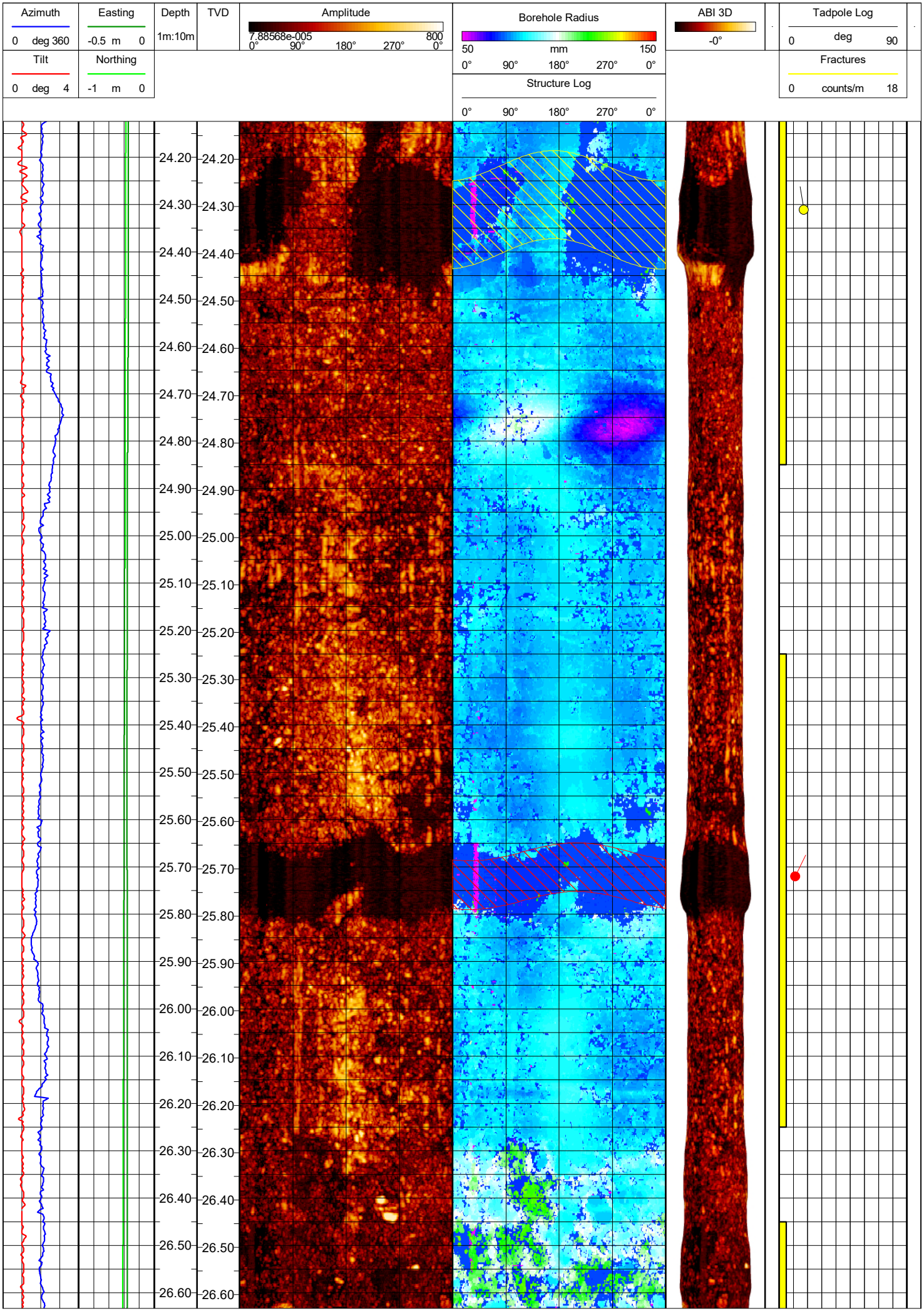
23.40
23.50
23.60
23.70
23.80
23.90
24.00
24.10

Plate 3.166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Tilt
0 deg 4
Easting
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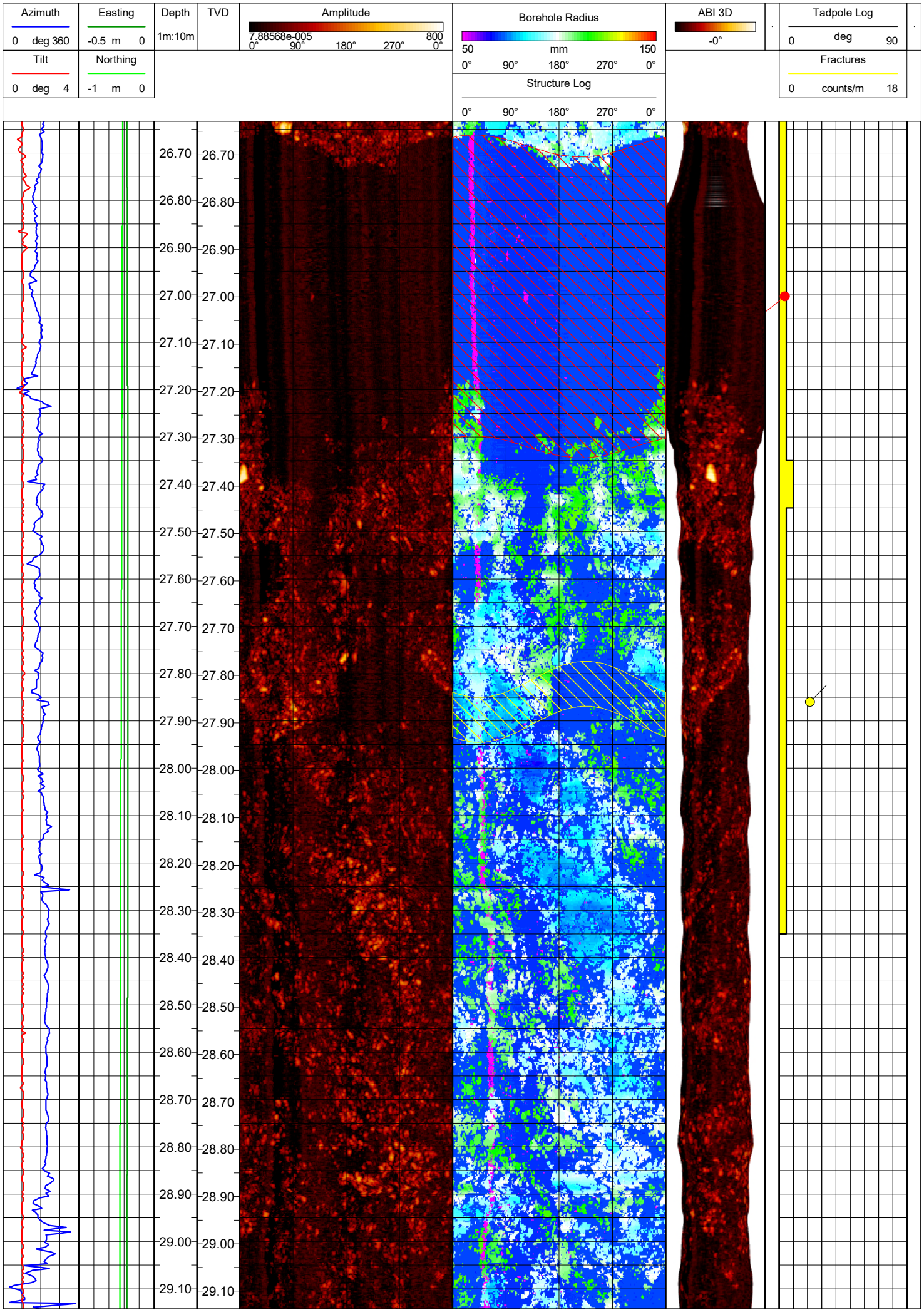
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
24.20
24.30
24.40
24.50
24.60
24.70
24.80
24.90
25.00
25.10
25.20
25.30
25.40
25.50
25.60
25.70
25.80
25.90
26.00
26.10
26.20
26.30
26.40
26.50
26.60

Plate 3.167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Tilt
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Easting
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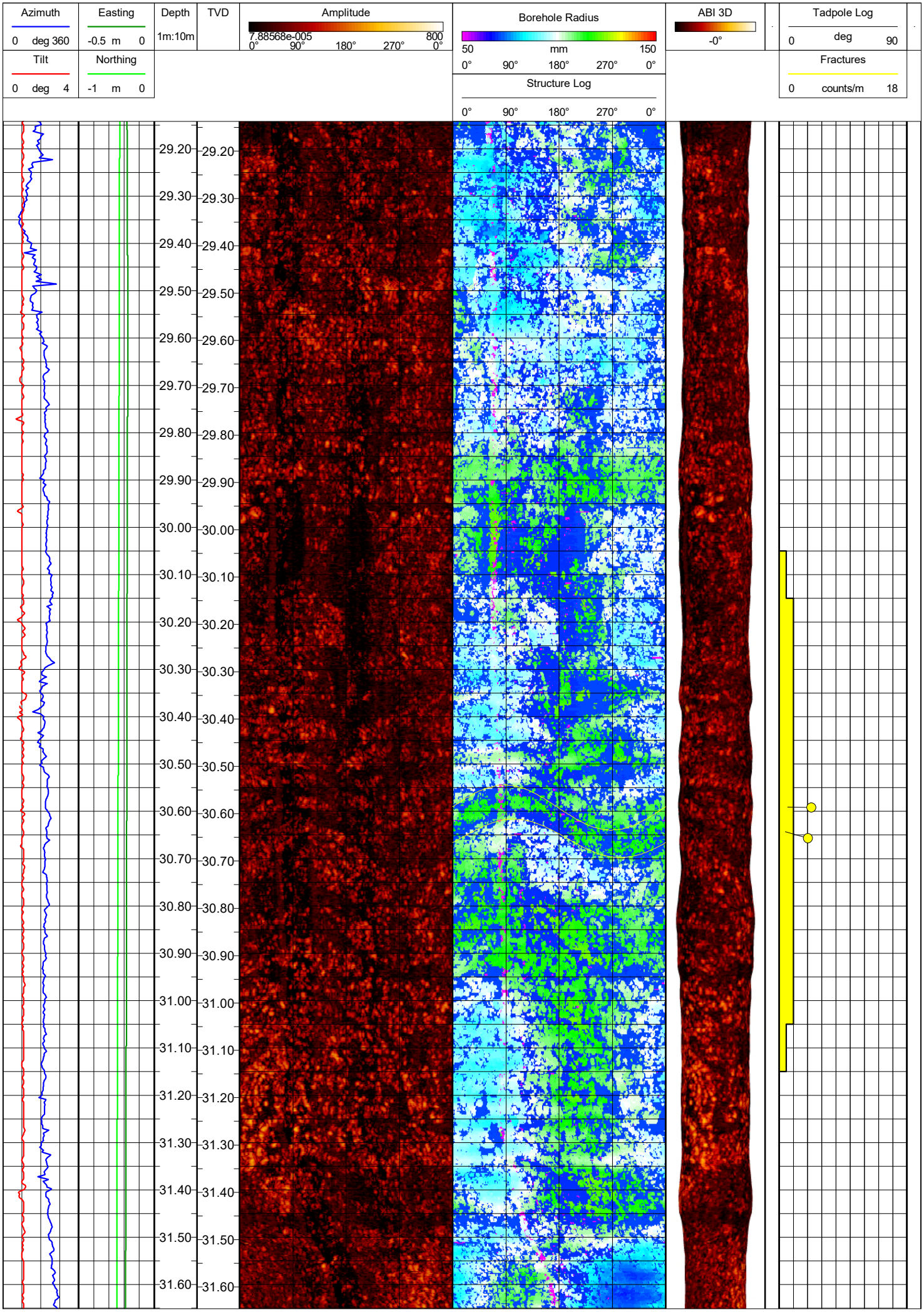
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
26.70
26.80
26.90
27.00
27.10
27.20
27.30
27.40
27.50
27.60
27.70
27.80
27.90
28.00
28.10
28.20
28.30
28.40
28.50
28.60
28.70
28.80
28.90
29.00
29.10

Plate 3.168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Tilt
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Easting
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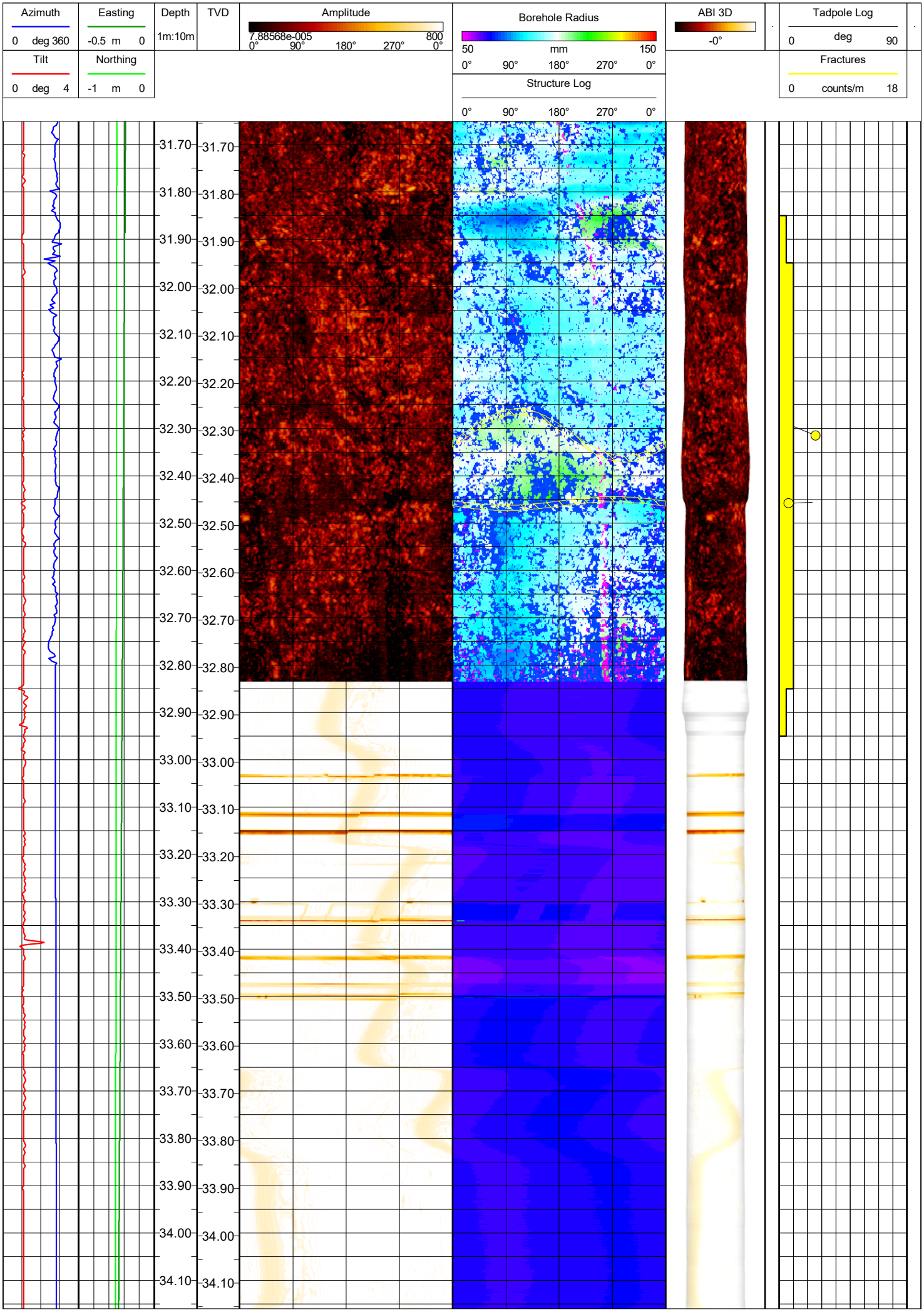
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
29.20
29.30
29.40
29.50
29.60
29.70
29.80
29.90
30.00
30.10
30.20
30.30
30.40
30.50
30.60
30.70
30.80
30.90
31.00
31.10
31.20
31.30
31.40
31.50
31.60

Plate 3.169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Tilt
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Easting
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Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
31.70
31.80
31.90
32.00
32.10
32.20
32.30
32.40
32.50
32.60
32.70
32.80
32.90
33.00
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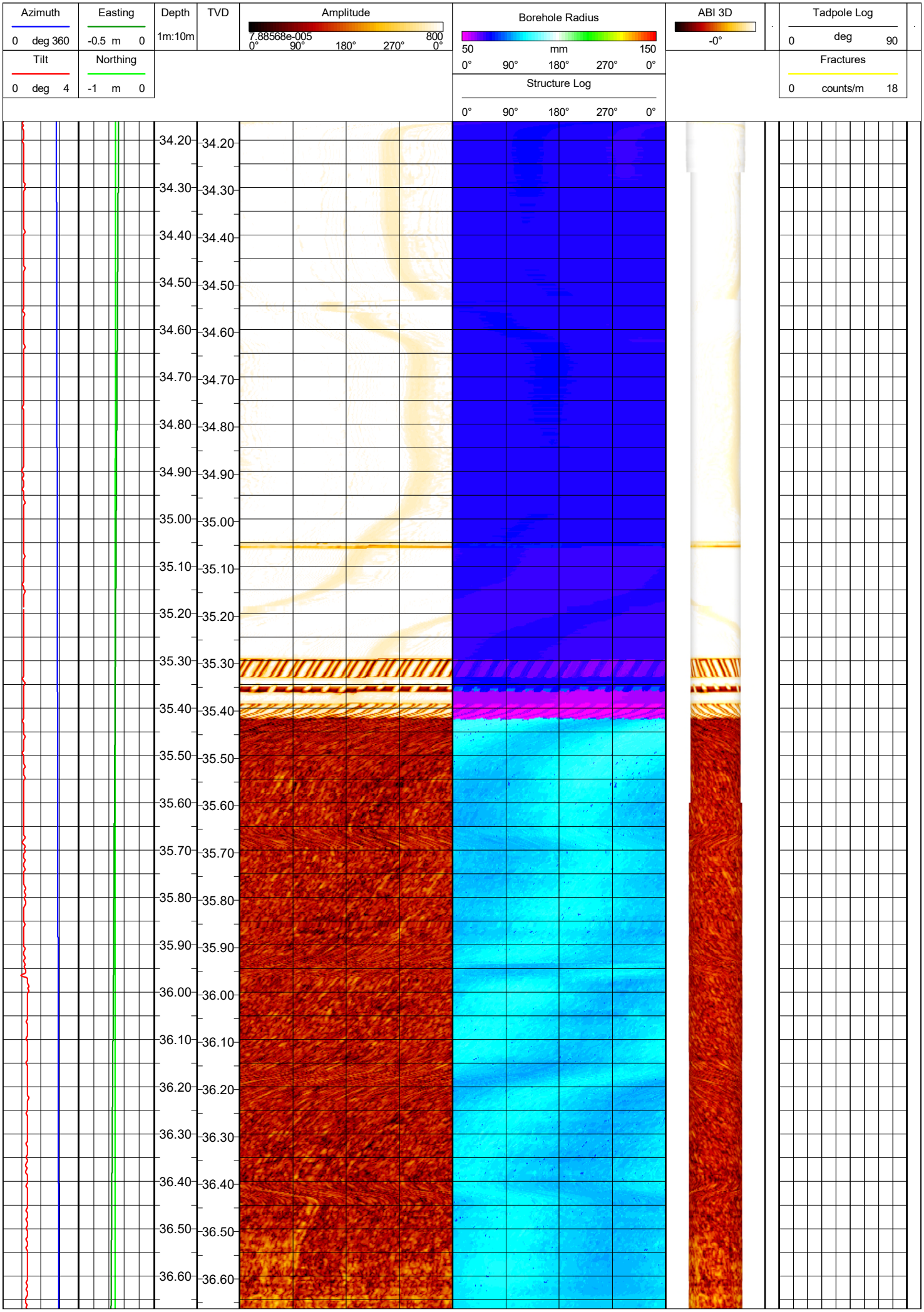
33.40
33.50
33.60
33.70
33.80
33.90
34.00
34.10

Plate 3.170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Tilt
0 deg 4
Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
34.20
34.30
34.40
34.50
34.60
34.70
34.80
34.90
35.00
35.10
35.20
35.30
35.40
35.50
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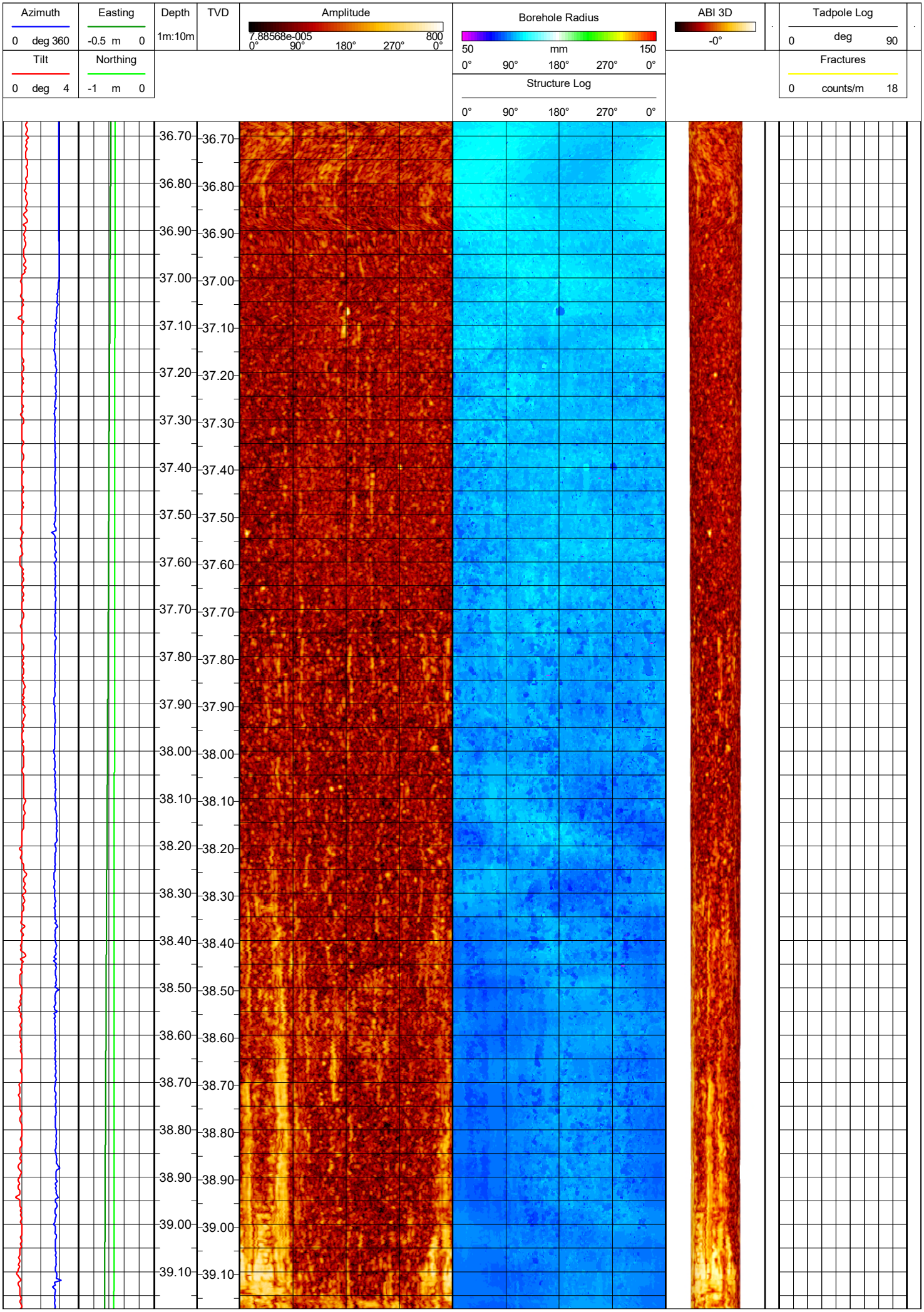
36.40
36.50
36.60

Plate 3.171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0 deg 360
Easting
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-1 m 0
Fractures
0 counts/m 18
36.70
36.80
36.90
37.00
37.10
37.20
37.30
37.40
37.50
37.60
37.70
37.80
37.90
38.00
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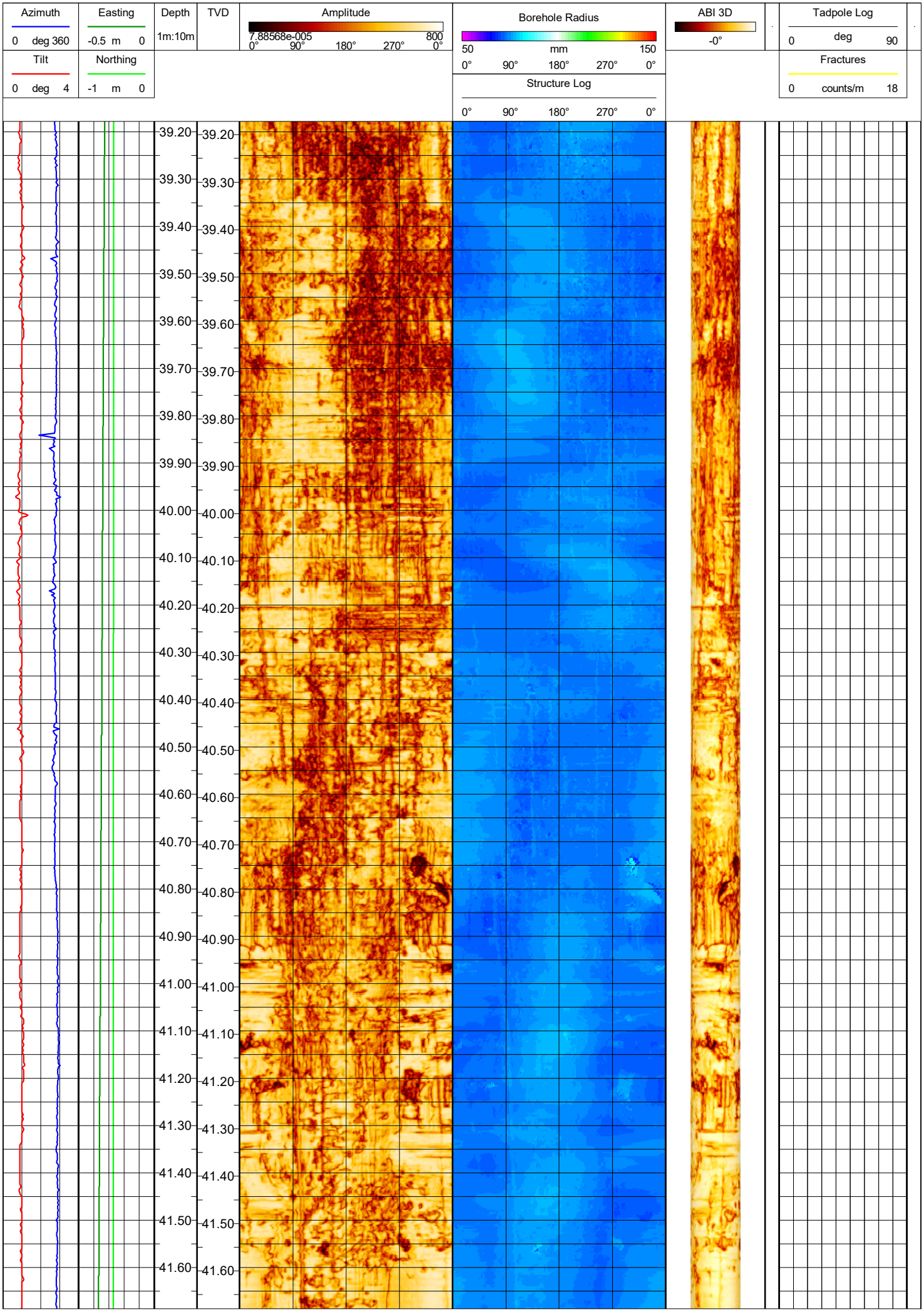
39.00
39.10

Plate 3.172


Azimuth
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Tilt
0 deg 4
Easting
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Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
39.20
39.30
39.40
39.50
39.60
39.70
39.80
39.90
40.00
40.10
40.20
40.30
40.40
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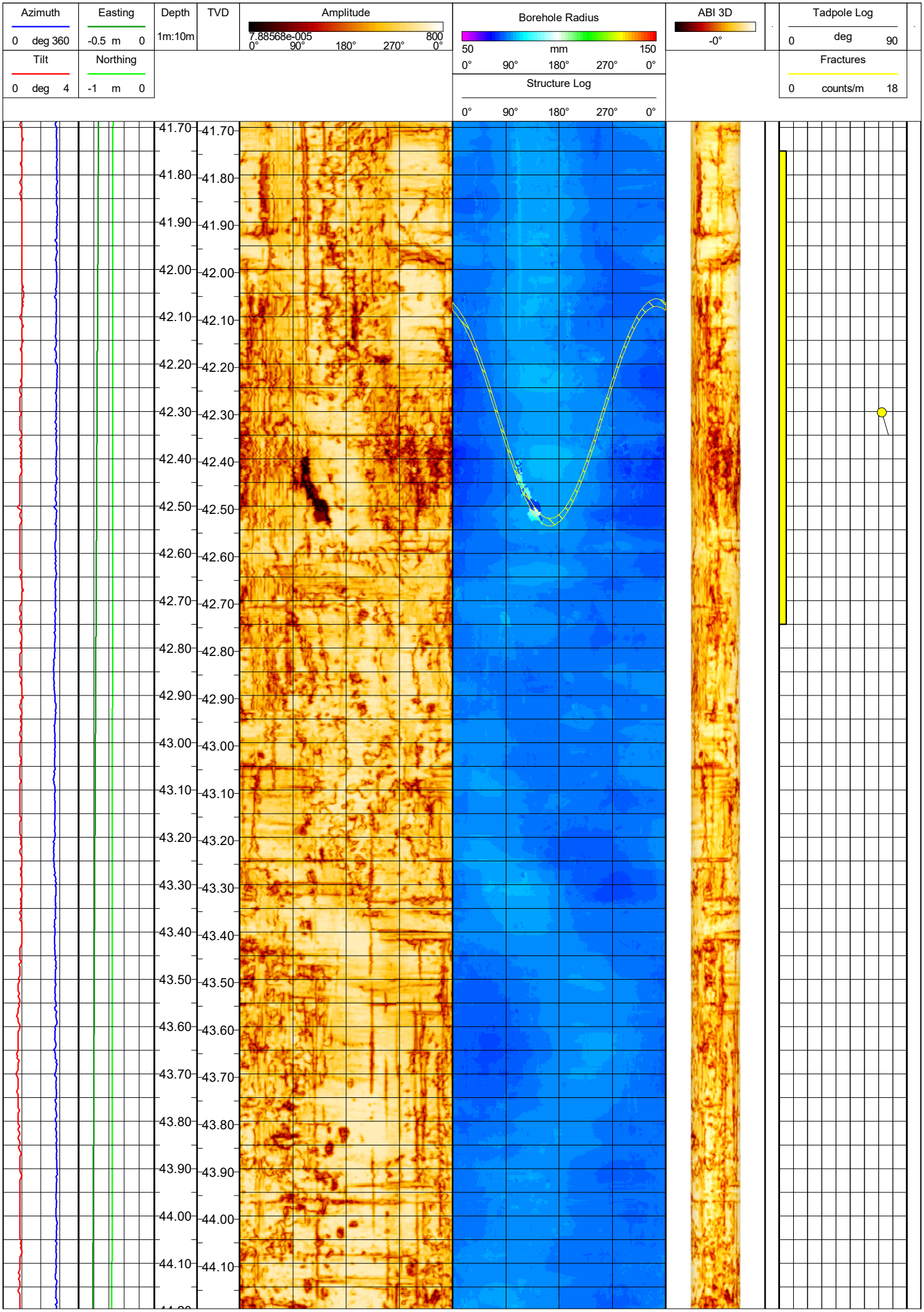
41.10
41.20
41.30
41.40
41.50
41.60

Plate 3.173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Easting
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Depth
1m:10m
TVD
Amplitude
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800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
Tilt
0 deg 4
Northing
-1 m 0
41.70
41.80
41.90
42.00
42.10
42.20
42.30
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42.50
42.60
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43.00
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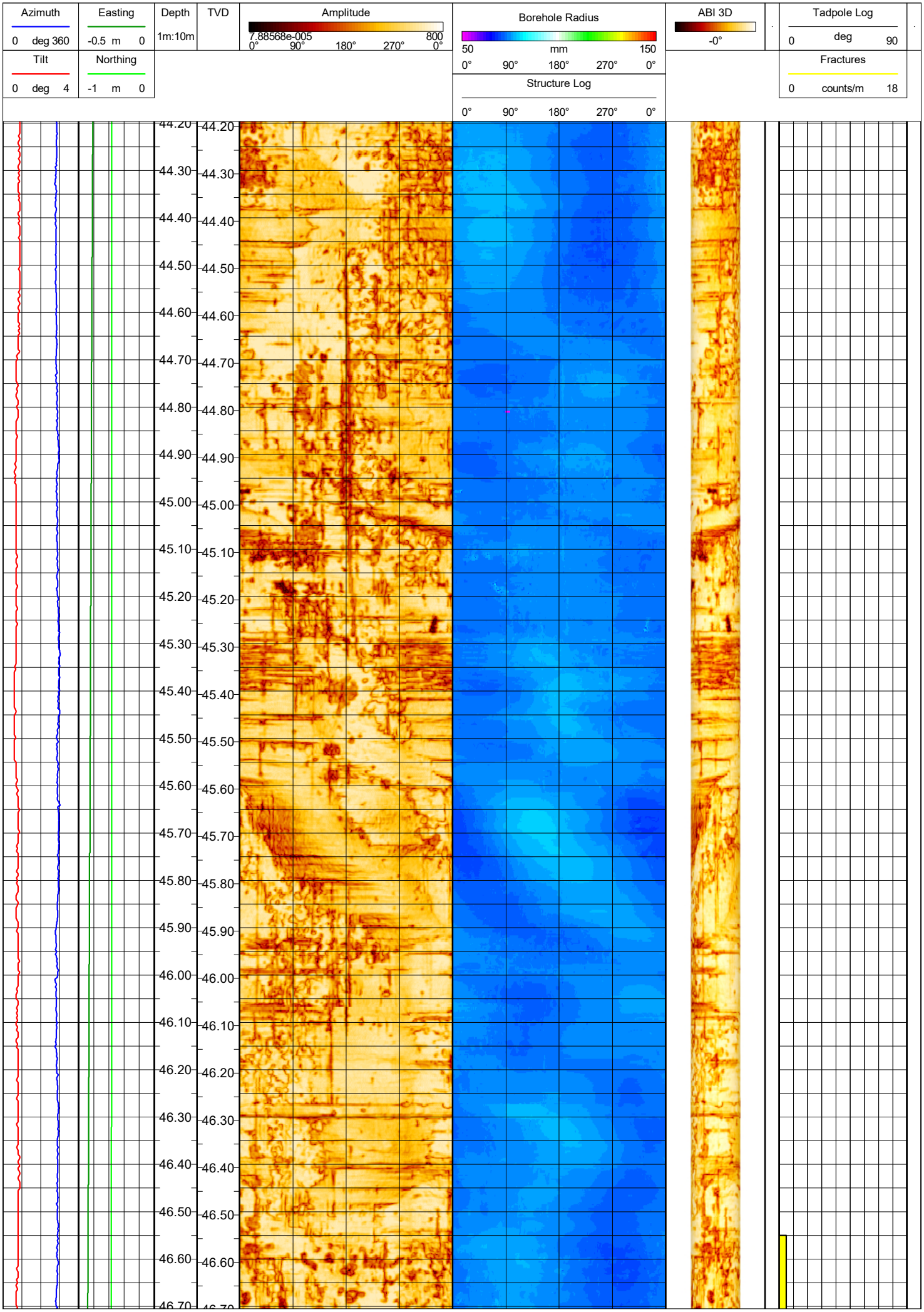
44.10

Plate 3.174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Easting
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Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-1 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
44.20
44.30
44.40
44.50
44.60
44.70
44.80
44.90
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
45.80
45.90
46.00
46.10
46.20
46.30
46.40
46.50
46.60

Plate 3.175

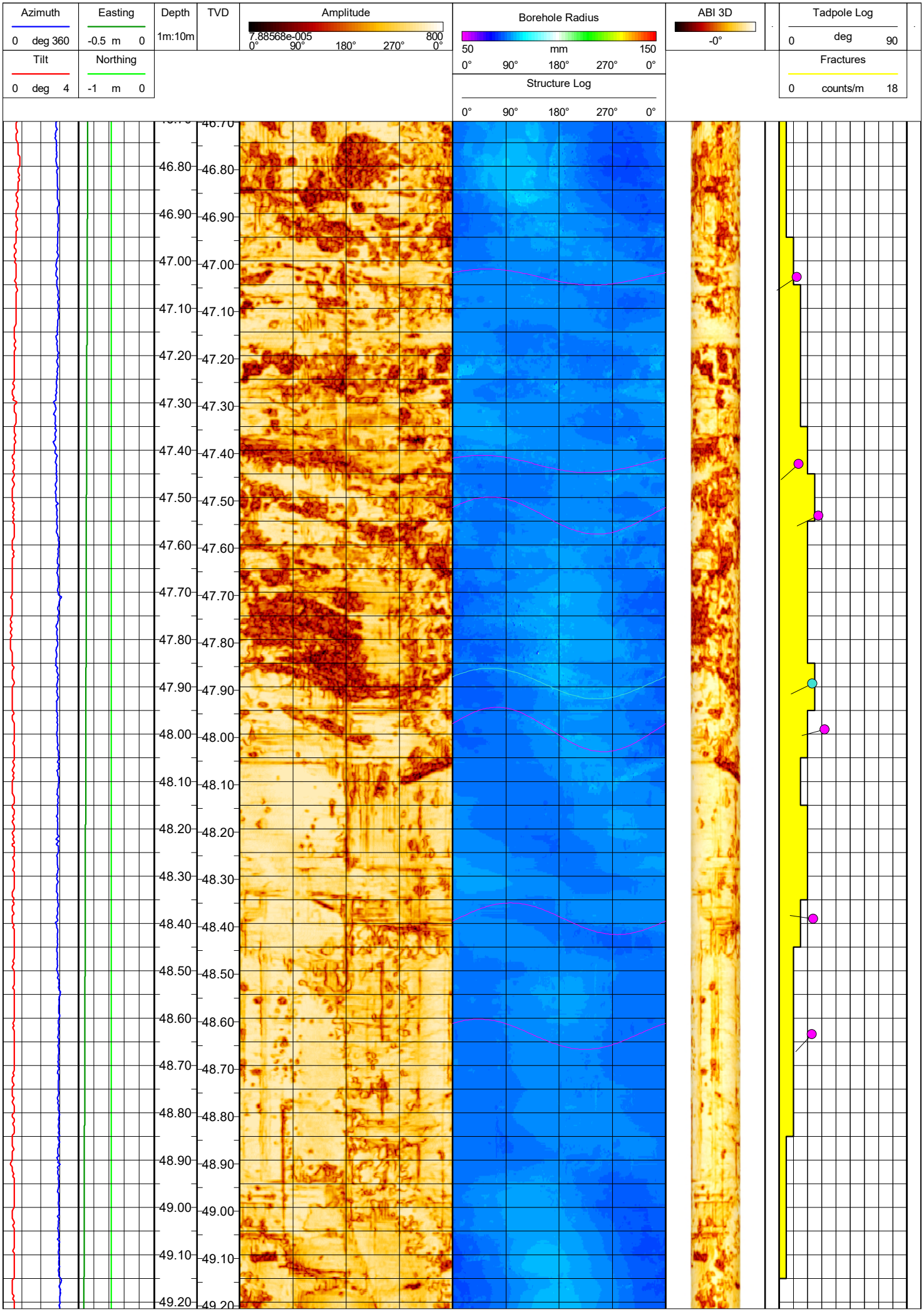

Azimuth
0 deg 360
Easting
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-1 m 0
Fractures
0 counts/m 18
46.80
46.90
47.00
47.10
47.20
47.30
47.40
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00
49.10
49.20

Plate 3.176

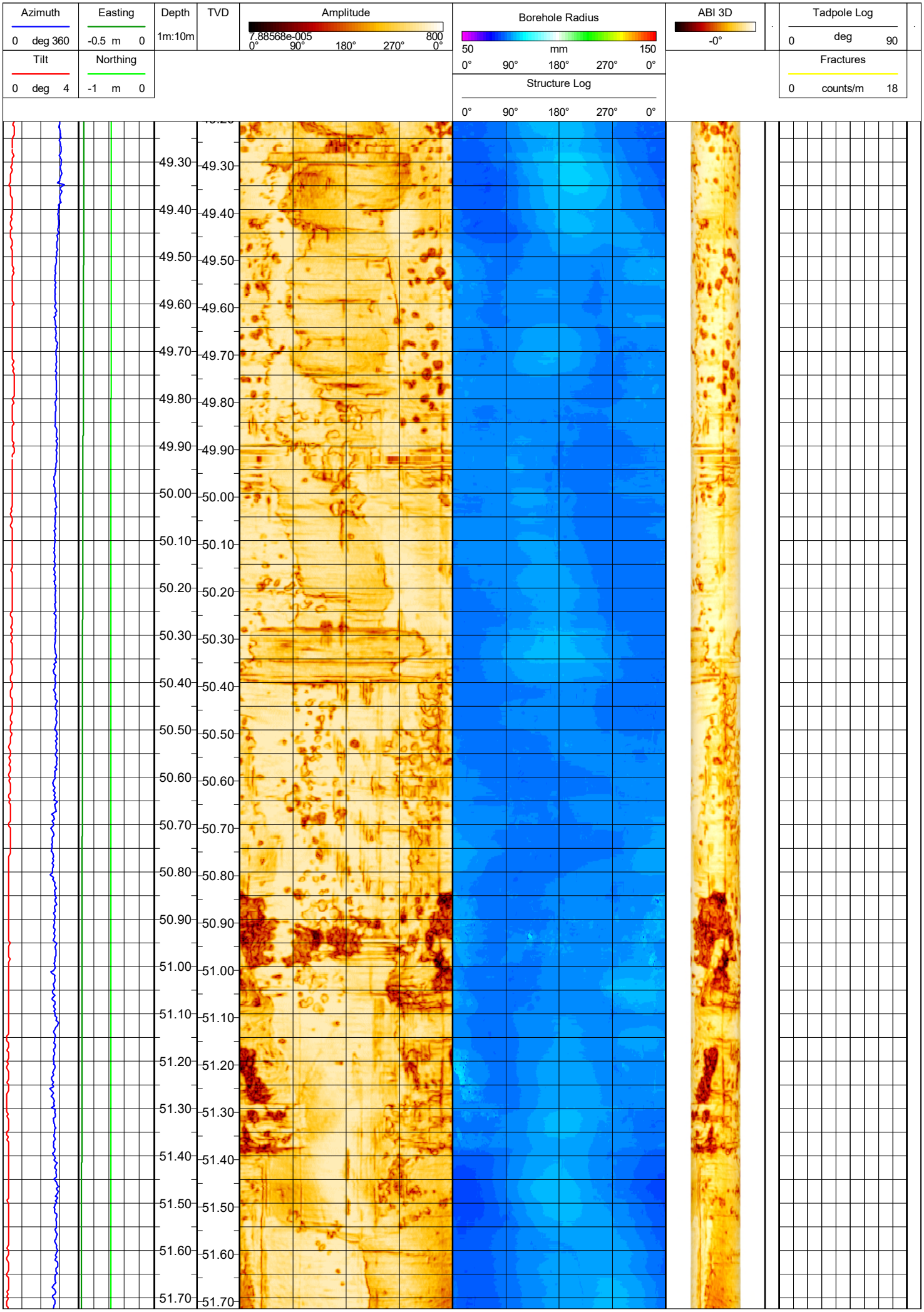

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
49.30
49.40
49.50
49.60
49.70
49.80
49.90
50.00
50.10
50.20
50.30
50.40
50.50
50.60
50.70
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60
51.70

Plate 3.177

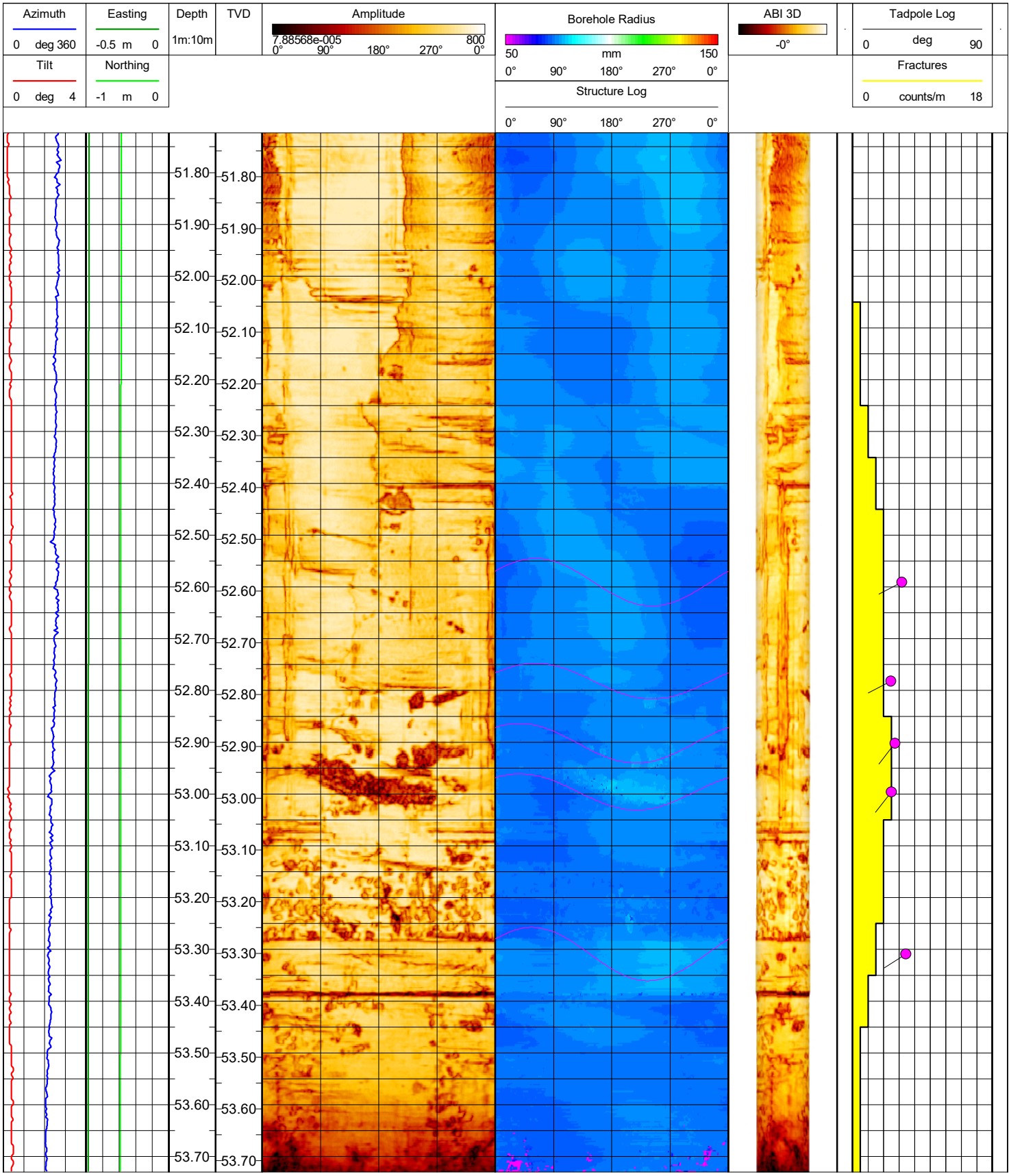
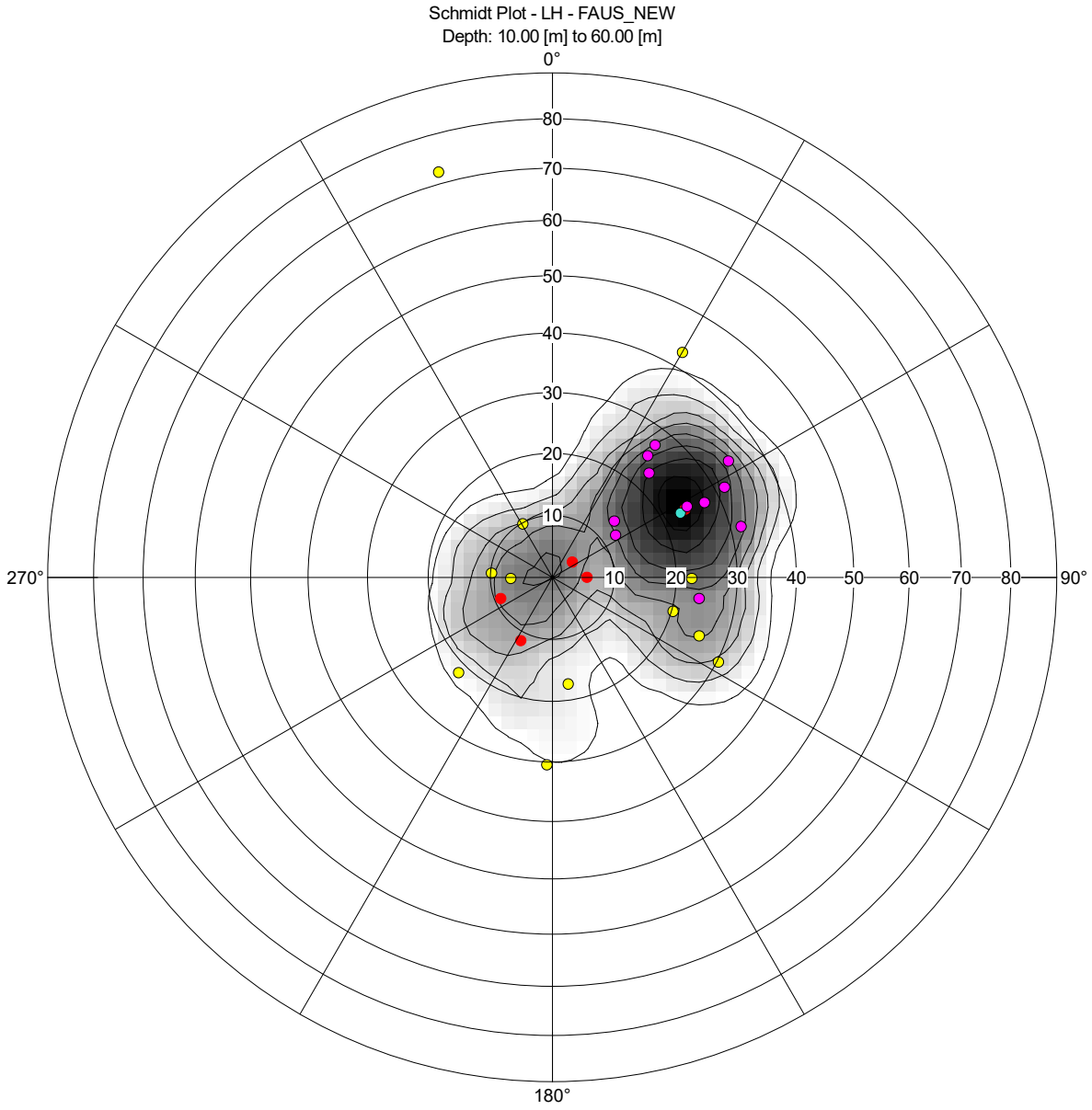

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.5 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
7.88568e-005
800
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50
52.60
52.70
52.80
52.90
53.00
53.10
53.20
53.30
53.40
53.50
53.60
53.70

Plate 3.178

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH09**
Log Title:	**Polar Plot**

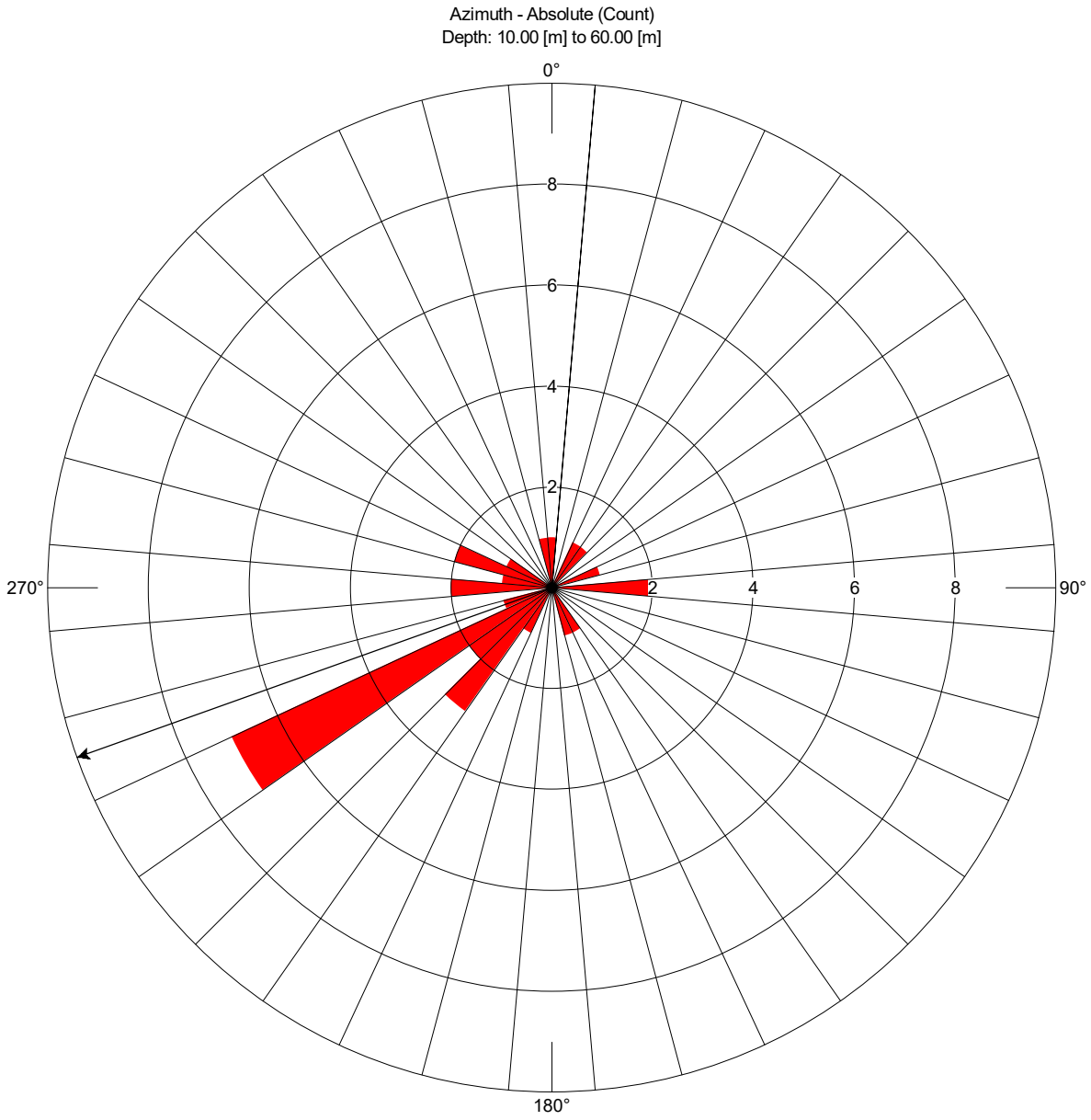
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	29	13.36	250.36
●	5	3.20	272.73
●	12	7.94	300.91
●	11	24.15	238.88
●	1	23.23	243.31

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH09**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	29.00
Mean (3D):	250.36
Min:	1.80
Max:	351.25

WIRELINE GEOPHYSICAL LOG

Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**

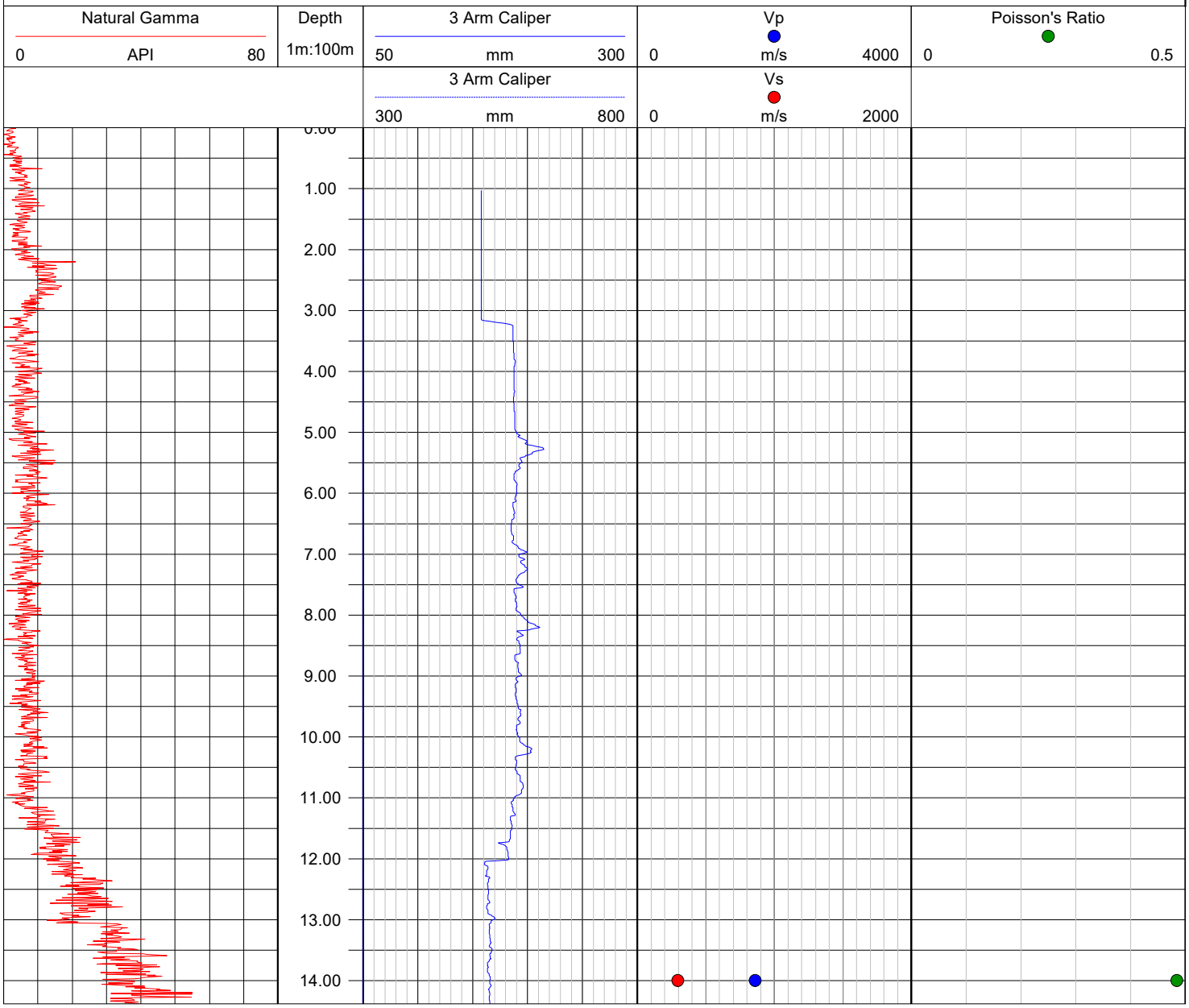
Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
Borehole: BH09	Fugro Site Manager: James Hills	19/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 300261.50, N: 5853958.52	Grid Reference: UTM Zone 30N Elevation: -30.50 m LAT
Borehole Depth (Drilling): 55.00 m	Recorded By: H. Spence & J. Fernandez	Processed By: H. Spence
Borehole Depth (Wireline): 54.96 m	Remarks:	
Logging Datum: Mud Level	Borehole was logged in three section, hole collapse at 32.80 m in Section 2 after the CAL3 run. ABI and PSL run were aborted in Section 3 by client request due to concerns about borehole stability.	
Logged Interval: 0.00 m - 53.73 m		
Fluid Level: 0.00 m		

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	12.20 m
146 mm	12.20 m	55.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 47.10 m	2.10 m
Steel	175 mm	- 47.10 m	12.20 m
Steel (Section 3)	146 mm	- 47.10 m	3.10 m
Steel (Section 2)	146 mm	- 47.10 m	12.80 m
Steel (Section 1)	146 mm	- 47.10 m	35.30 m



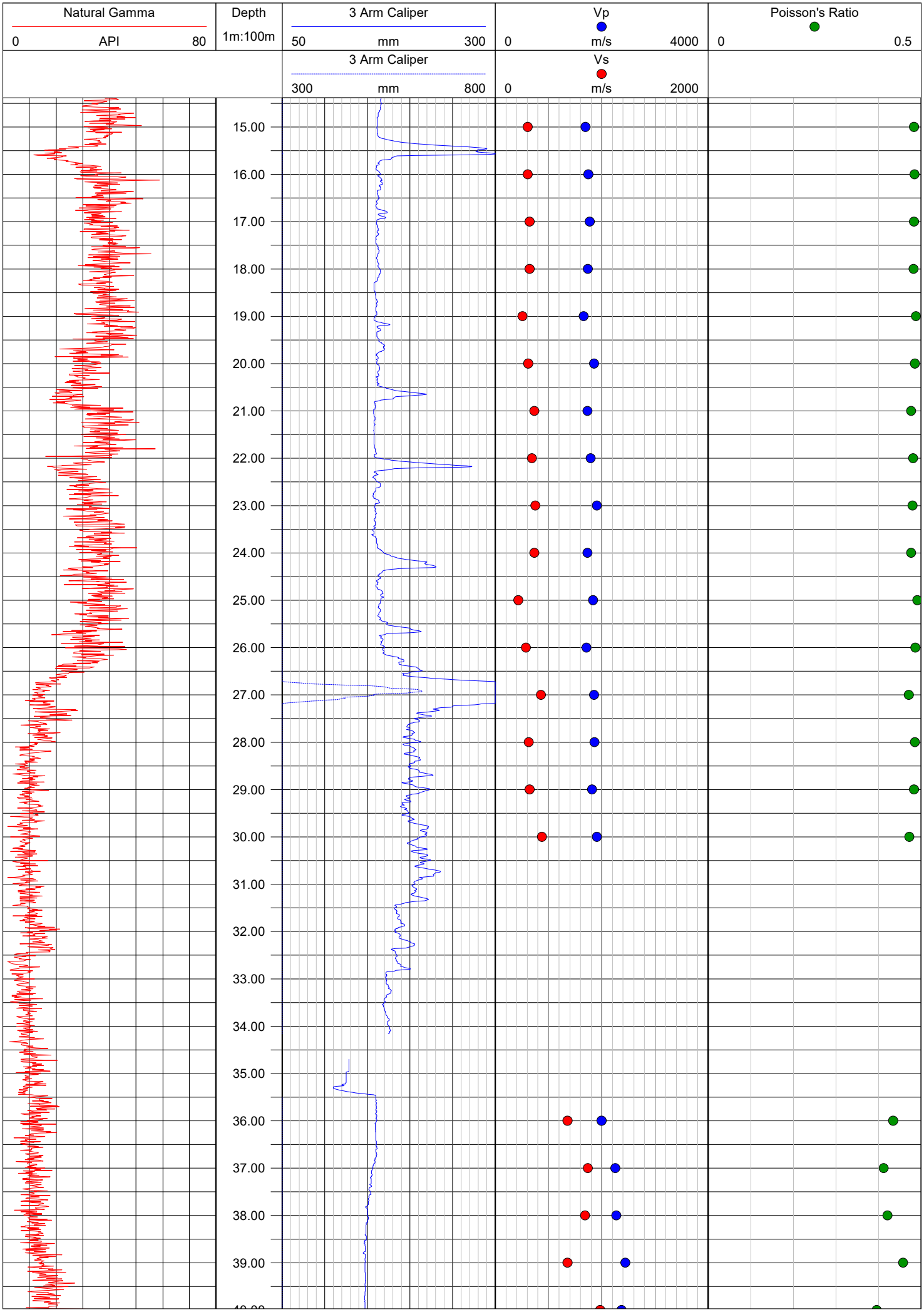
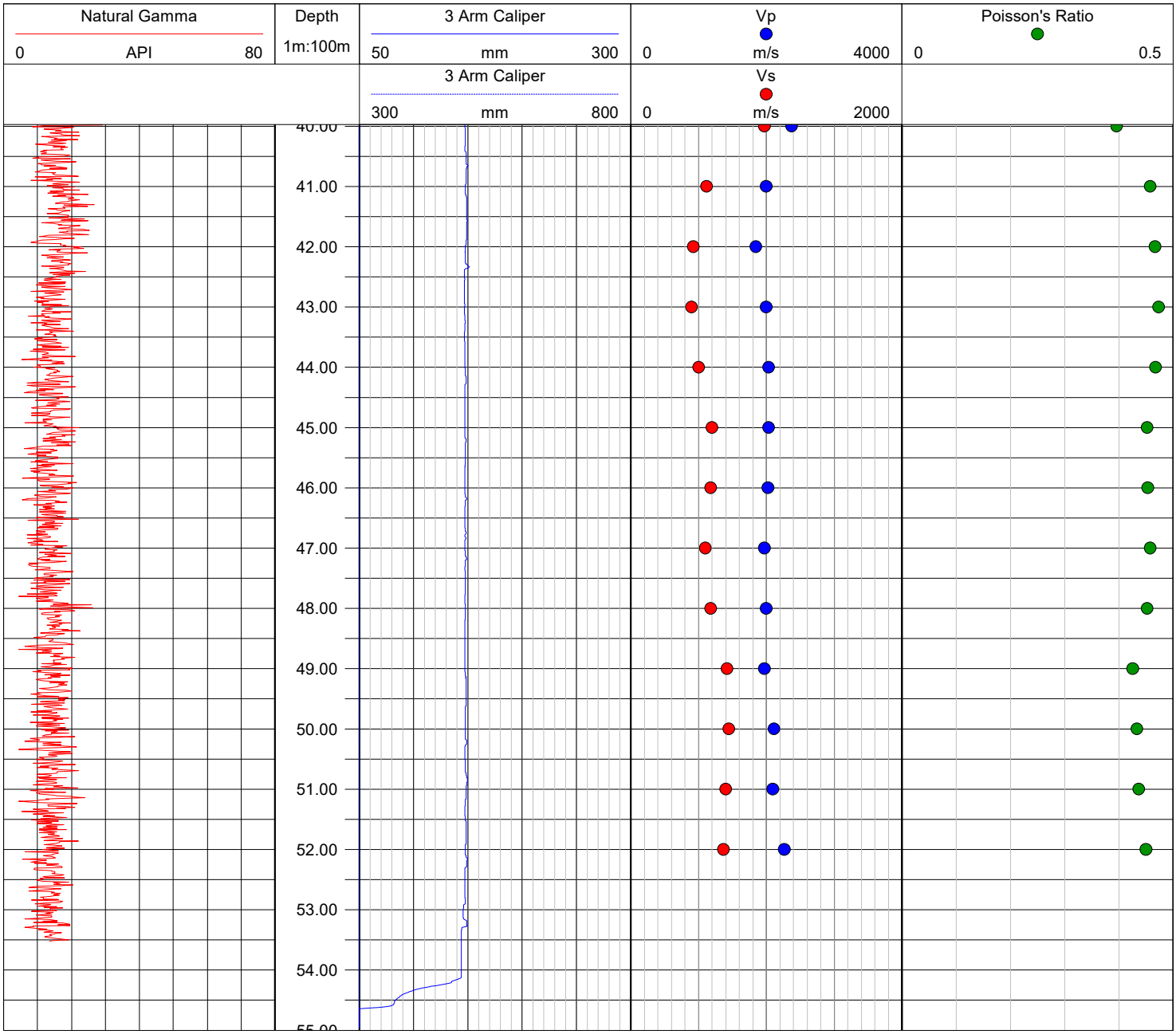

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
3 Arm Caliper
300
mm
800
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.182


Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
3 Arm Caliper
300
mm
800
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00
53.00
54.00

FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Acoustic Borehole Imager Plot**	
	Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date:
	Borehole: BH10	Fugro Site Manager: James Hills	02/07/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 301945.77, N: 5852228.48	Grid Reference: UTM Zone 30N	Elevation: -32.50 m LAT

Borehole Depth (Drilling):	62.50 m
Borehole Depth (Wireline):	62.00 m
Logging Datum:	Mud Level
Logged Interval:	5.00 m - 61.60 m
Fluid Level:	0.00 m

Tadpole Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence & M. Magrosky Processed By: H. Spence

Remarks:

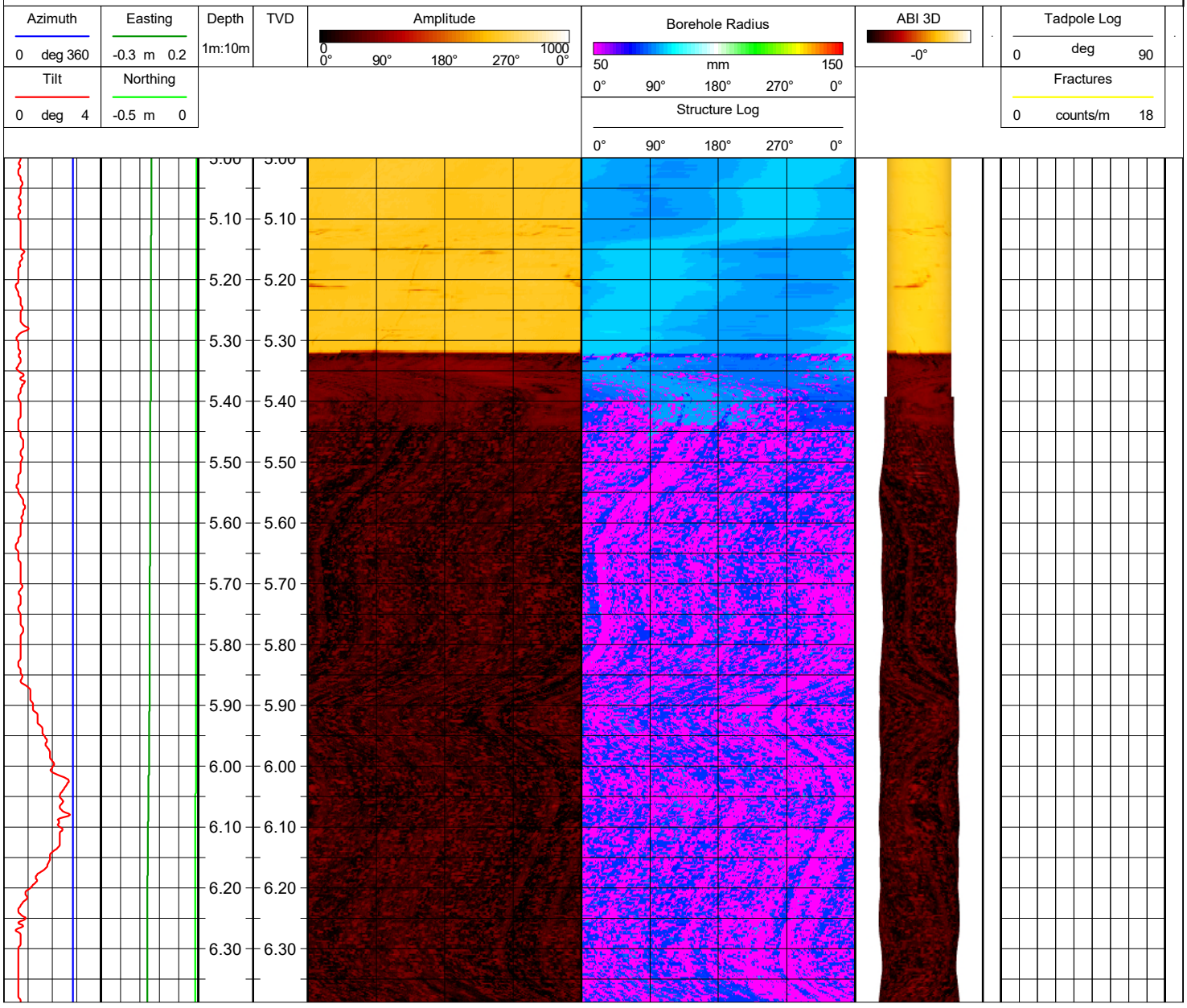
Borehole was logged in four sections, hole collapsed at 35.00 m before, 30.00 m after the CAL3 run in Section 2. Hole collapsed at 17.00 m for Section 3. Section 4 ABI run was aborted due to risk of borehole collapse. Section 3 ABI data (5.50-14.60 m) is biased, reflected amplitude is very low probably due to dissipation of acoustic energy in soft sediments.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	14.60 m
146 mm	14.60 m	62.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 50.14 m	2.20 m
Steel (Section 1-2)	175 mm	- 50.14 m	14.60 m
Steel (Section 4)	146 mm	- 50.14 m	3.30 m
Steel (Section 3)	146 mm	- 50.14 m	5.50 m
Steel (Section 2)	146 mm	- 50.14 m	12.90 m
Steel (Section 1)	146 mm	- 50.14 m	42.90 m



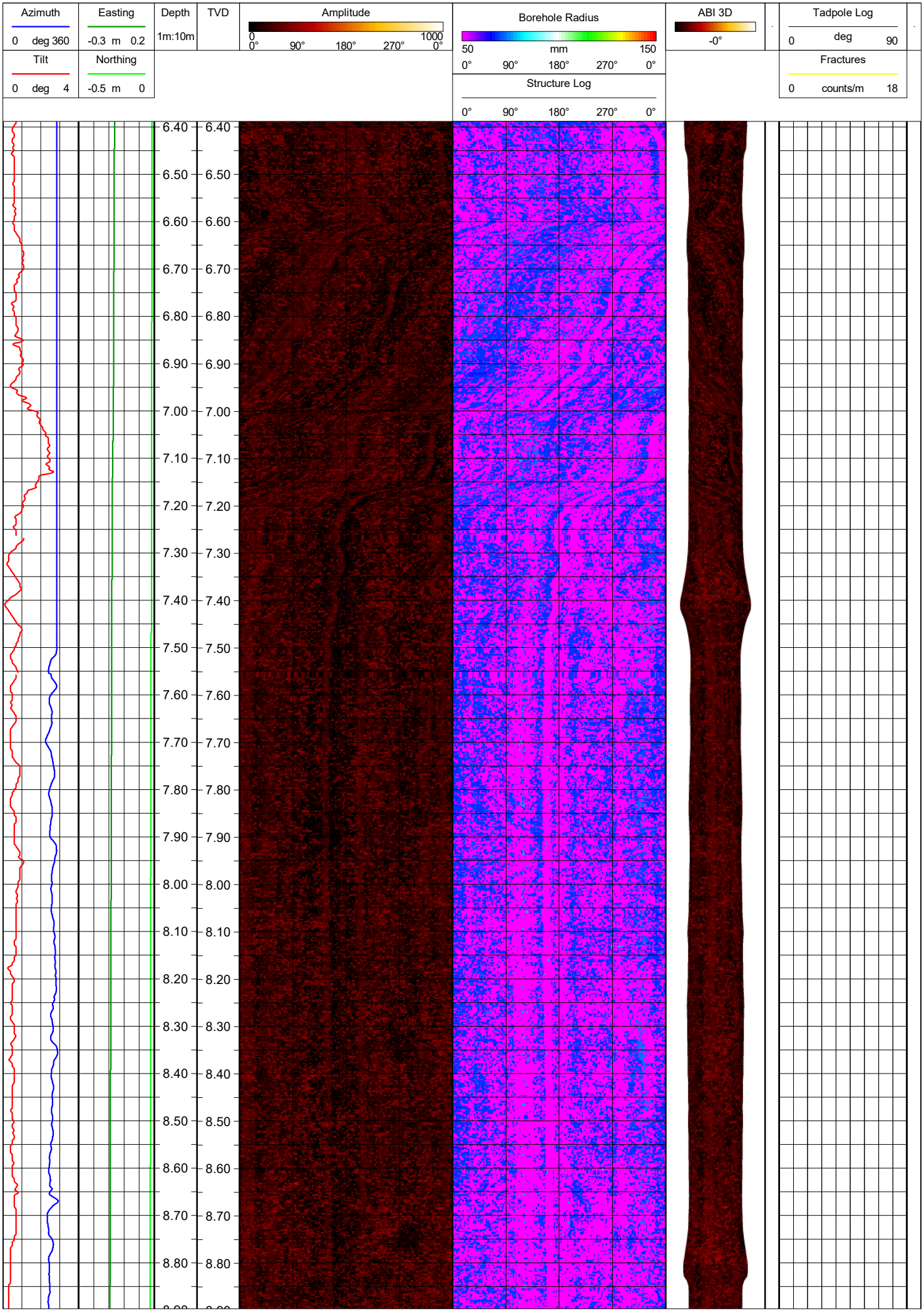

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
6.40
6.50
6.60
6.70
6.80
6.90
7.00
7.10
7.20
7.30
7.40
7.50
7.60
7.70
7.80
7.90
8.00
8.10
8.20
8.30
8.40
8.50
8.60
8.70
8.80

Plate 3.185

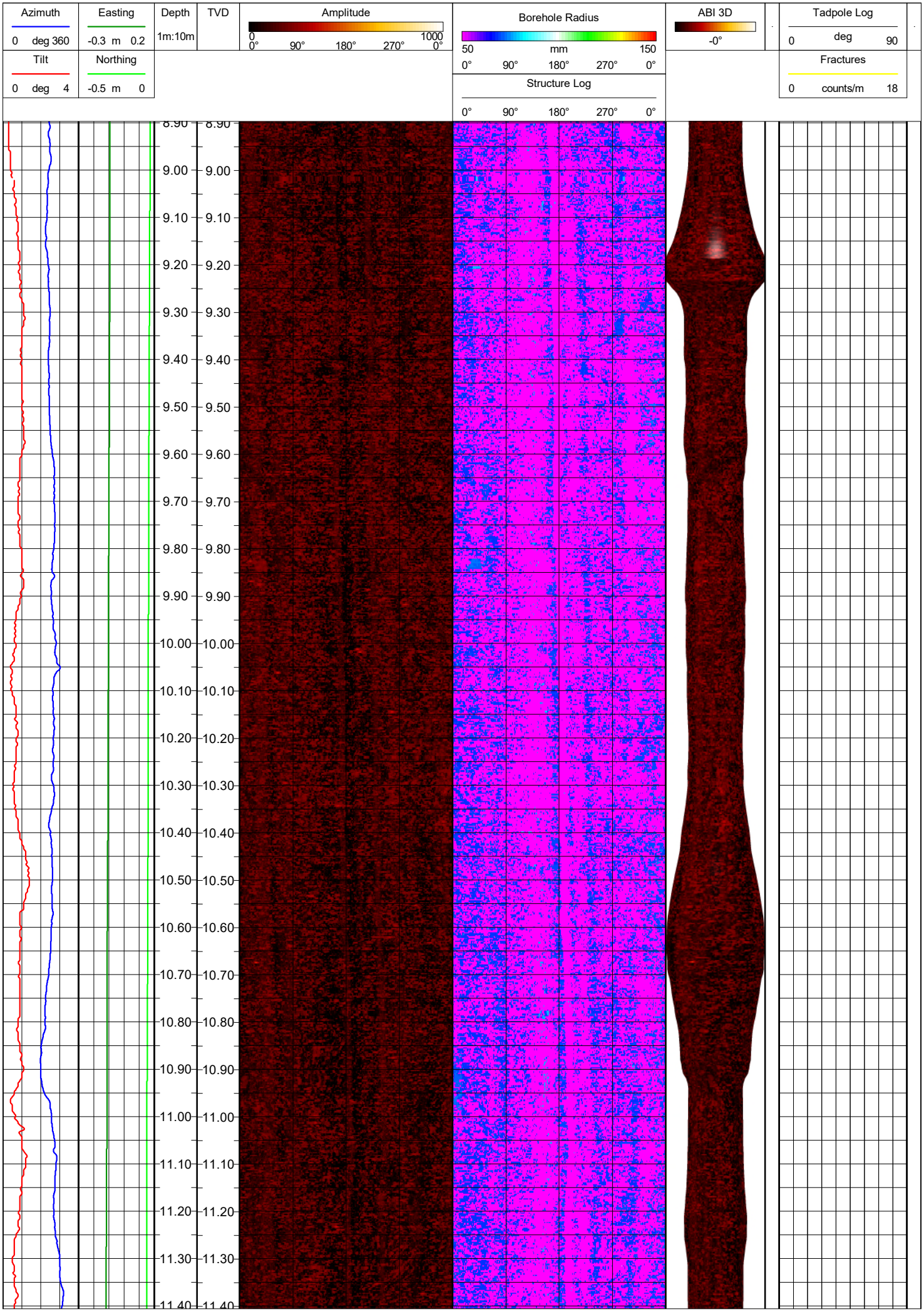

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
9.00
9.10
9.20
9.30
9.40
9.50
9.60
9.70
9.80
9.90
10.00
10.10
10.20
10.30
10.40
10.50
10.60
10.70
10.80
10.90
11.00
11.10
11.20
11.30
11.40

Plate 3.186

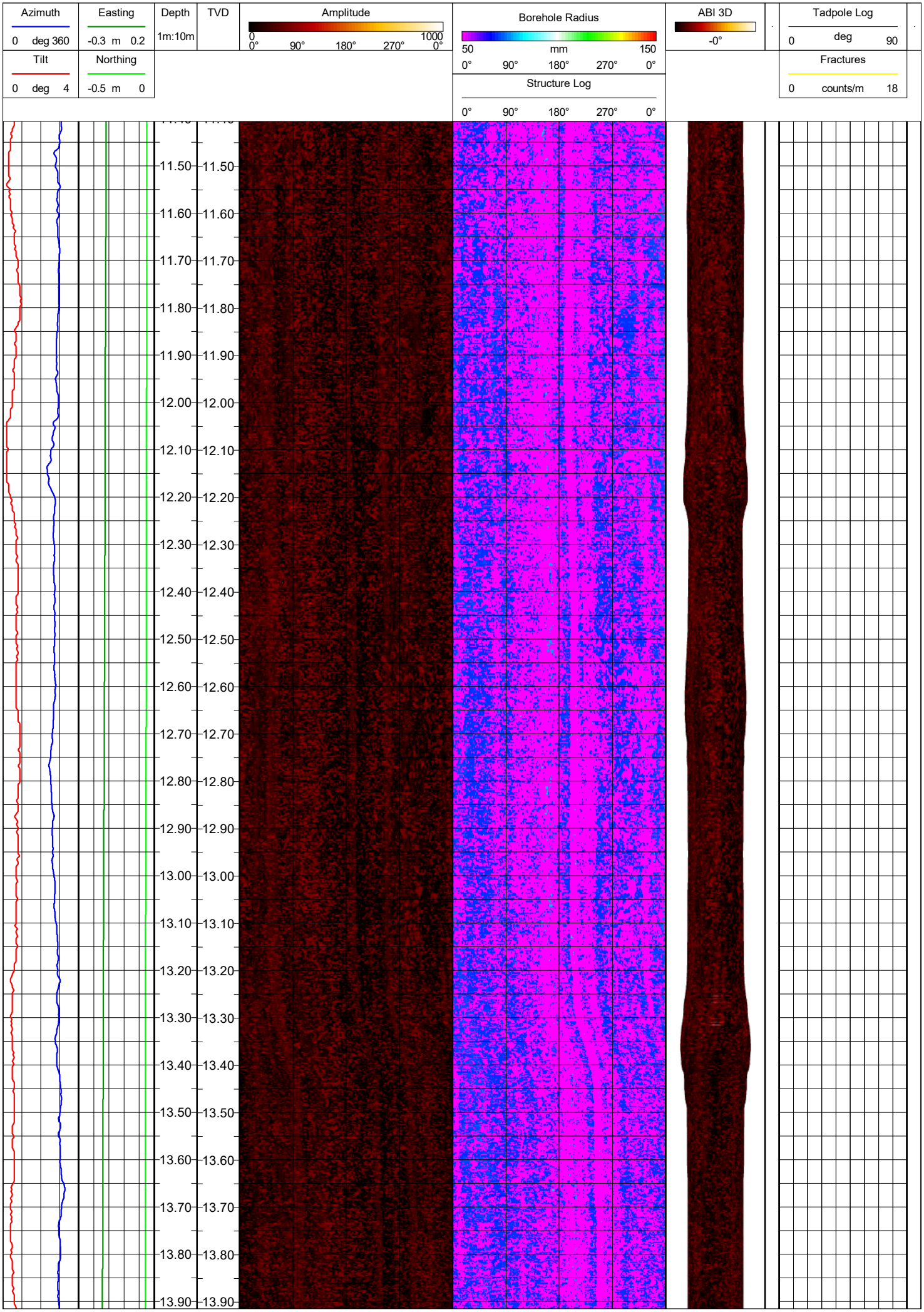

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
11.50 11.50
11.60 11.60
11.70 11.70
11.80 11.80
11.90 11.90
12.00 12.00
12.10 12.10
12.20 12.20
12.30 12.30
12.40 12.40
12.50 12.50
12.60 12.60
12.70 12.70
12.80 12.80
12.90 12.90
13.00 13.00
13.10 13.10
13.20 13.20
13.30 13.30
13.40 13.40
13.50 13.50
13.60 13.60
13.70 13.70
13.80 13.80
13.90 13.90

Plate 3.187

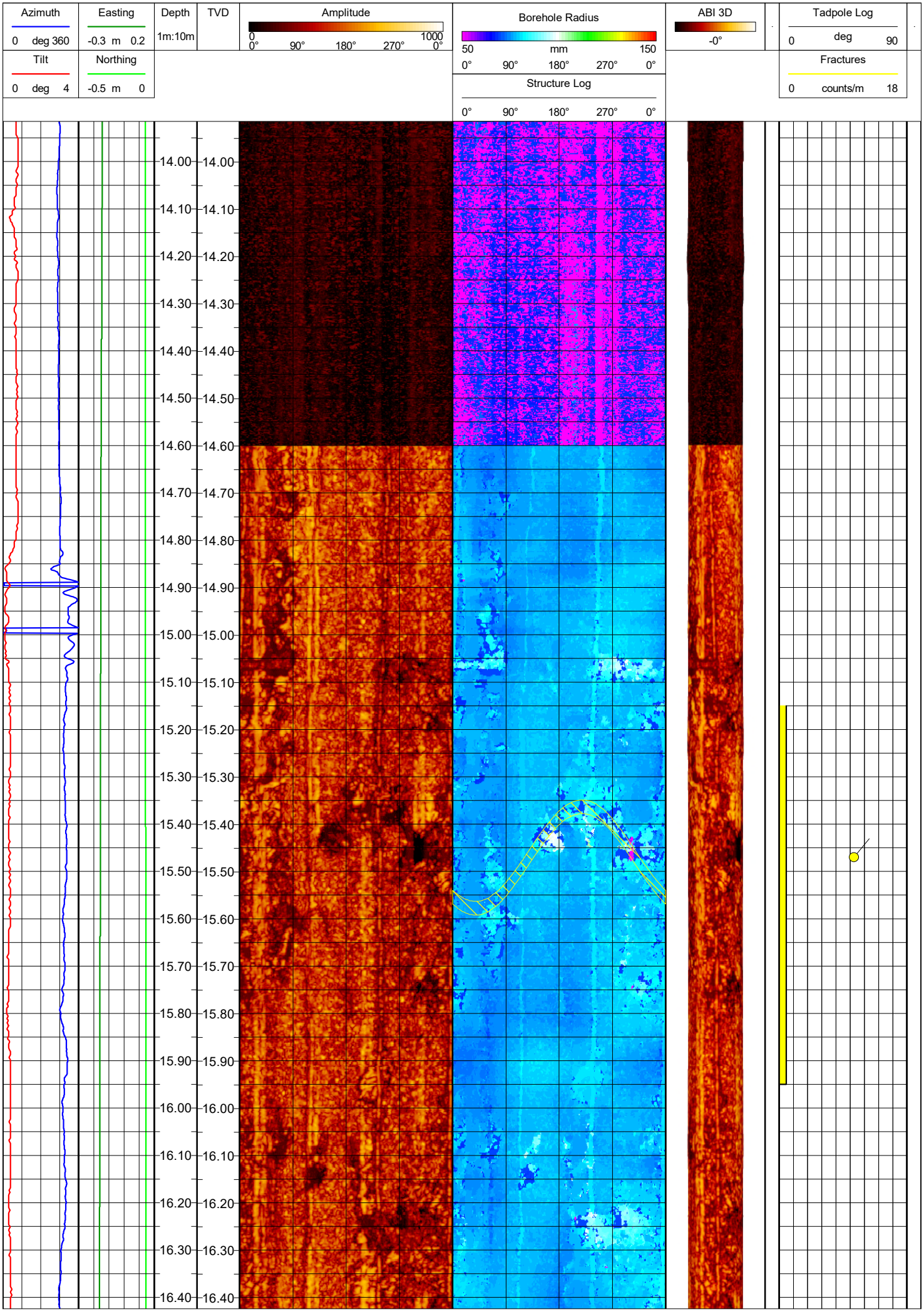

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
14.00 14.00
14.10 14.10
14.20 14.20
14.30 14.30
14.40 14.40
14.50 14.50
14.60 14.60
14.70 14.70
14.80 14.80
14.90 14.90
15.00 15.00
15.10 15.10
15.20 15.20
15.30 15.30
15.40 15.40
15.50 15.50
15.60 15.60
15.70 15.70
15.80 15.80
15.90 15.90
16.00 16.00
16.10 16.10
16.20 16.20
16.30 16.30
16.40 16.40

Plate 3.188

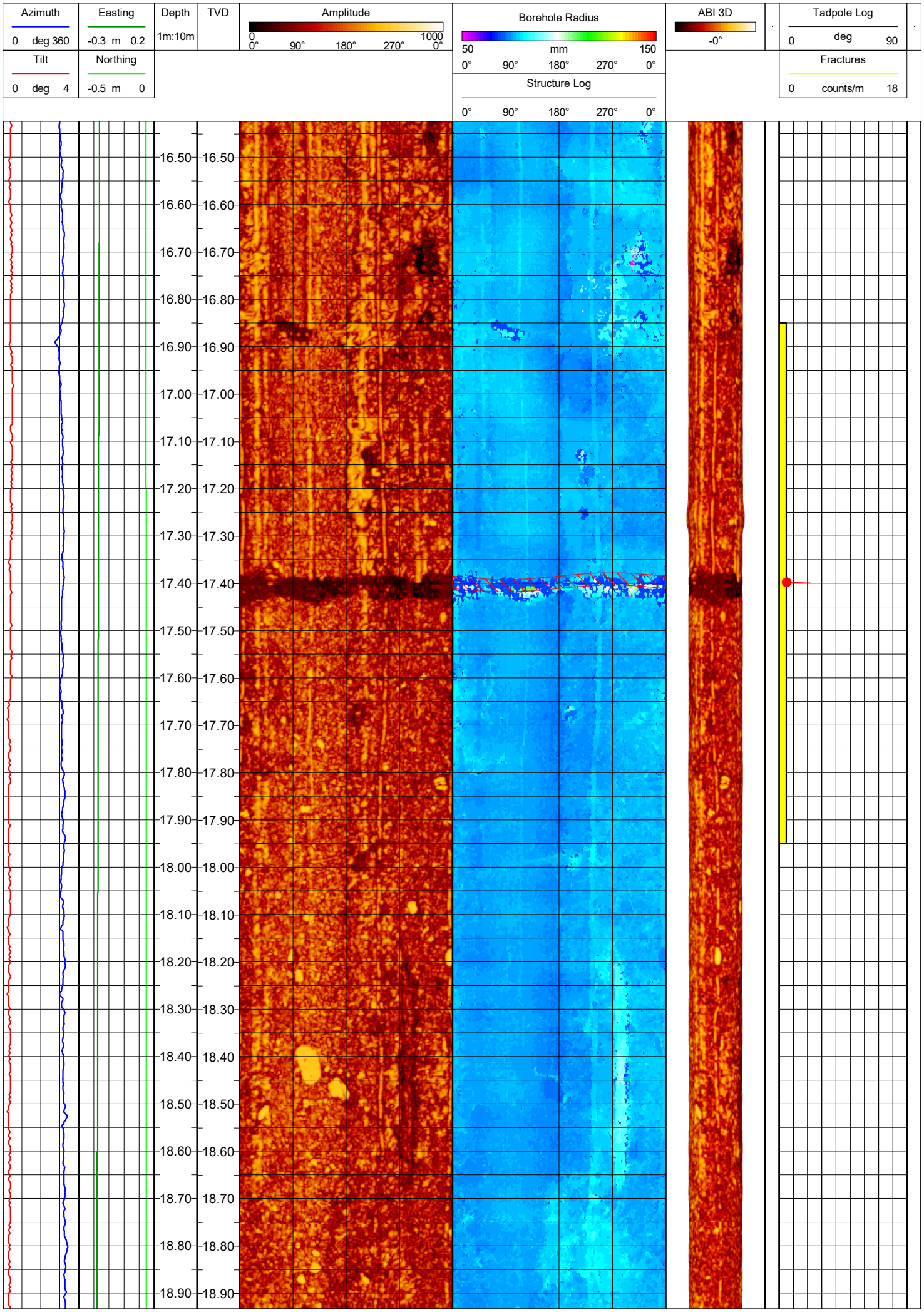

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
16.50 16.50
16.60 16.60
16.70 16.70
16.80 16.80
16.90 16.90
17.00 17.00
17.10 17.10
17.20 17.20
17.30 17.30
17.40 17.40
17.50 17.50
17.60 17.60
17.70 17.70
17.80 17.80
17.90 17.90
18.00 18.00
18.10 18.10
18.20 18.20
18.30 18.30
18.40 18.40
18.50 18.50
18.60 18.60
18.70 18.70
18.80 18.80
18.90 18.90

Plate 3.189

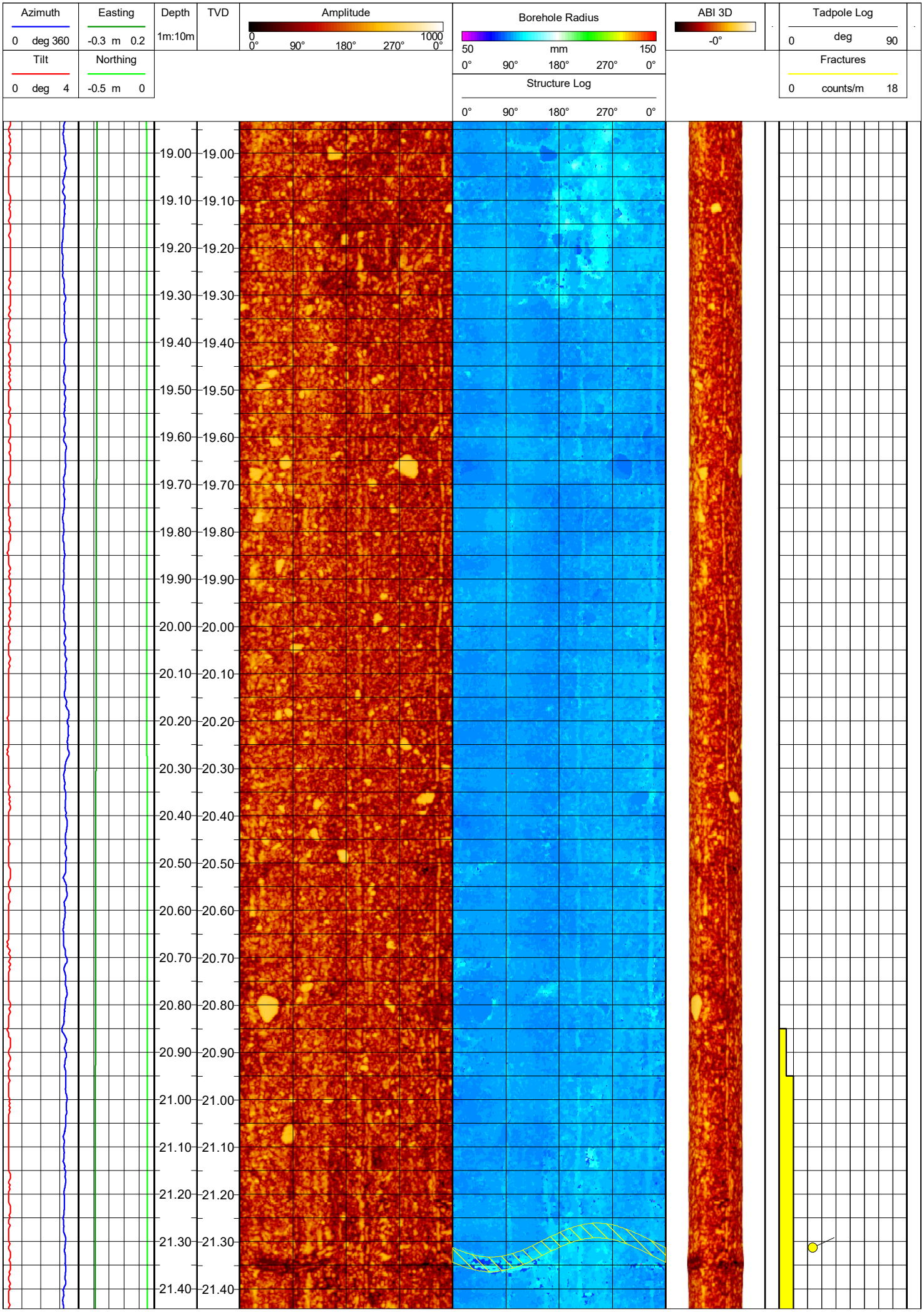

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
19.00
19.10
19.20
19.30
19.40
19.50
19.60
19.70
19.80
19.90
20.00
20.10
20.20
20.30
20.40
20.50
20.60
20.70
20.80
20.90
21.00
21.10
21.20
21.30
21.40

Plate 3.190

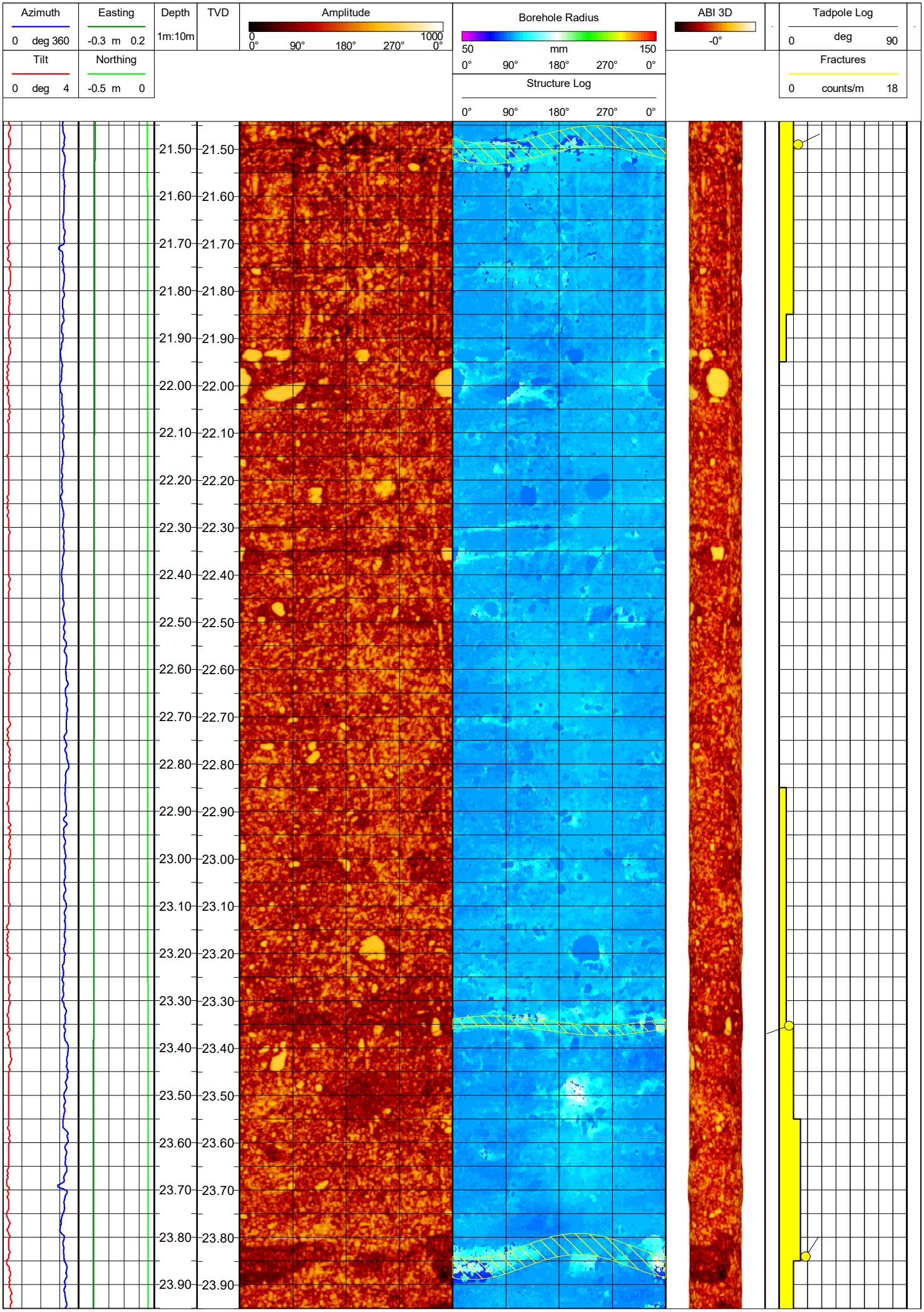

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
21.50 21.50
21.60 21.60
21.70 21.70
21.80 21.80
21.90 21.90
22.00 22.00
22.10 22.10
22.20 22.20
22.30 22.30
22.40 22.40
22.50 22.50
22.60 22.60
22.70 22.70
22.80 22.80
22.90 22.90
23.00 23.00
23.10 23.10
23.20 23.20
23.30 23.30
23.40 23.40
23.50 23.50
23.60 23.60
23.70 23.70
23.80 23.80
23.90 23.90

Plate 3.191

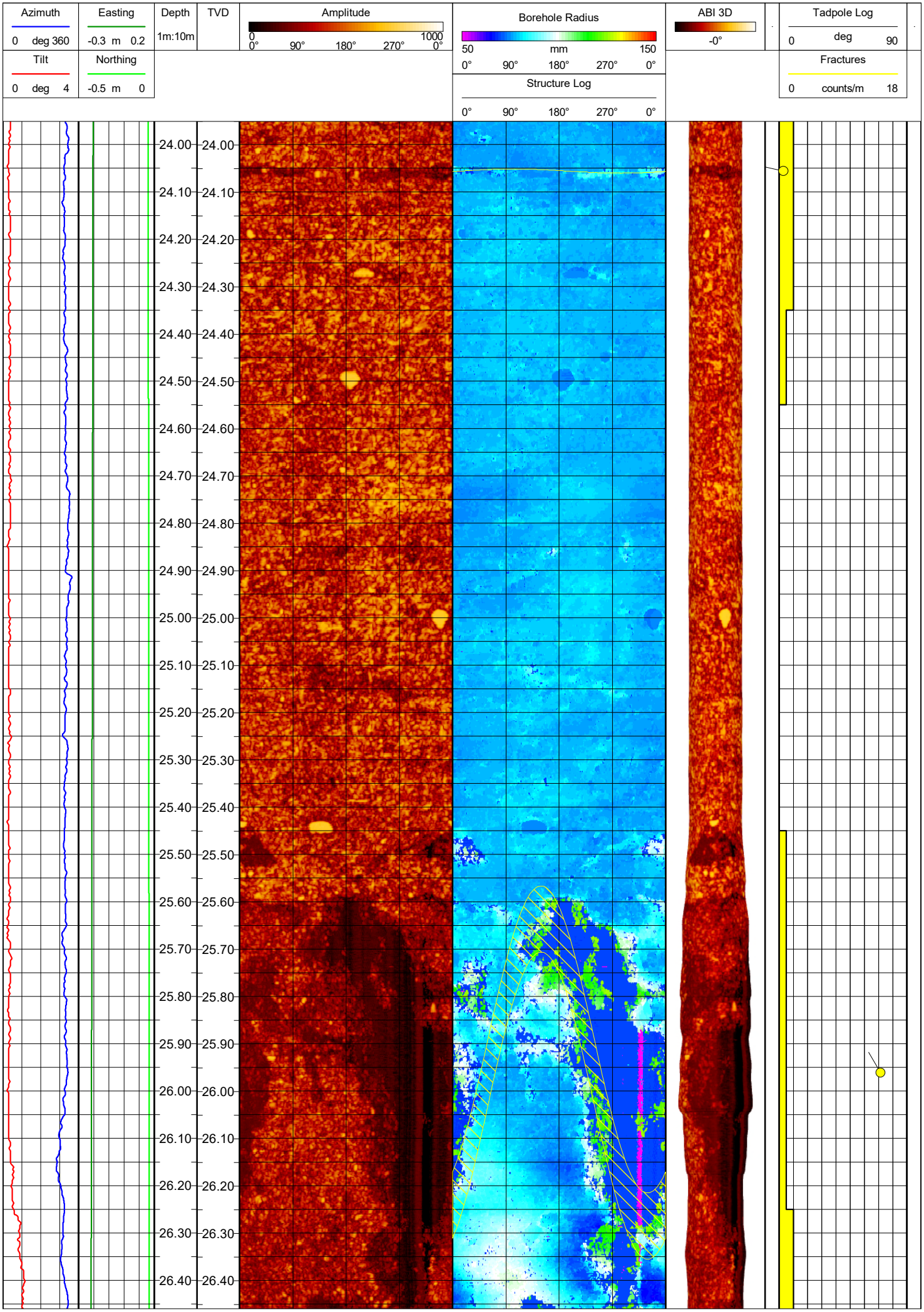

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
24.00
24.10
24.20
24.30
24.40
24.50
24.60
24.70
24.80
24.90
25.00
25.10
25.20
25.30
25.40
25.50
25.60
25.70
25.80
25.90
26.00
26.10
26.20
26.30
26.40

Plate 3.192

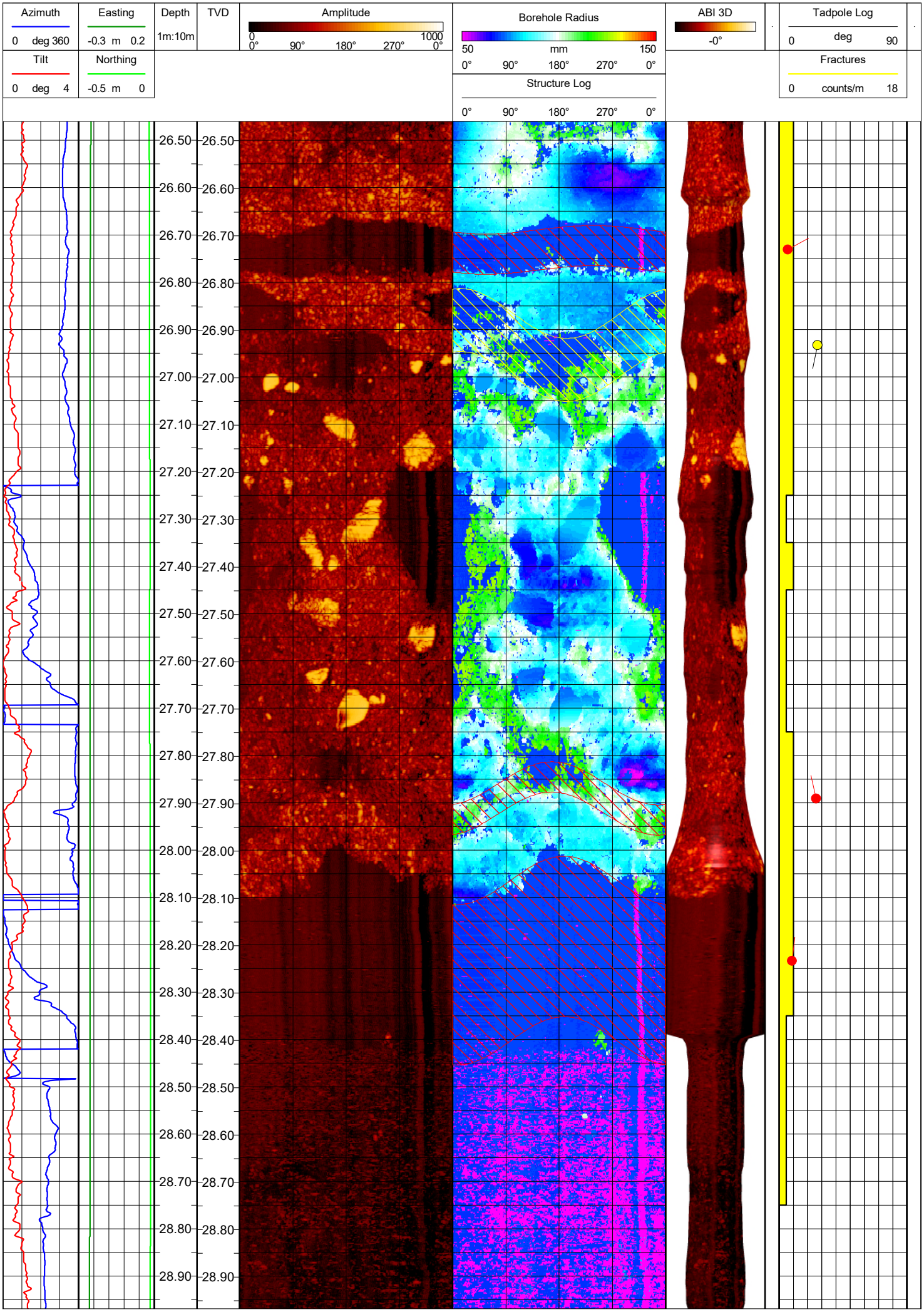

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
26.50 26.50
26.60 26.60
26.70 26.70
26.80 26.80
26.90 26.90
27.00 27.00
27.10 27.10
27.20 27.20
27.30 27.30
27.40 27.40
27.50 27.50
27.60 27.60
27.70 27.70
27.80 27.80
27.90 27.90
28.00 28.00
28.10 28.10
28.20 28.20
28.30 28.30
28.40 28.40
28.50 28.50
28.60 28.60
28.70 28.70
28.80 28.80
28.90 28.90

Plate 3.193

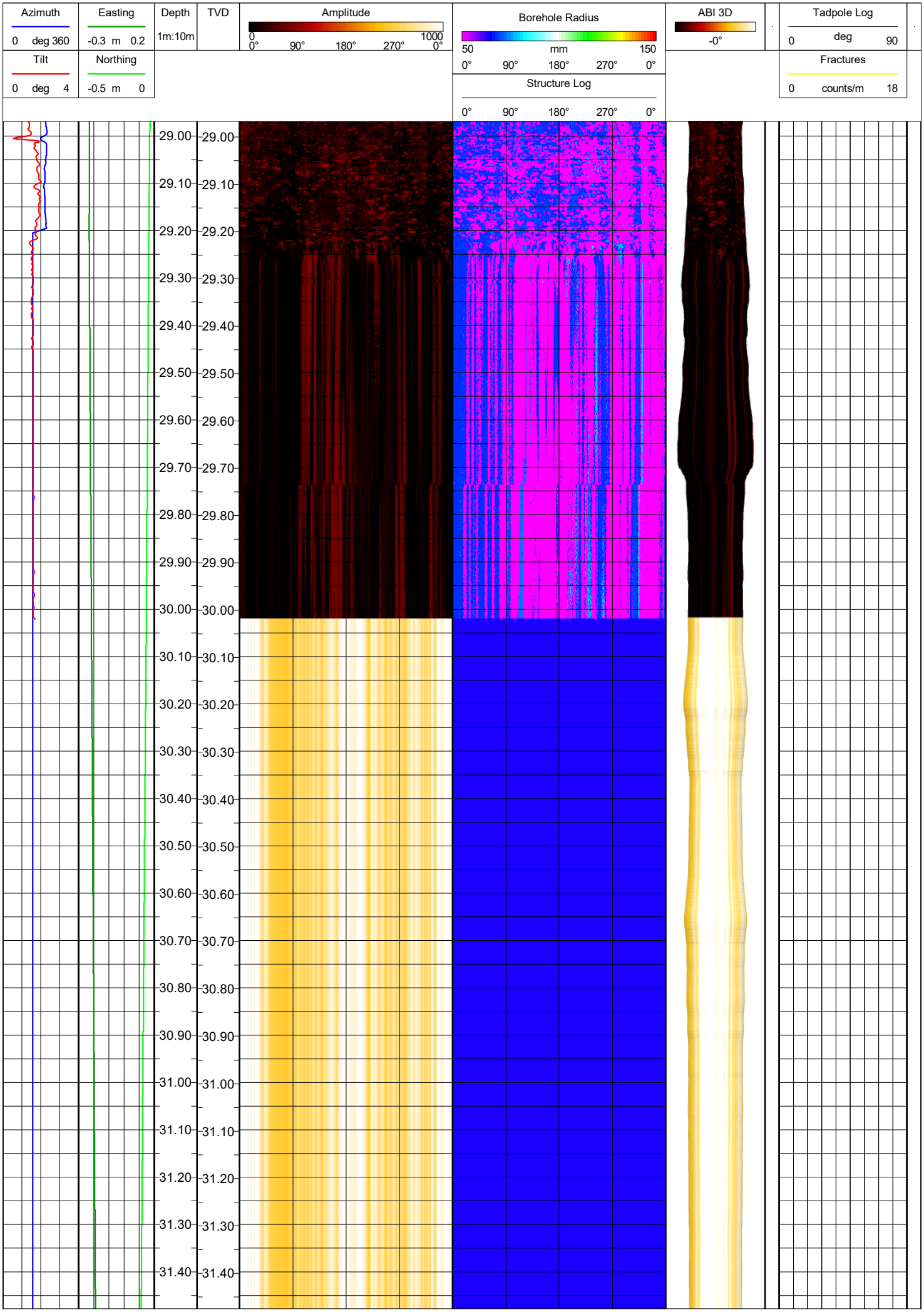

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
29.00 29.00
29.10 29.10
29.20 29.20
29.30 29.30
29.40 29.40
29.50 29.50
29.60 29.60
29.70 29.70
29.80 29.80
29.90 29.90
30.00 30.00
30.10 30.10
30.20 30.20
30.30 30.30
30.40 30.40
30.50 30.50
30.60 30.60
30.70 30.70
30.80 30.80
30.90 30.90
31.00 31.00
31.10 31.10
31.20 31.20
31.30 31.30
31.40 31.40

Plate 3.194

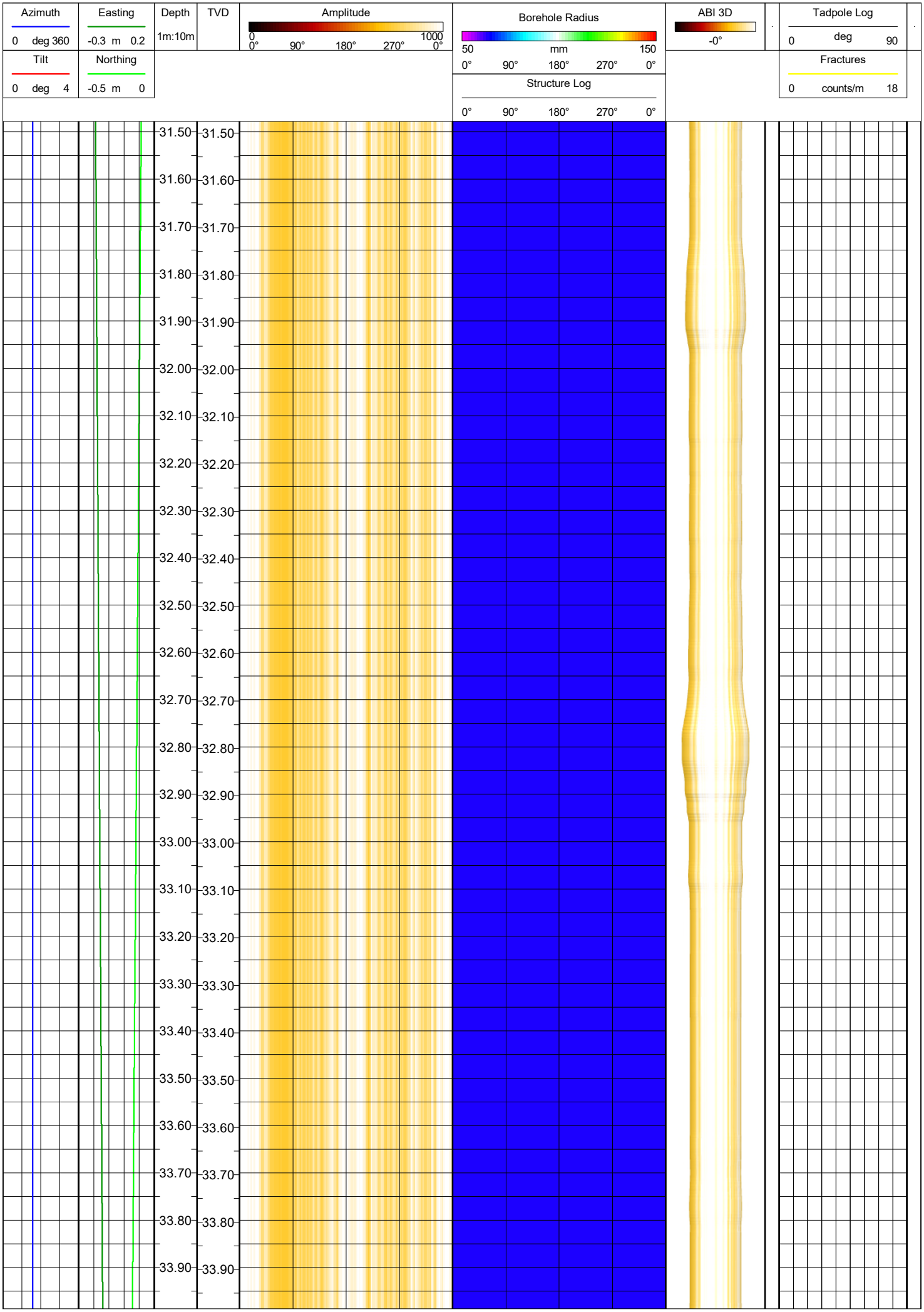

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
31.50
31.60
31.70
31.80
31.90
32.00
32.10
32.20
32.30
32.40
32.50
32.60
32.70
32.80
32.90
33.00
33.10
33.20
33.30
33.40
33.50
33.60
33.70
33.80
33.90

Plate 3.195

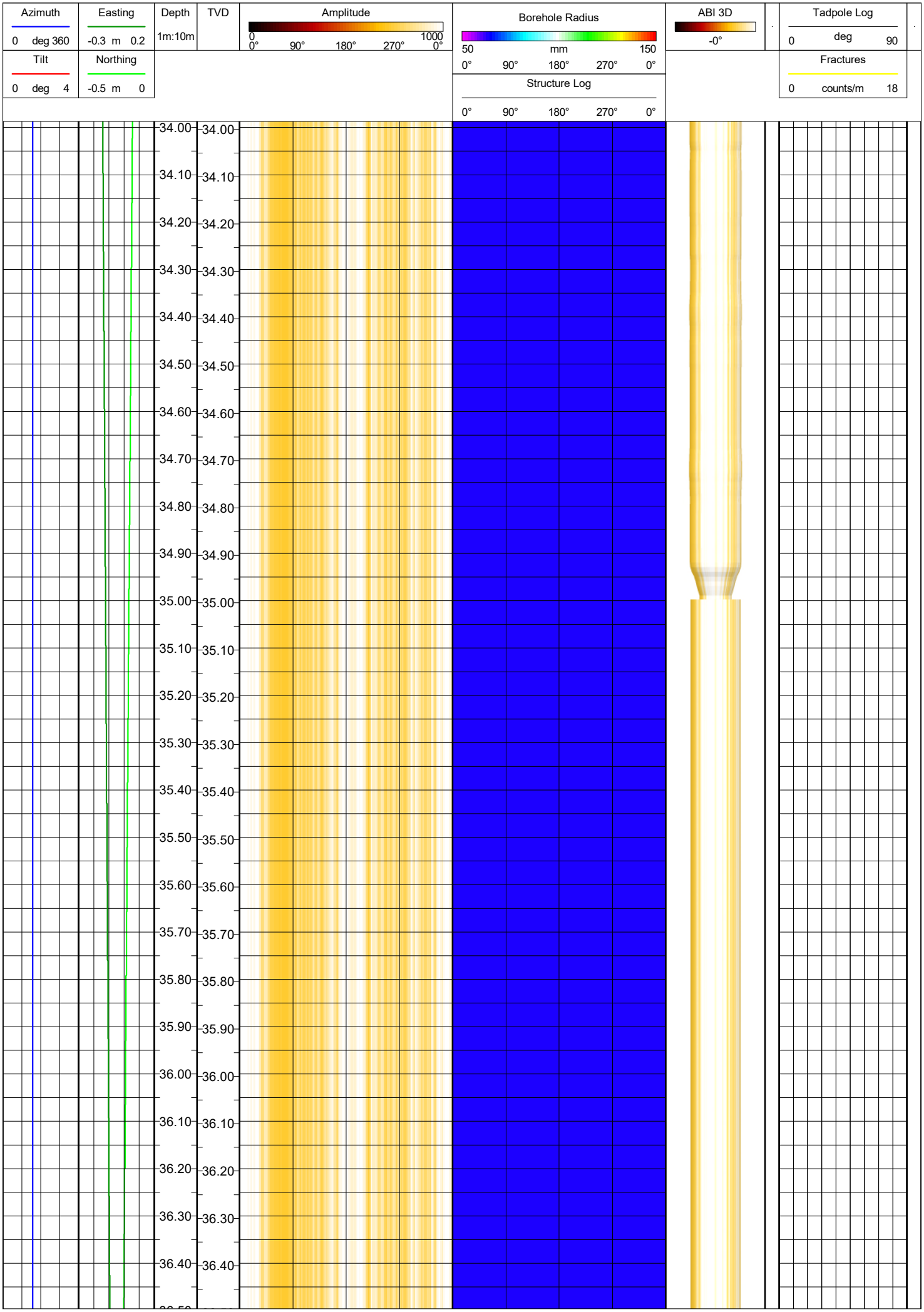

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
34.00
34.10
34.20
34.30
34.40
34.50
34.60
34.70
34.80
34.90
35.00
35.10
35.20
35.30
35.40
35.50
35.60
35.70
35.80
35.90
36.00
36.10
36.20
36.30
36.40

Plate 3.196

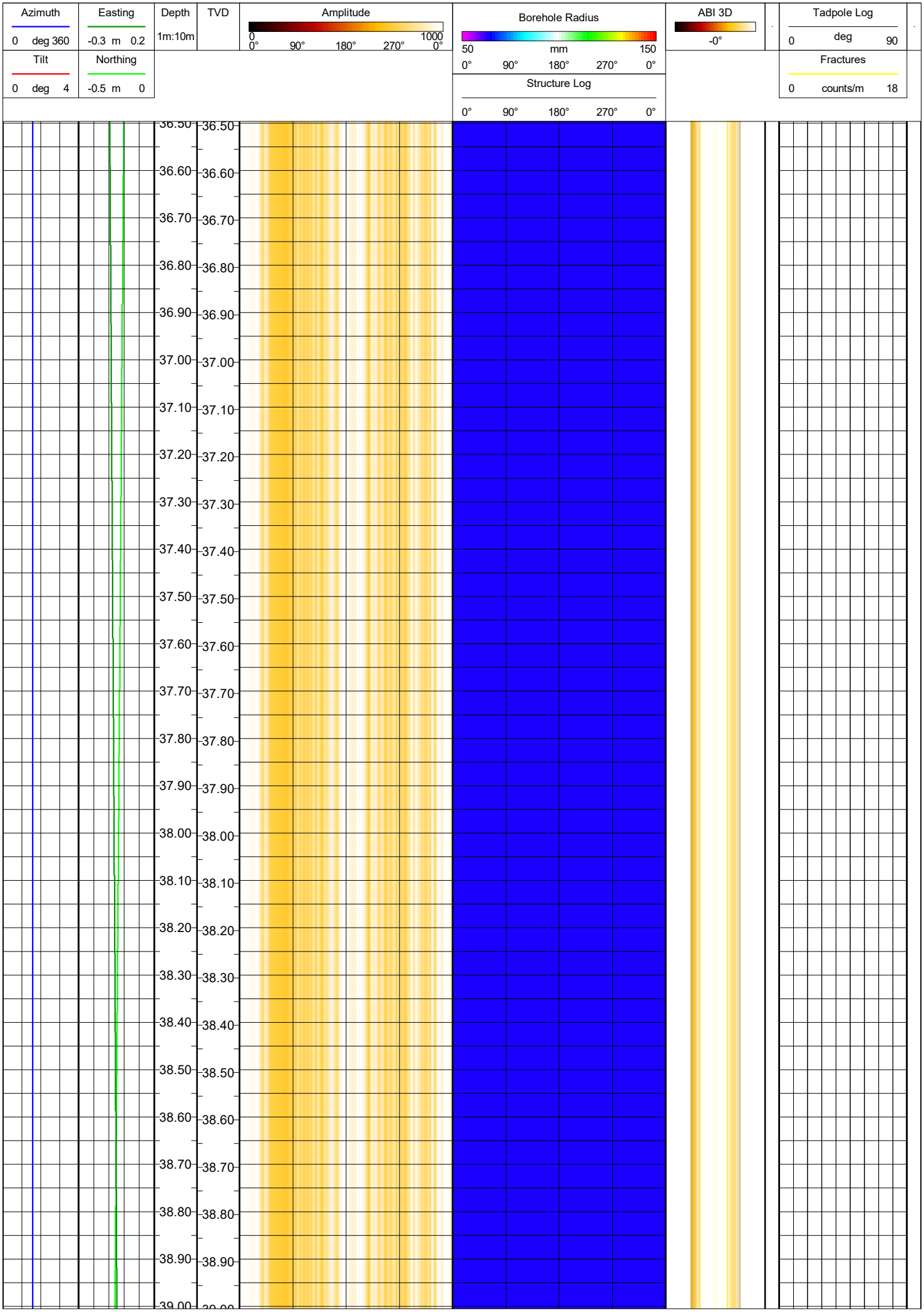

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
36.50
36.60
36.70
36.80
36.90
37.00
37.10
37.20
37.30
37.40
37.50
37.60
37.70
37.80
37.90
38.00
38.10
38.20
38.30
38.40
38.50
38.60
38.70
38.80
38.90
39.00

Plate 3.197

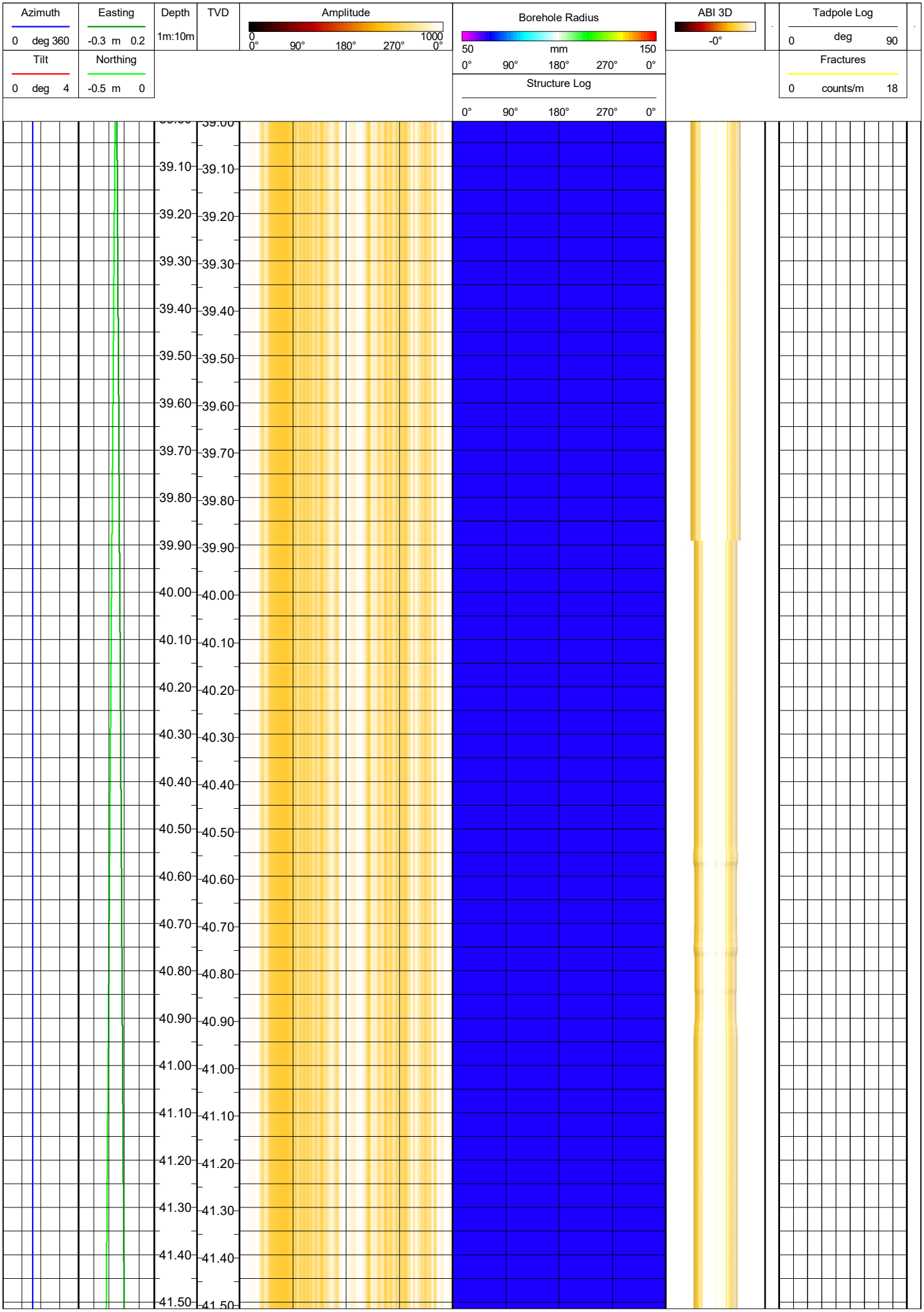

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Fractures
0 counts/m 18
39.10
39.20
39.30
39.40
39.50
39.60
39.70
39.80
39.90
40.00
40.10
40.20
40.30
40.40
40.50
40.60
40.70
40.80
40.90
41.00
41.10
41.20
41.30
41.40
41.50

Plate 3.198

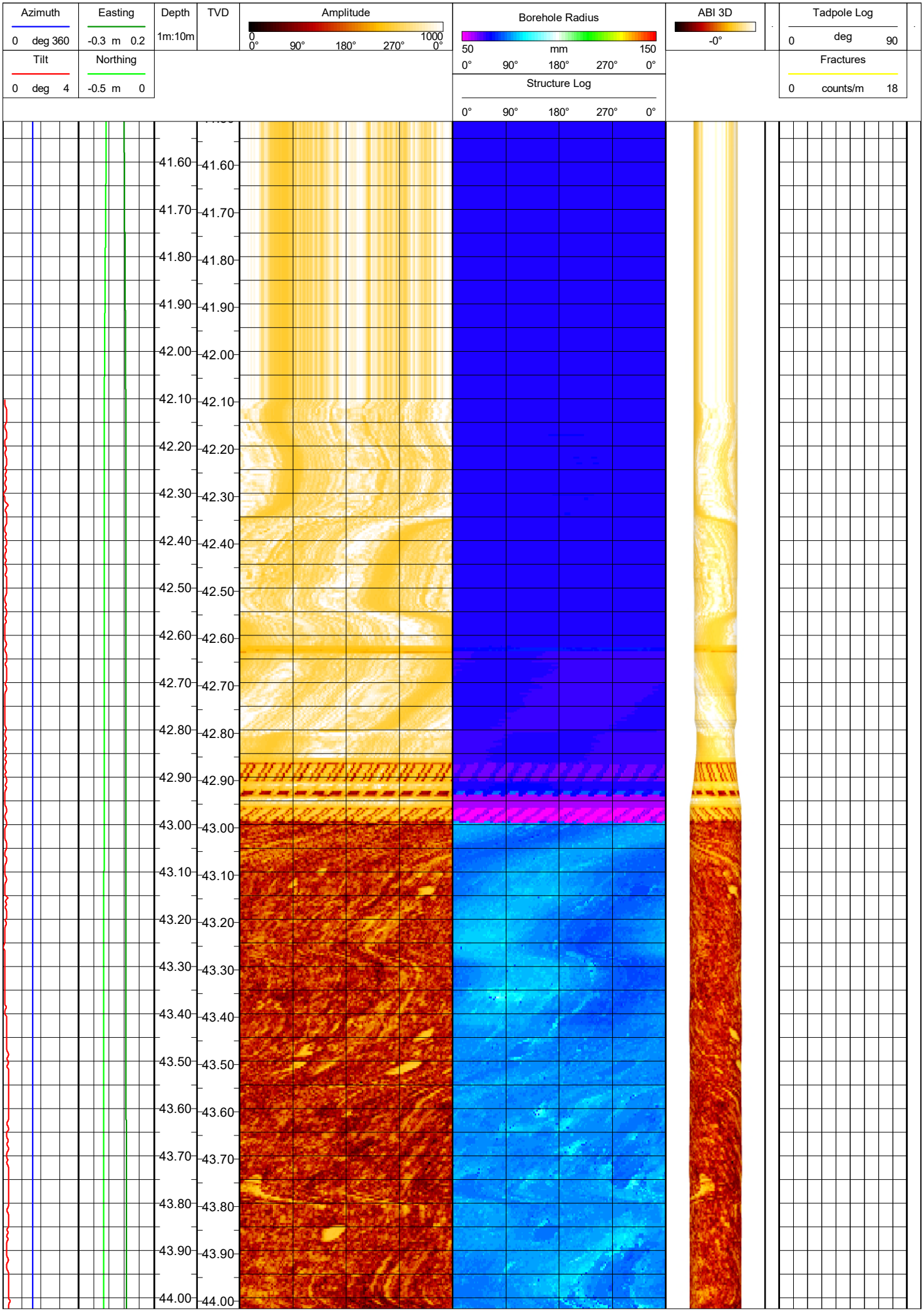

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
41.60
41.70
41.80
41.90
42.00
42.10
42.20
42.30
42.40
42.50
42.60
42.70
42.80
42.90
43.00
43.10
43.20
43.30
43.40
43.50
43.60
43.70
43.80
43.90
44.00

Plate 3.199

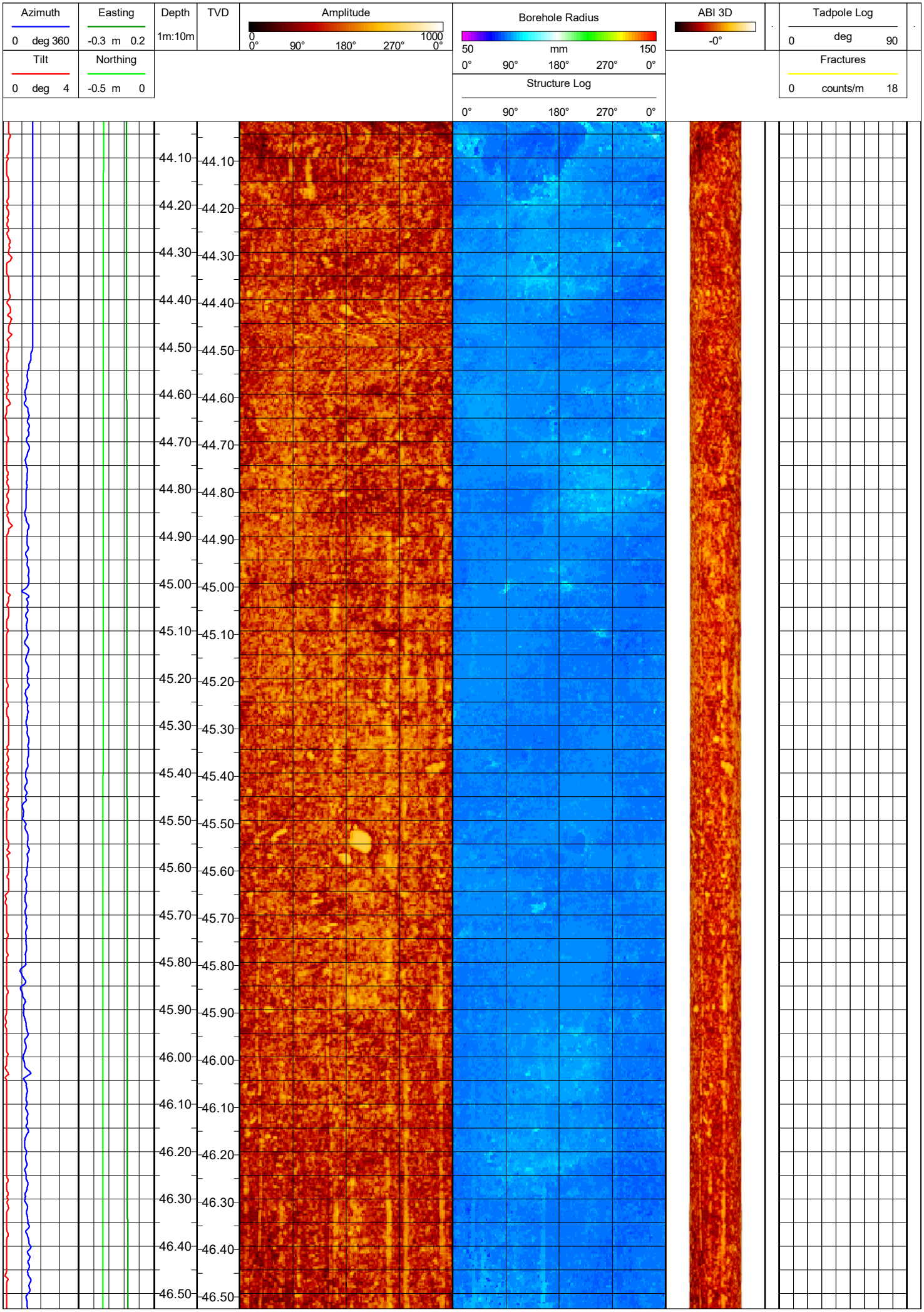

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
44.10
44.20
44.30
44.40
44.50
44.60
44.70
44.80
44.90
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
45.80
45.90
46.00
46.10
46.20
46.30
46.40
46.50

Plate 3.200

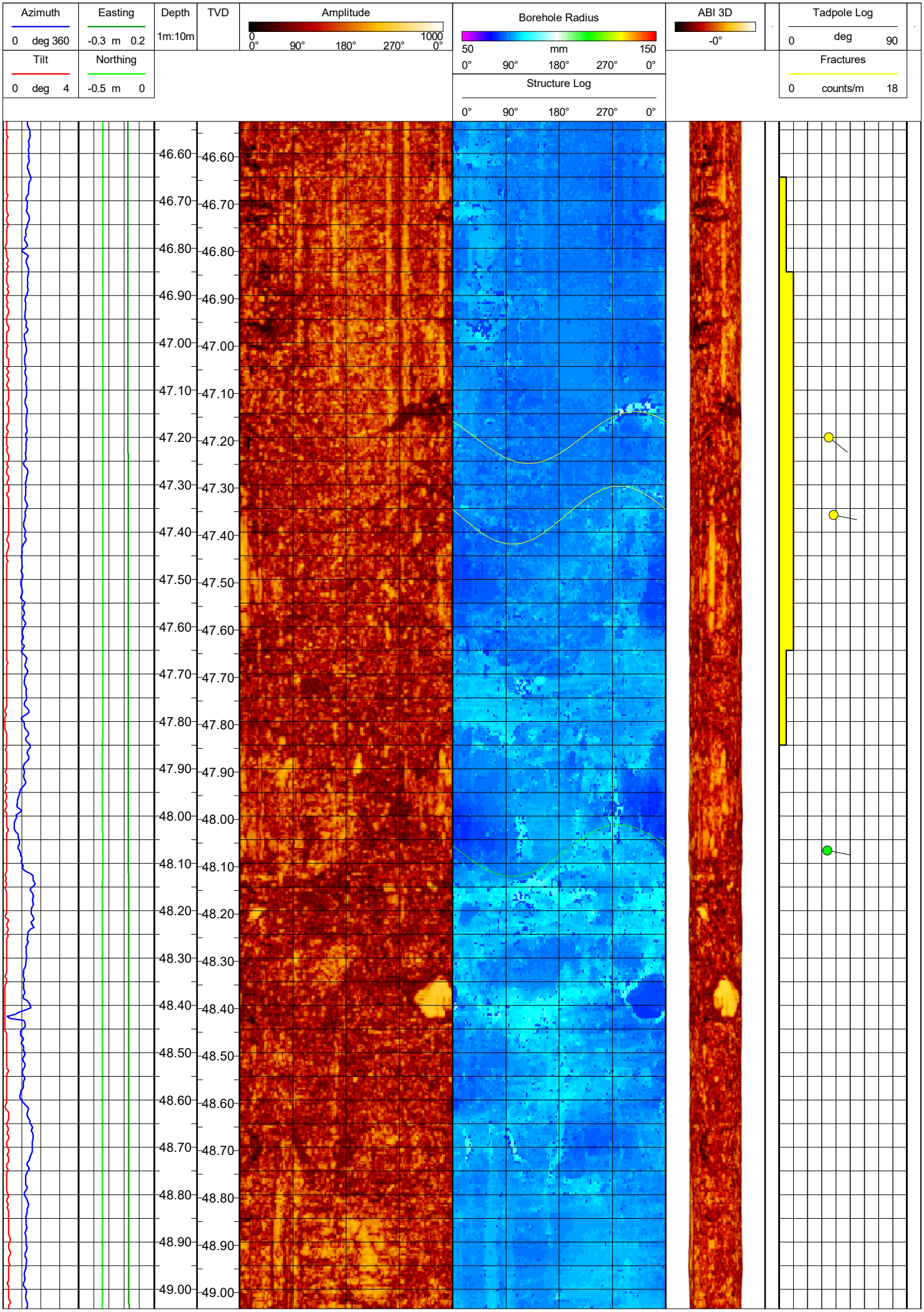

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
46.60
46.70
46.80
46.90
47.00
47.10
47.20
47.30
47.40
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00

Plate 3.201

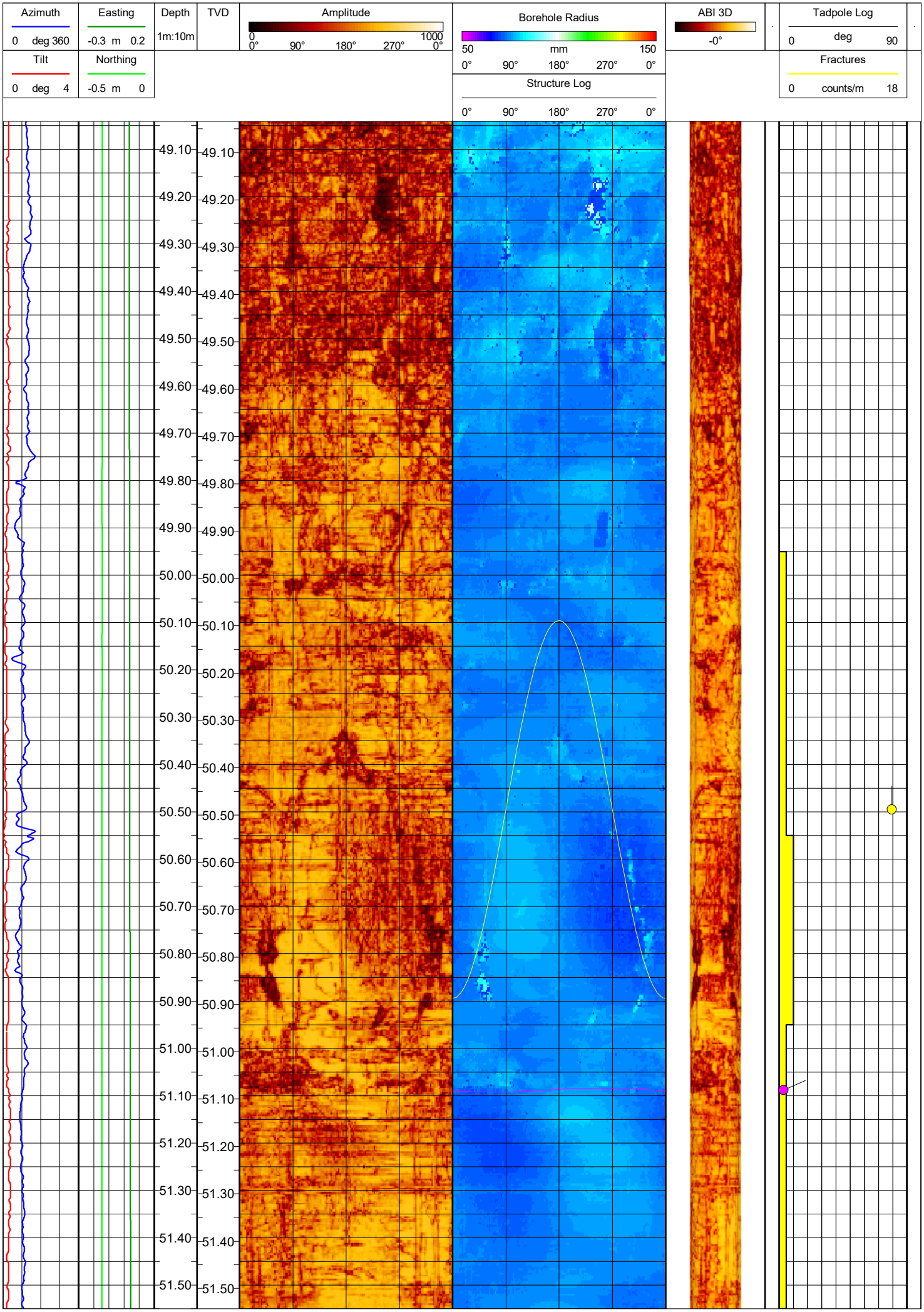

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
49.10
49.20
49.30
49.40
49.50
49.60
49.70
49.80
49.90
50.00
50.10
50.20
50.30
50.40
50.50
50.60
50.70
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50

Plate 3.202

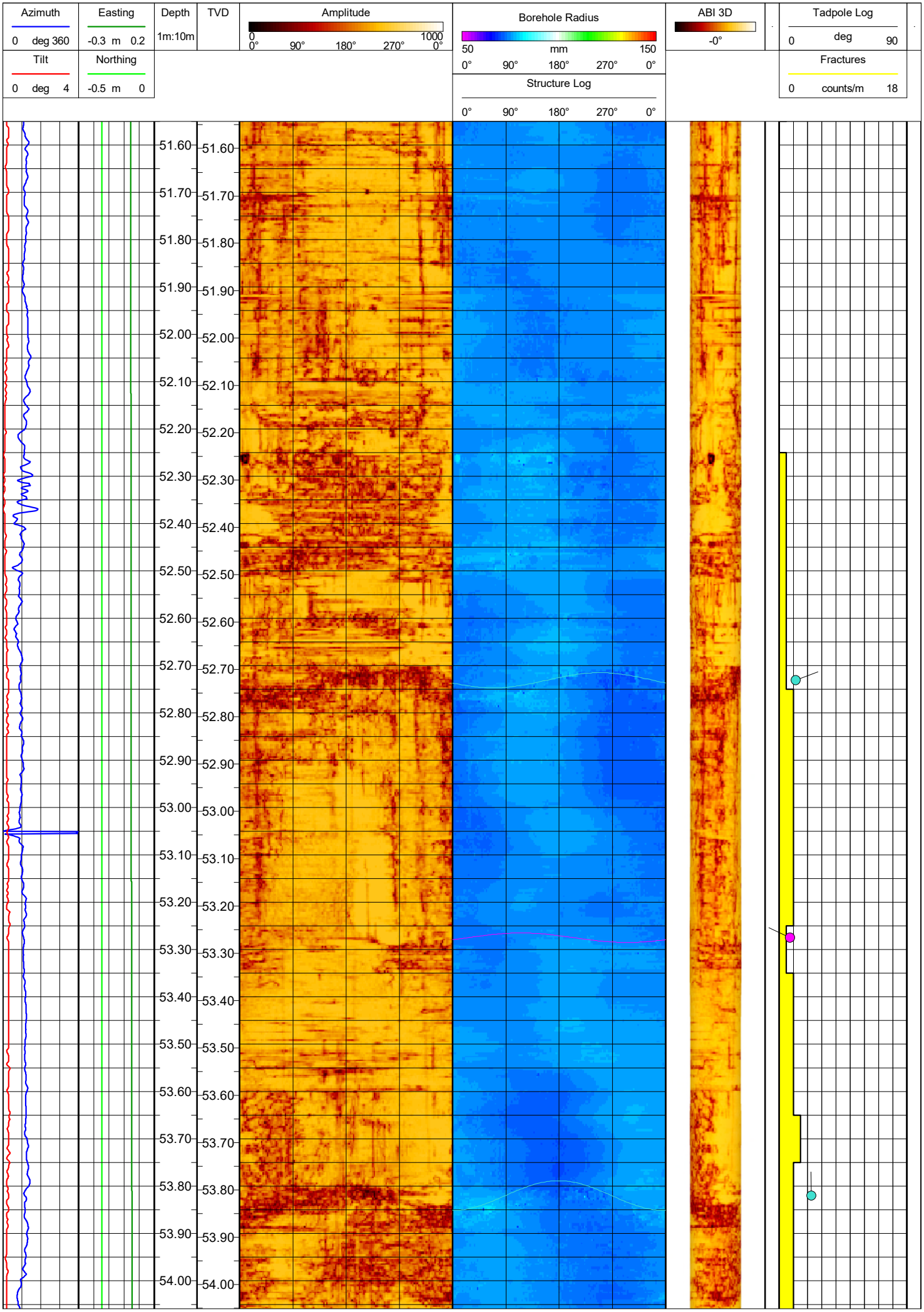

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
51.60
51.70
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50
52.60
52.70
52.80
52.90
53.00
53.10
53.20
53.30
53.40
53.50
53.60
53.70
53.80
53.90
54.00

Plate 3.203

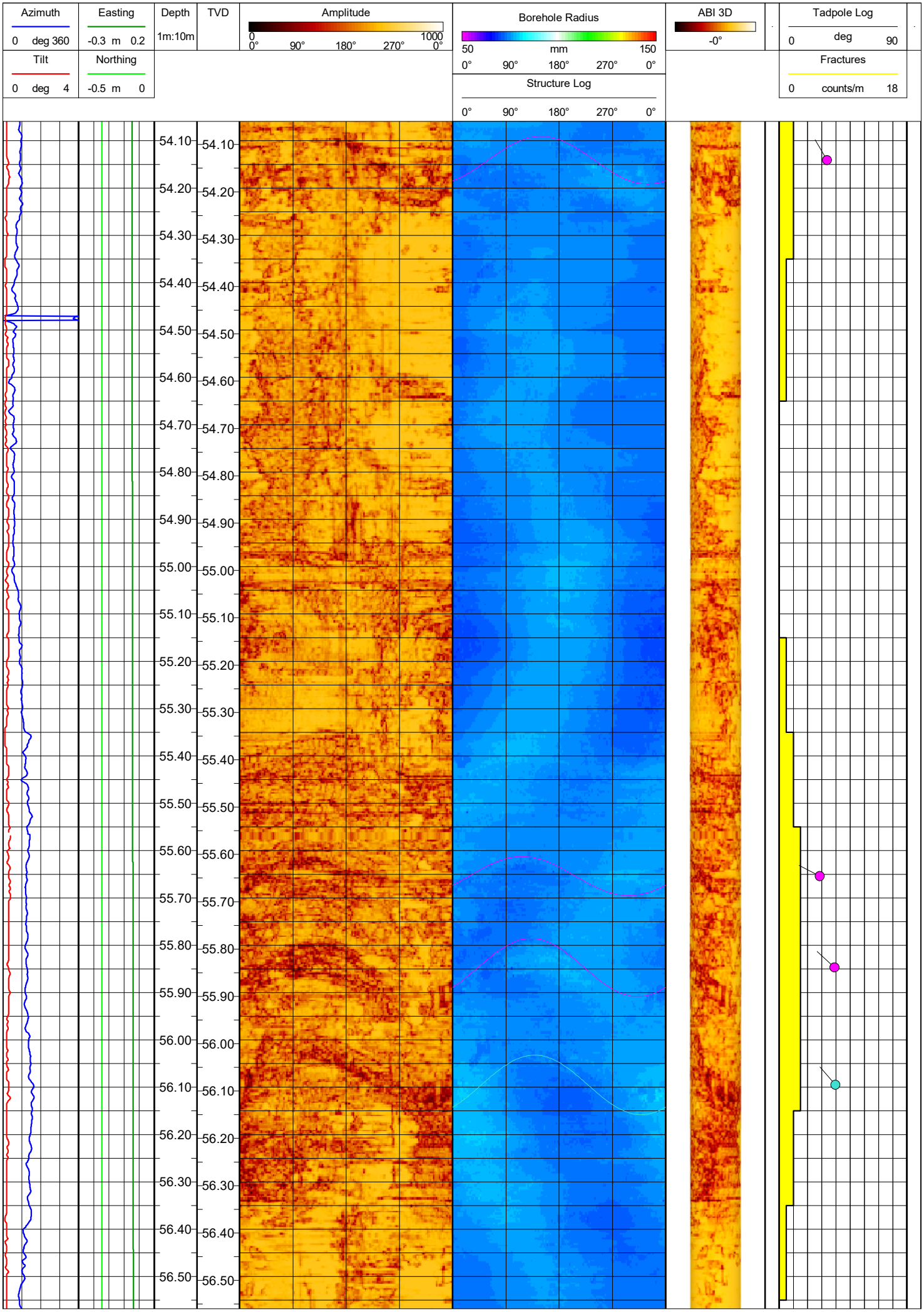

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
54.10
54.20
54.30
54.40
54.50
54.60
54.70
54.80
54.90
55.00
55.10
55.20
55.30
55.40
55.50
55.60
55.70
55.80
55.90
56.00
56.10
56.20
56.30
56.40
56.50

Plate 3.204

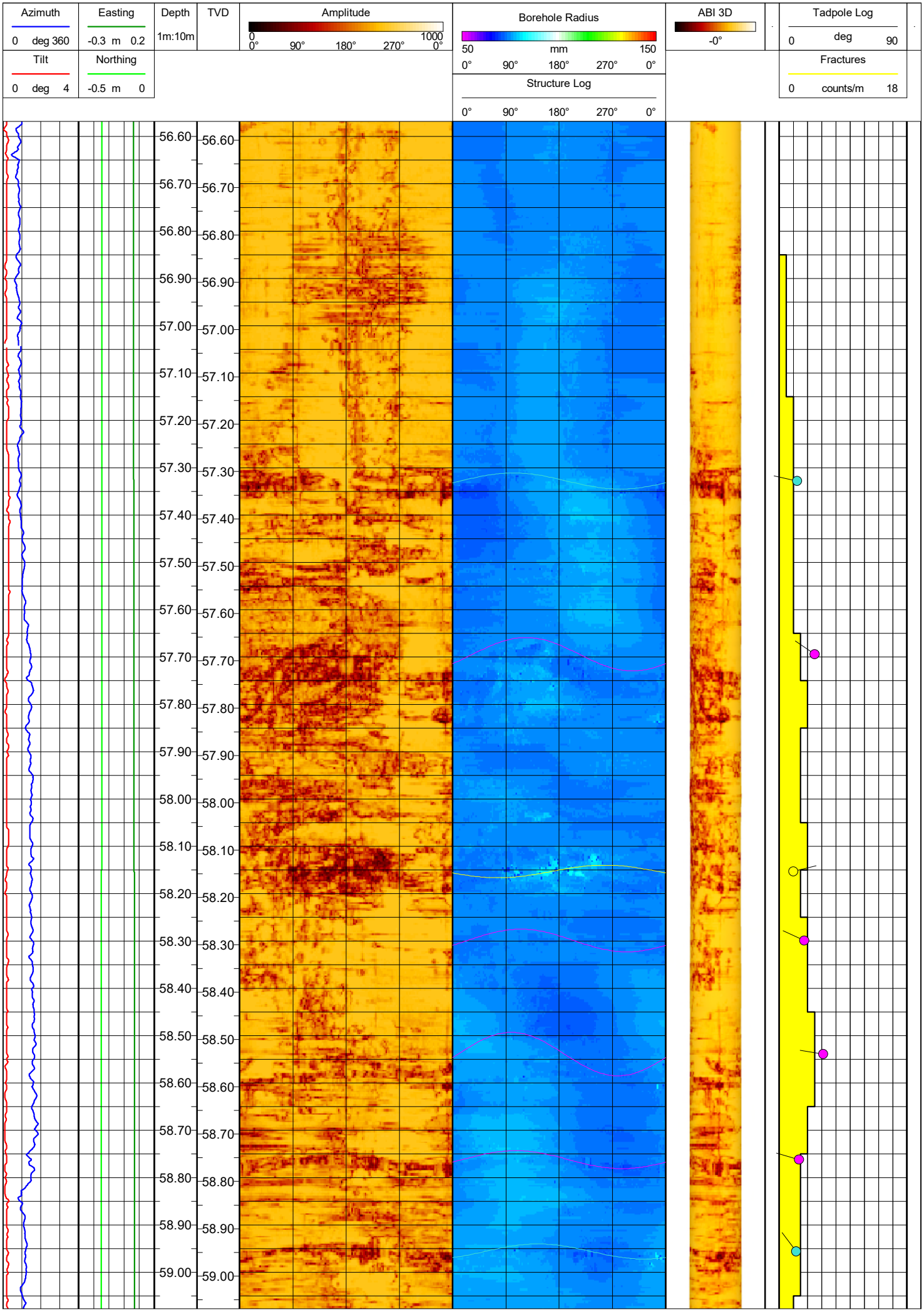

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
56.60
56.70
56.80
56.90
57.00
57.10
57.20
57.30
57.40
57.50
57.60
57.70
57.80
57.90
58.00
58.10
58.20
58.30
58.40
58.50
58.60
58.70
58.80
58.90
59.00

Plate 3.205

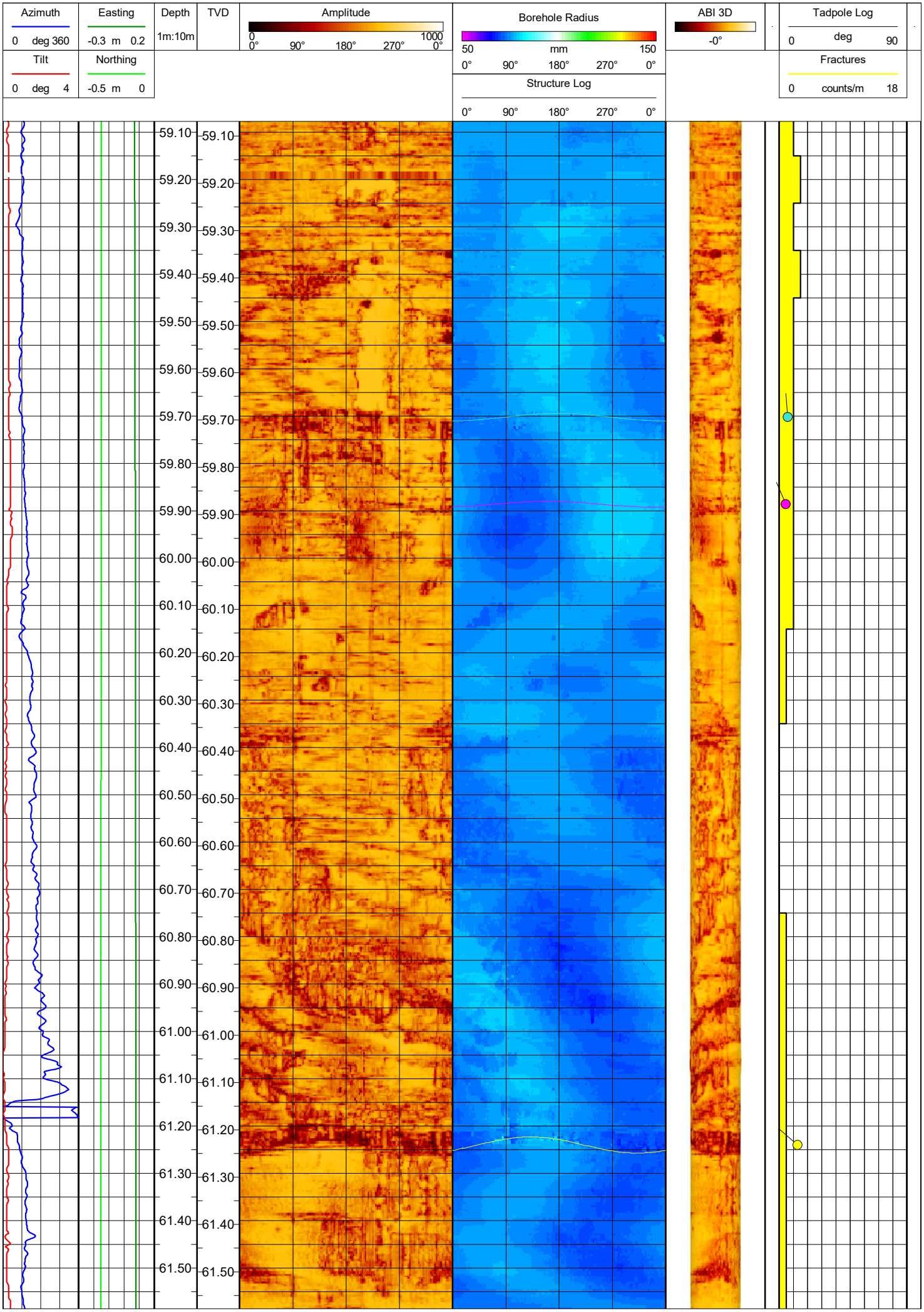

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-0.3 m 0.2
Northing
-0.5 m 0
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
59.10
59.20
59.30
59.40
59.50
59.60
59.70
59.80
59.90
60.00
60.10
60.20
60.30
60.40
60.50
60.60
60.70
60.80
60.90
61.00
61.10
61.20
61.30
61.40
61.50

Plate 3.206

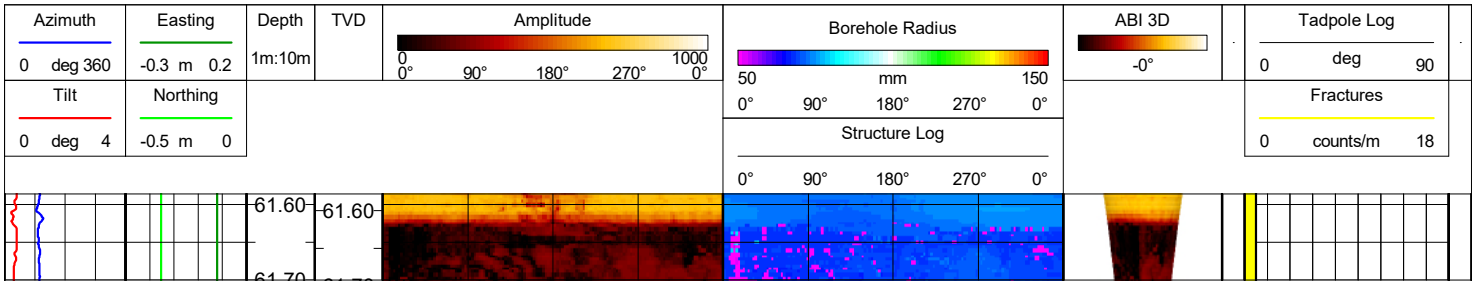
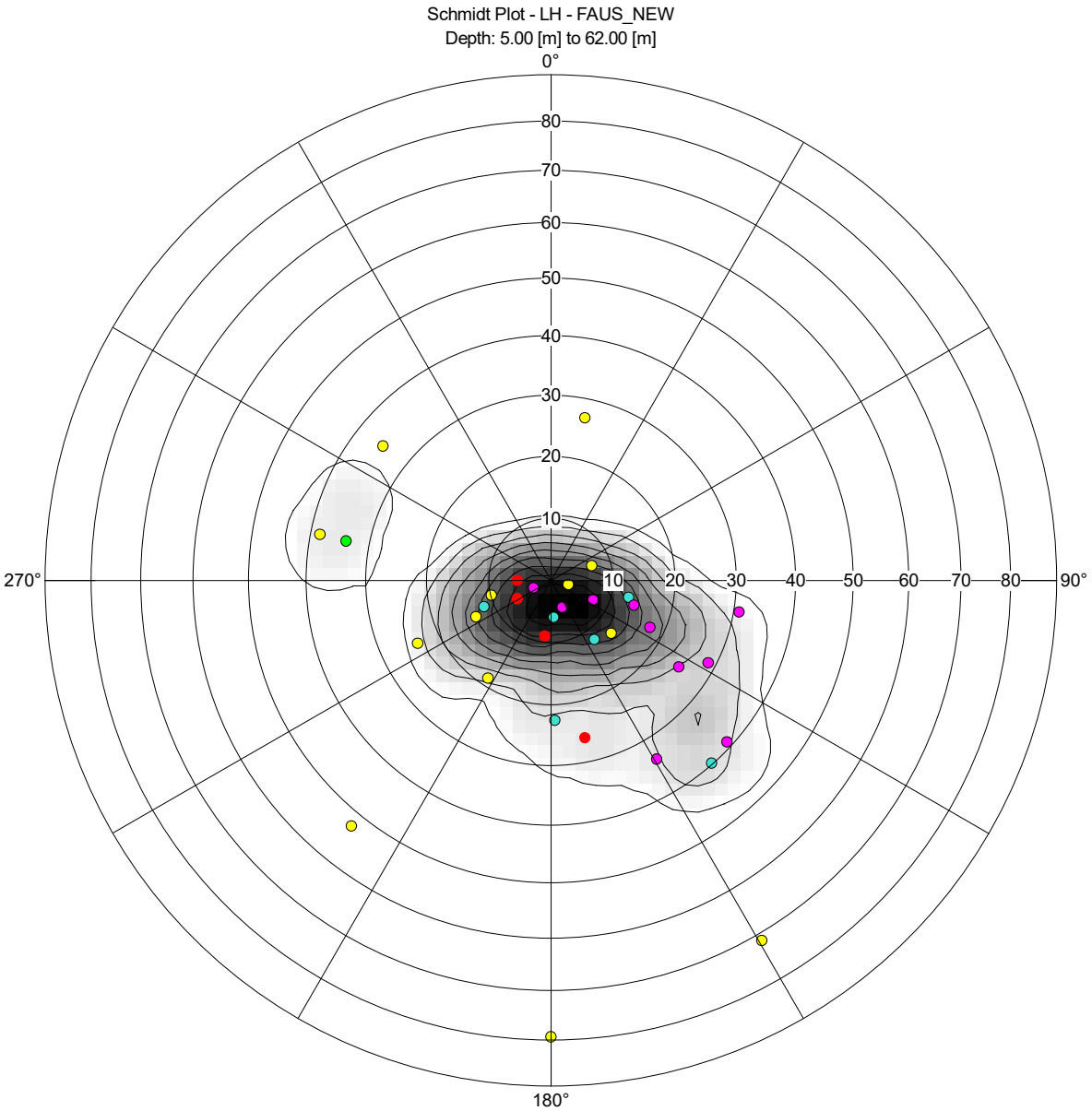

Azimuth
0 deg 360
Easting
-0.3 m 0.2
Depth
1m:10m
TVD
Amplitude
0 1000
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-0.5 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
61.60
61.60

Plate 3.207

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH10**
Log Title:	**Polar Plot**

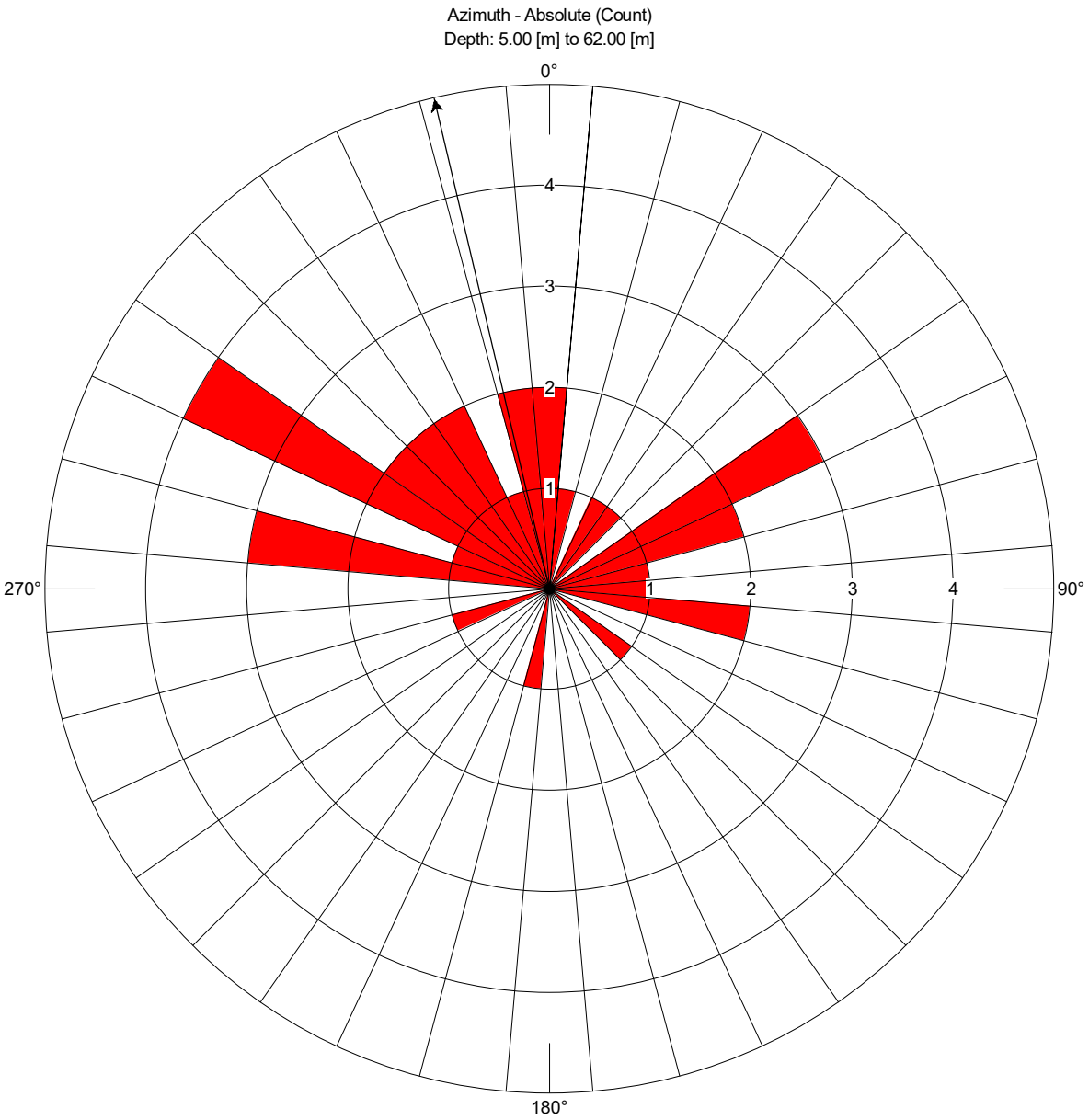
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	34	9.38	346.75
○	13	11.36	61.38
●	4	9.31	10.55
●	1	33.93	100.90
●	10	19.24	304.09
●	6	13.56	335.15

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH10**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	34.00
Mean (3D):	346.75
Min:	6.39
Max:	359.96

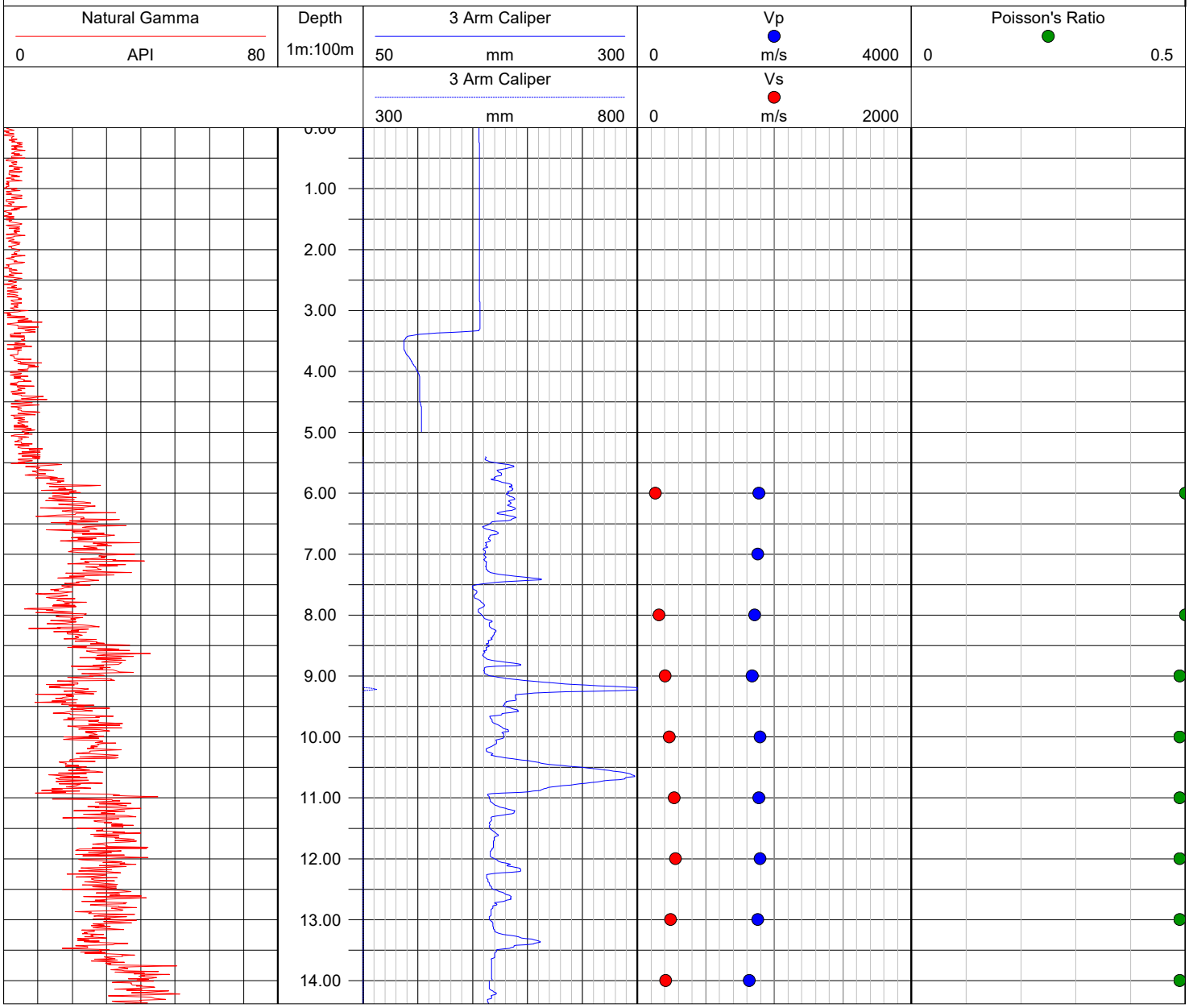
FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**	
	Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date:
	Borehole: BH10	Fugro Site Manager: James Hills	02/07/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 301945.77, N: 5852228.48	Grid Reference: UTM Zone 30N	Elevation: -32.50 m LAT
Borehole Depth (Drilling): 62.50 m		Recorded By: H. Spence & M. Magrosky	Processed By: H. Spence
Borehole Depth (Wireline): 62.00 m		Remarks:	
Logging Datum: Mud Level		Borehole was logged in four sections, hole collapsed at 35.00 m before, 30.00 m after the CAL3 run in Section 2. Hole collapsed at 17.00 m for Section 3. PS logger could not be run in the fourth section due to the borehole collapsing at 6.00 m when pulling back the casing.	
Logged Interval: 0.00 m - 62.00 m			
Fluid Level: 0.00 m			

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	14.60 m
146 mm	14.60 m	62.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 50.14 m	2.20 m
Steel (Section 1-2)	175 mm	- 50.14 m	14.60 m
Steel (Section 4)	146 mm	- 50.14 m	3.30 m
Steel (Section 3)	146 mm	- 50.14 m	5.50 m
Steel (Section 2)	146 mm	- 50.14 m	12.90 m
Steel (Section 1)	146 mm	- 50.14 m	42.90 m



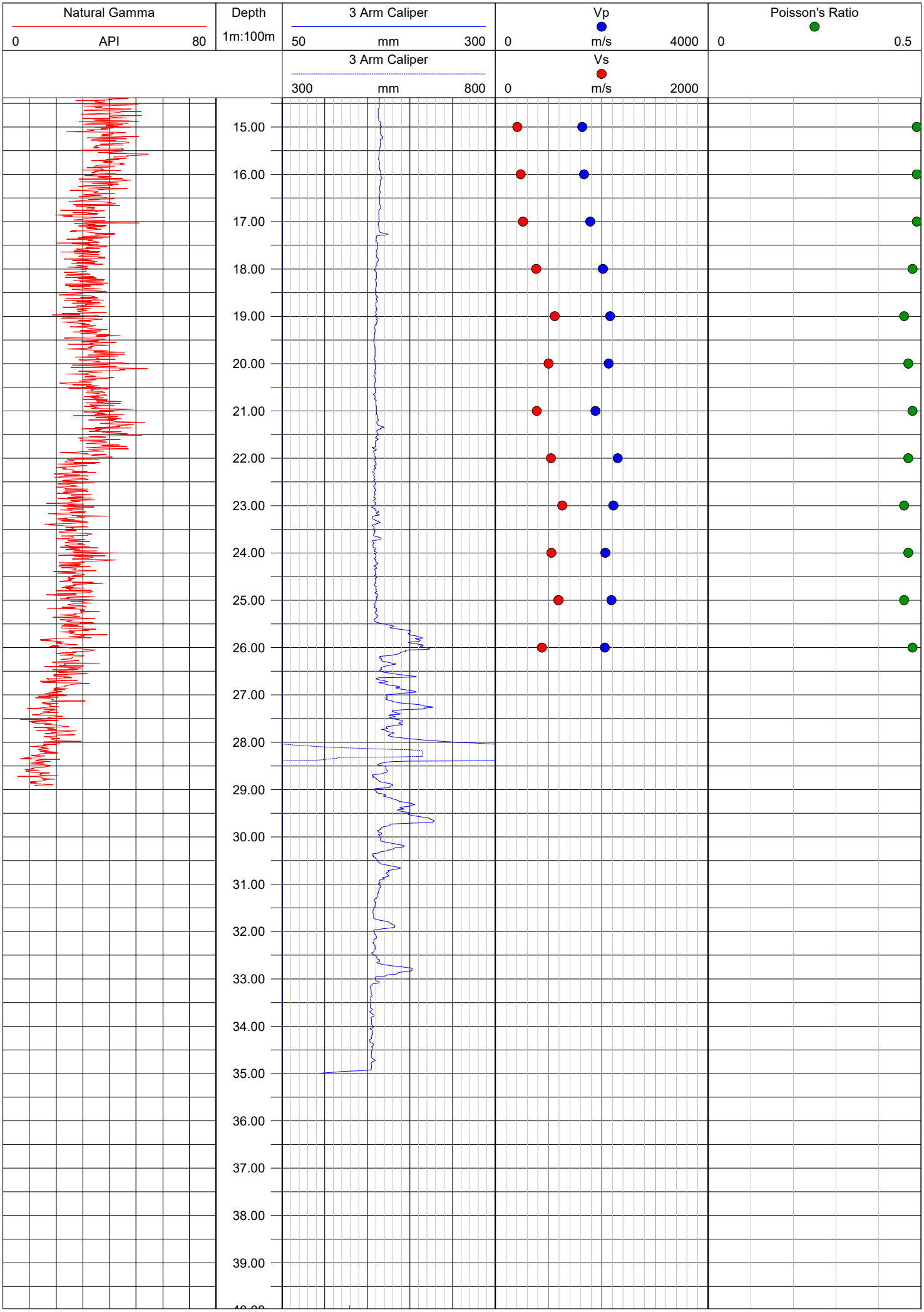

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
3 Arm Caliper
300
mm
800
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.211

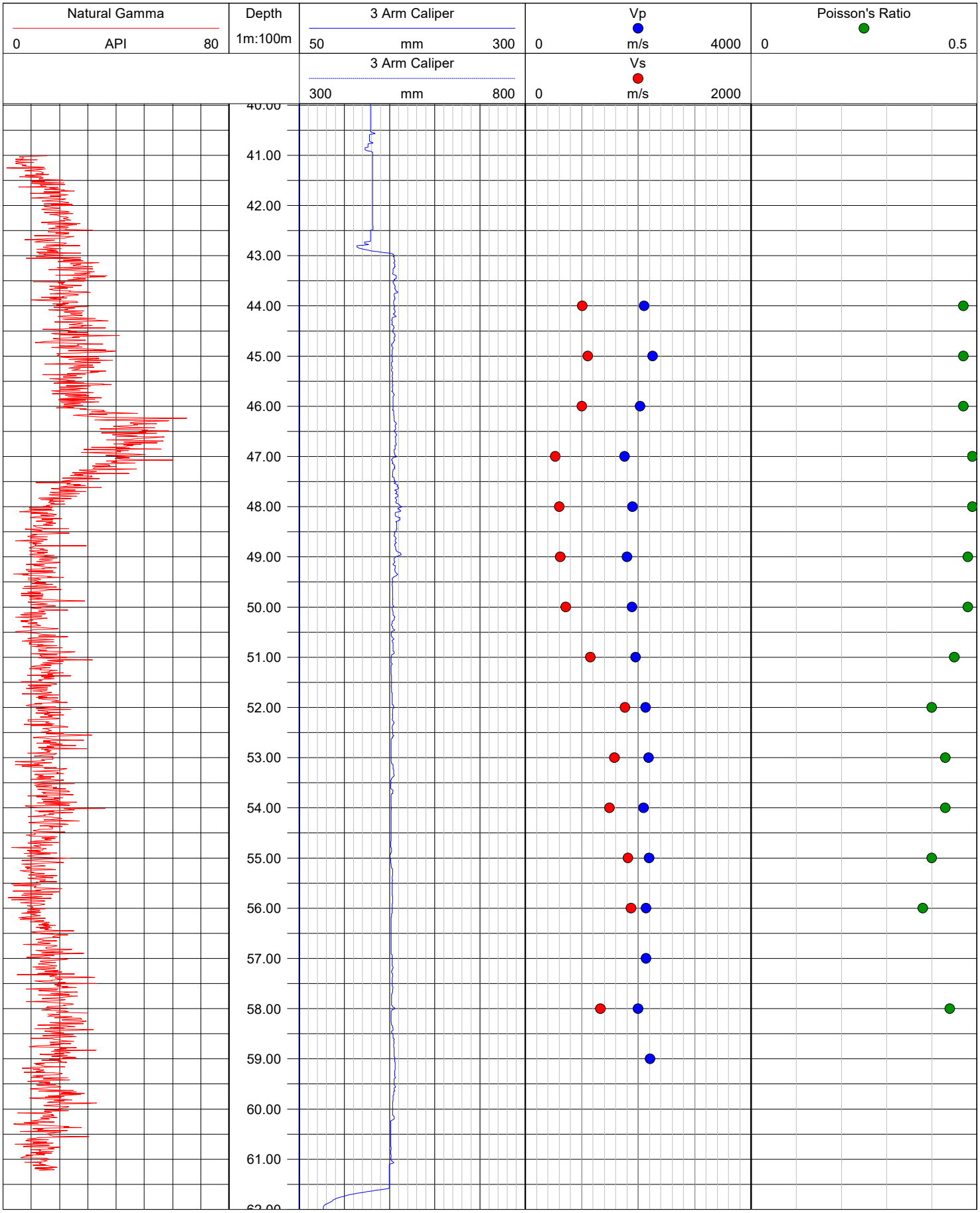

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
3 Arm Caliper
300
mm
800
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00
53.00
54.00
55.00
56.00
57.00
58.00
59.00
60.00
61.00

Plate 3.212

FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Acoustic Borehole Imager Plot**	
	Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
	Borehole: BH12	Fugro Site Manager: James Hills	23/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 299352.92, N: 5847931.47	Grid Reference: UTM Zone 30N	Elevation: -20.40 m LAT

Borehole Depth (Drilling):	55.00 m
Borehole Depth (Wireline):	52.20 m
Logging Datum:	Mud Level
Logged Interval:	35.62 m - 52.20 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: M. Magrosky — Processed By: M. Magrosky

Remarks:

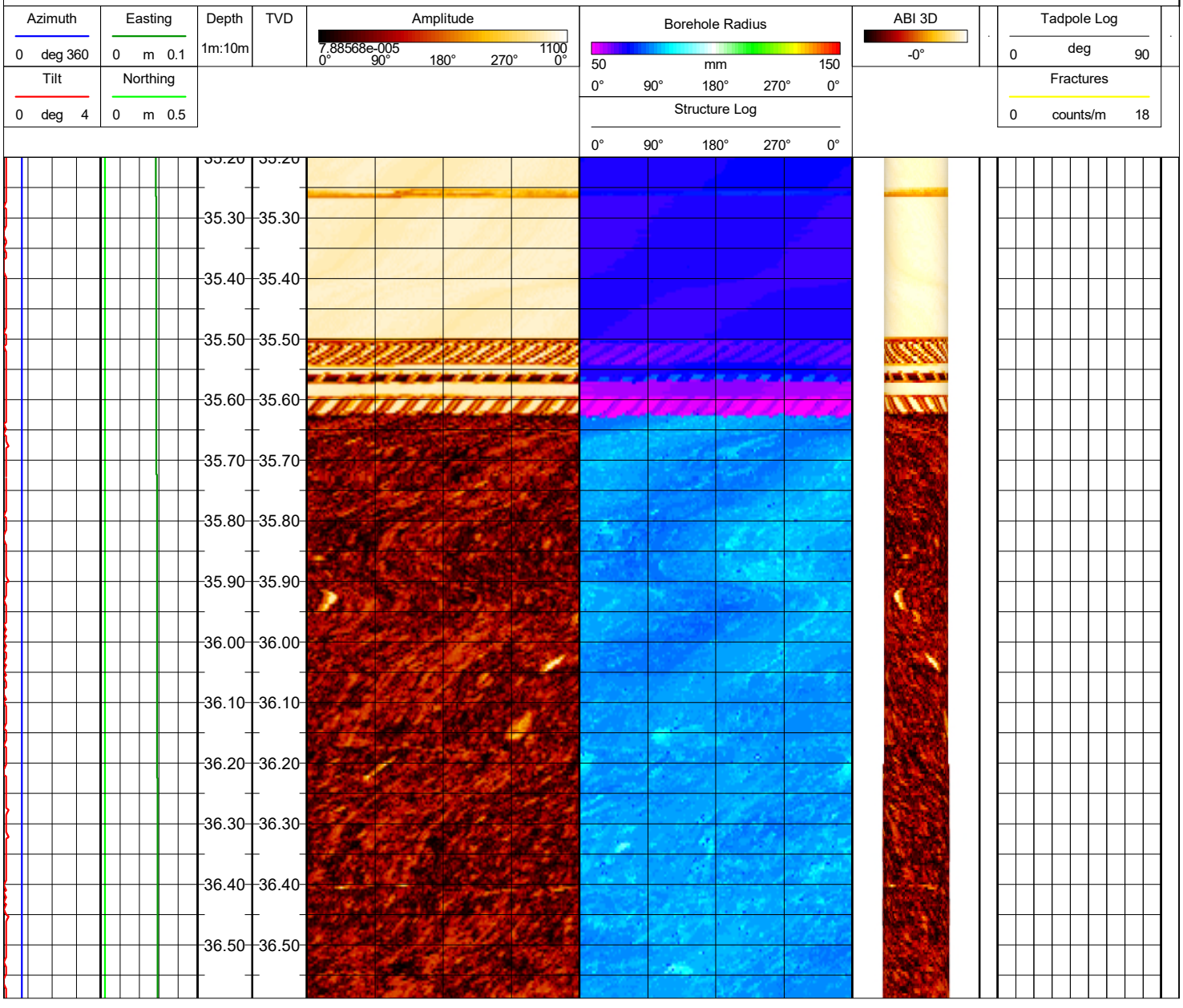
Borehole logged in one section as moving barge with high tide was prioritised.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	3.30 m
146 mm	3.30 m	55.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 36.50 m	2.10 m
Steel	175 mm	- 36.50 m	3.30 m
Steel	146 mm	- 36.50 m	35.60 m



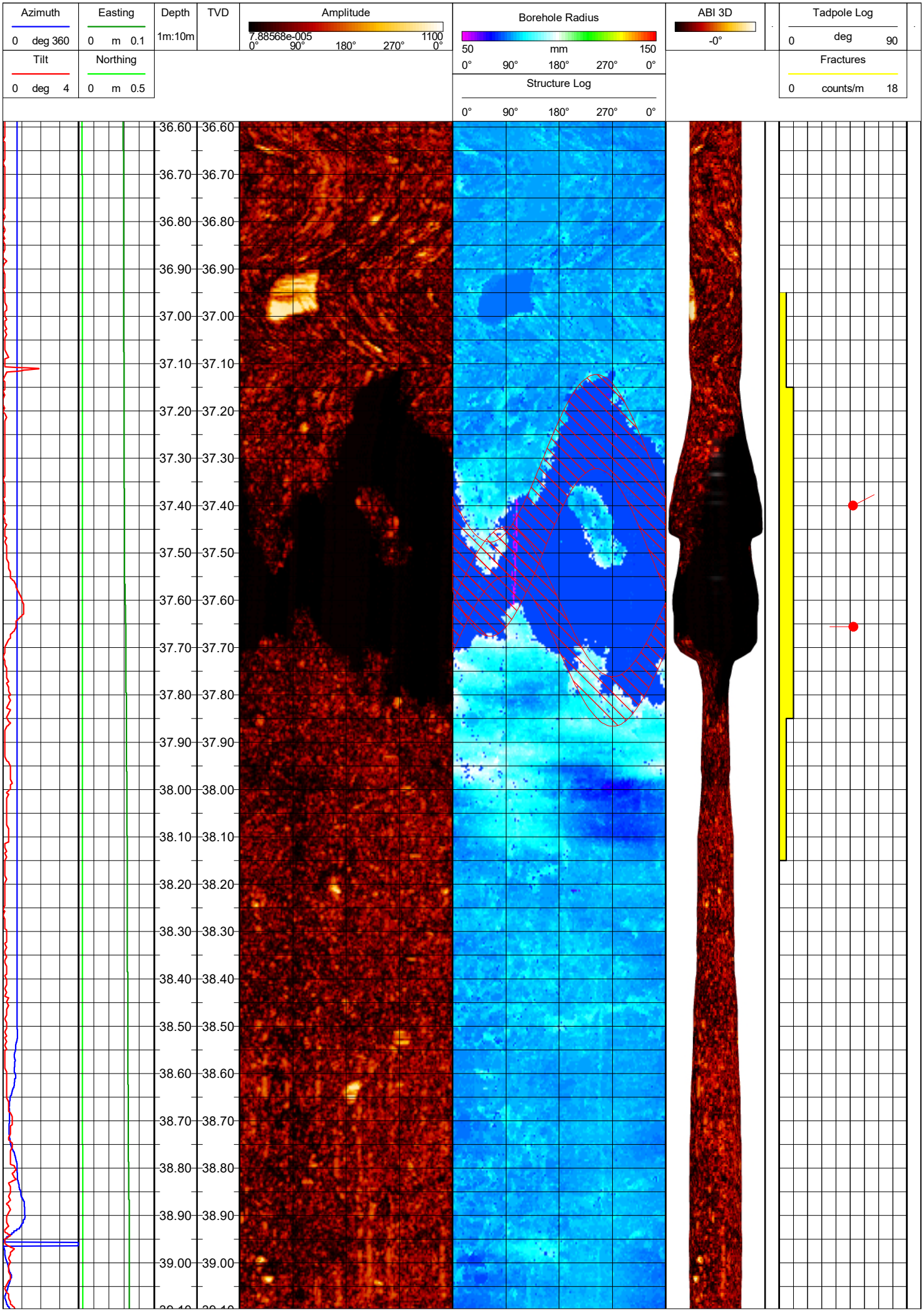

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.1
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
36.60
36.70
36.80
36.90
37.00
37.10
37.20
37.30
37.40
37.50
37.60
37.70
37.80
37.90
38.00
38.10
38.20
38.30
38.40
38.50
38.60
38.70
38.80
38.90
39.00

Plate 3.214

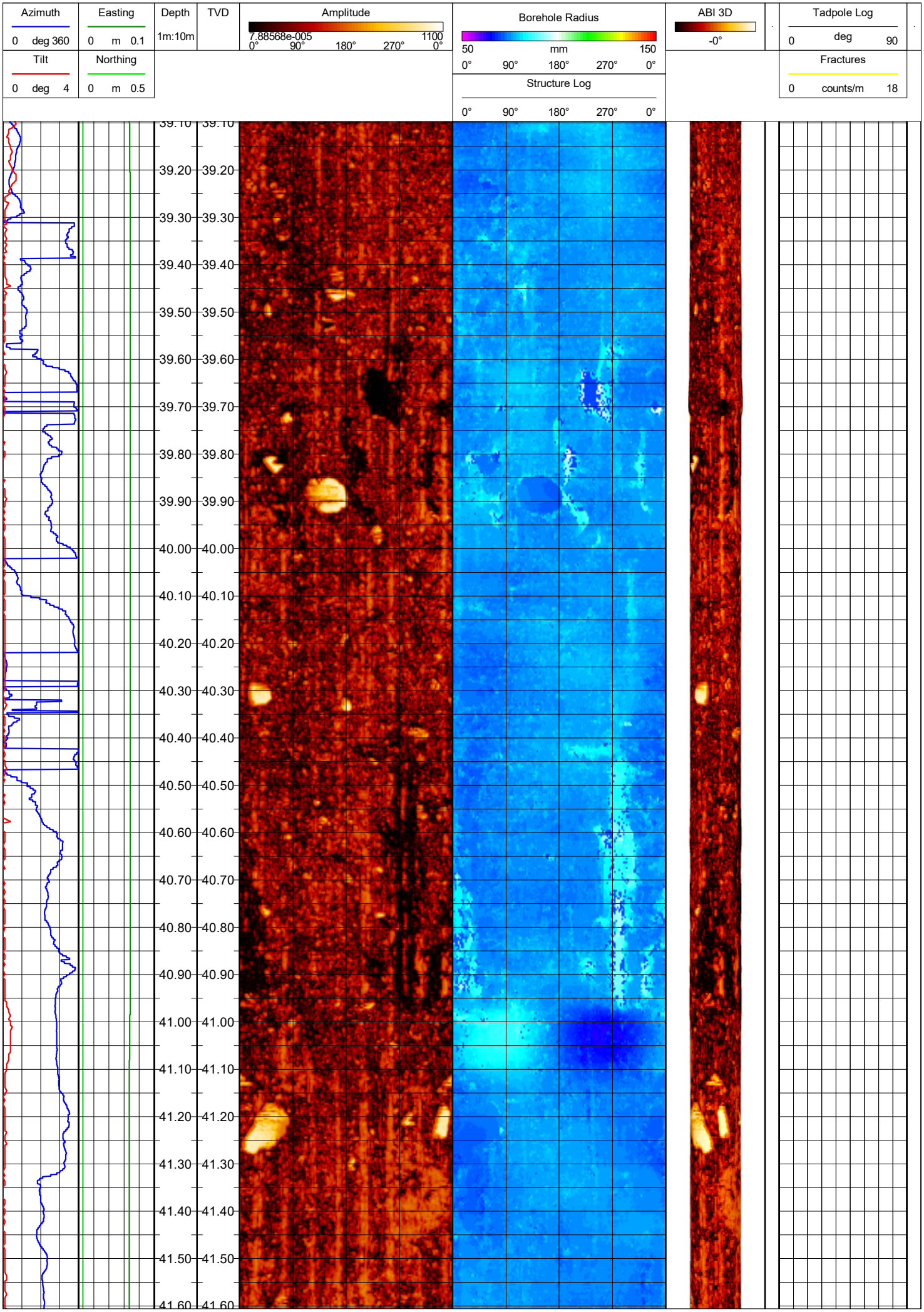

Azimuth
0 deg 360
Easting
0 m 0.1
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
39.10
39.20
39.30
39.40
39.50
39.60
39.70
39.80
39.90
40.00
40.10
40.20
40.30
40.40
40.50
40.60
40.70
40.80
40.90
41.00
41.10
41.20
41.30
41.40
41.50
41.60

Plate 3.215

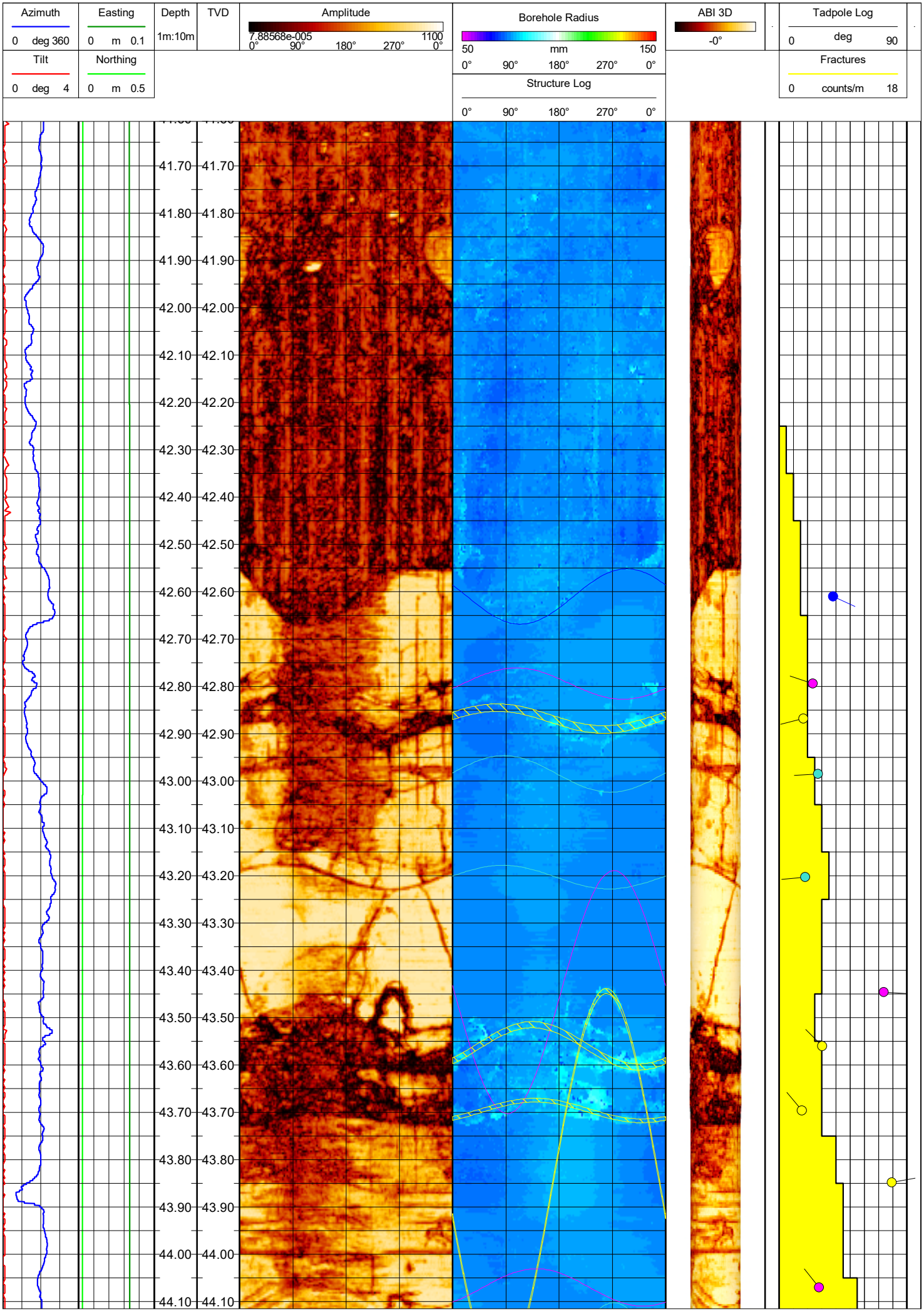

Azimuth
0 deg 360
Easting
0 m 0.1
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
41.70
41.80
41.90
42.00
42.10
42.20
42.30
42.40
42.50
42.60
42.70
42.80
42.90
43.00
43.10
43.20
43.30
43.40
43.50
43.60
43.70
43.80
43.90
44.00
44.10

Plate 3.216

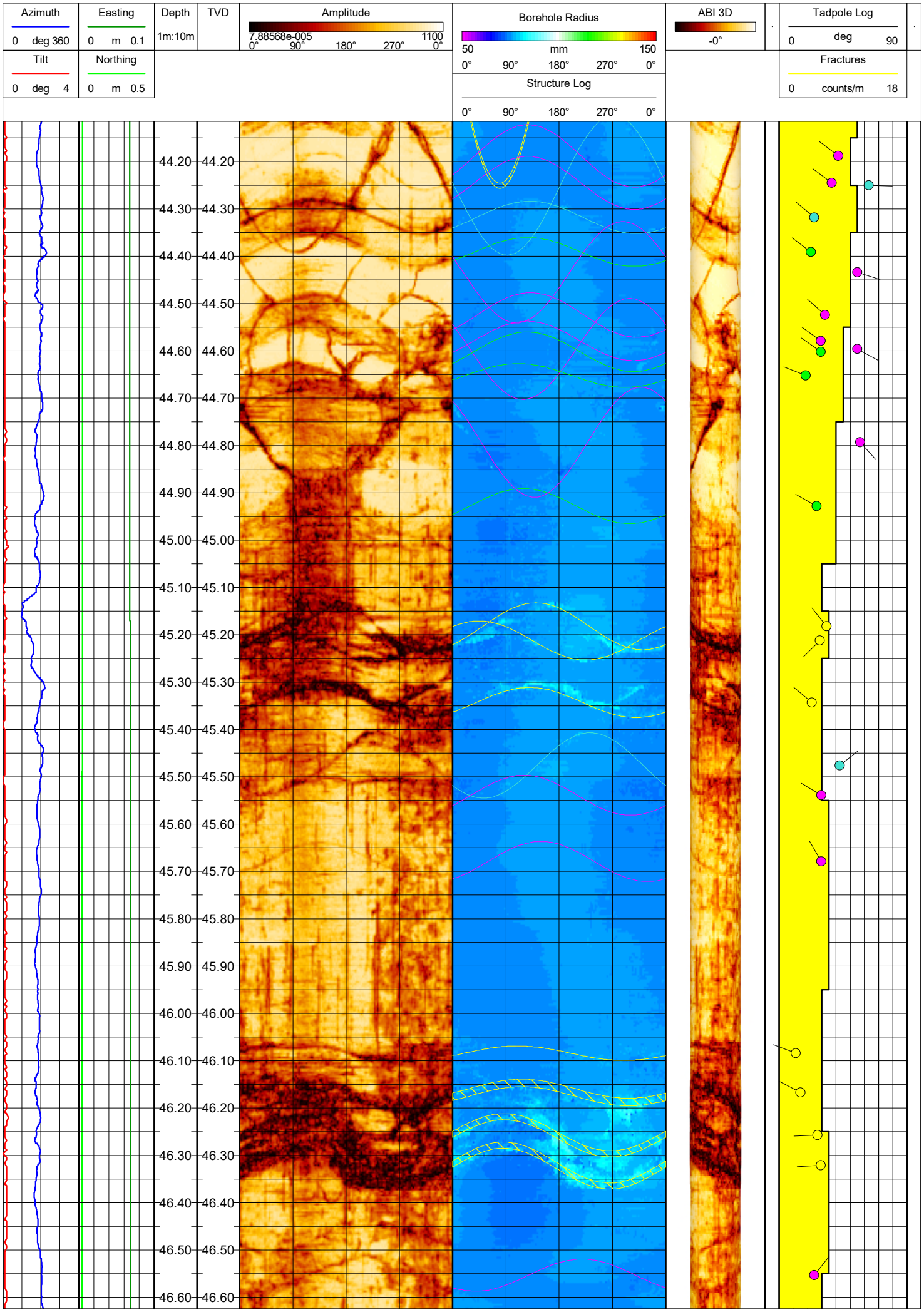

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.1
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
44.20 44.20
44.30 44.30
44.40 44.40
44.50 44.50
44.60 44.60
44.70 44.70
44.80 44.80
44.90 44.90
45.00 45.00
45.10 45.10
45.20 45.20
45.30 45.30
45.40 45.40
45.50 45.50
45.60 45.60
45.70 45.70
45.80 45.80
45.90 45.90
46.00 46.00
46.10 46.10
46.20 46.20
46.30 46.30
46.40 46.40
46.50 46.50
46.60 46.60

Plate 3.217

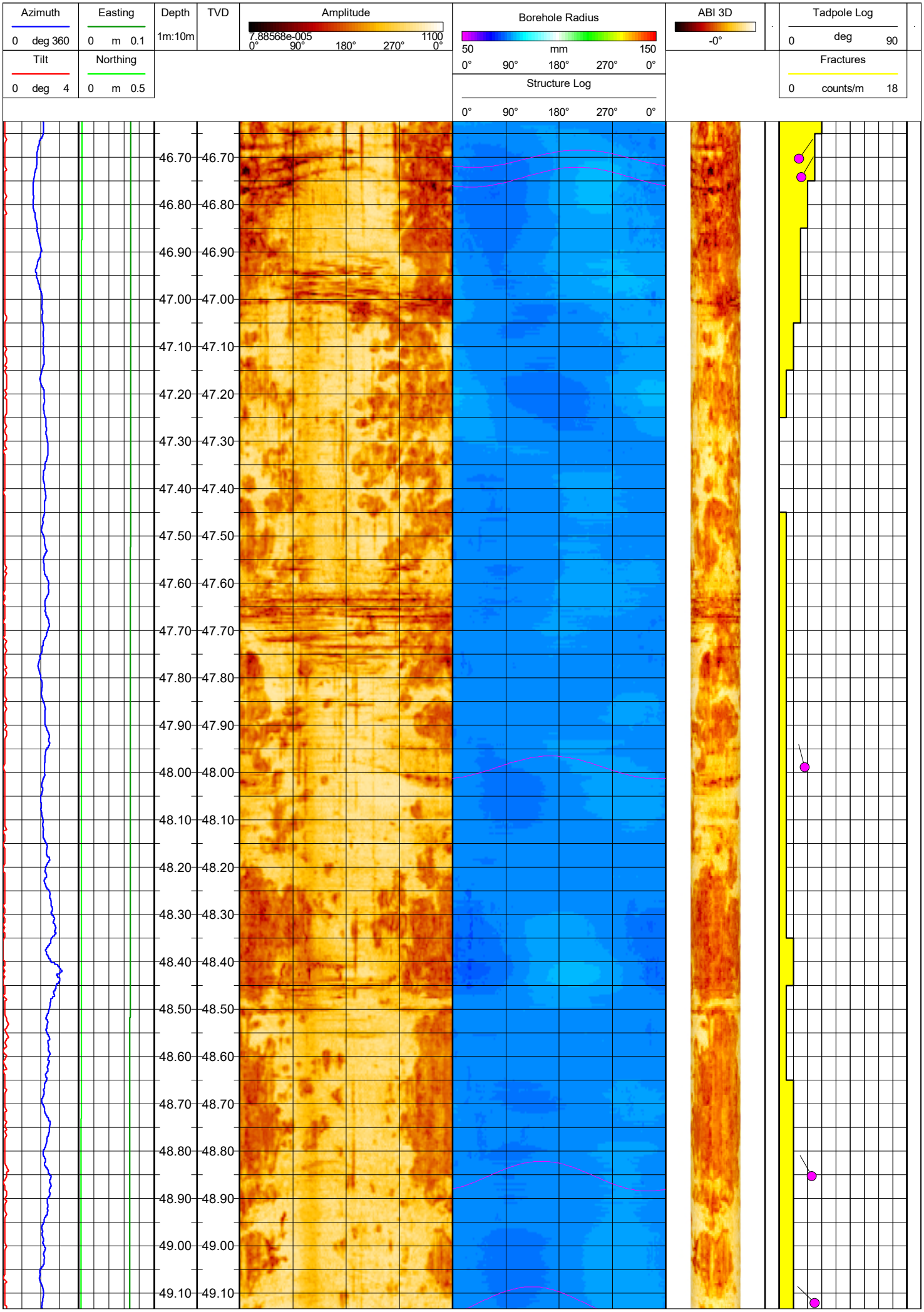

Azimuth
0 deg 360
Easting
0 m 0.1
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
46.70
46.80
46.90
47.00
47.10
47.20
47.30
47.40
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00
49.10

Plate 3.218

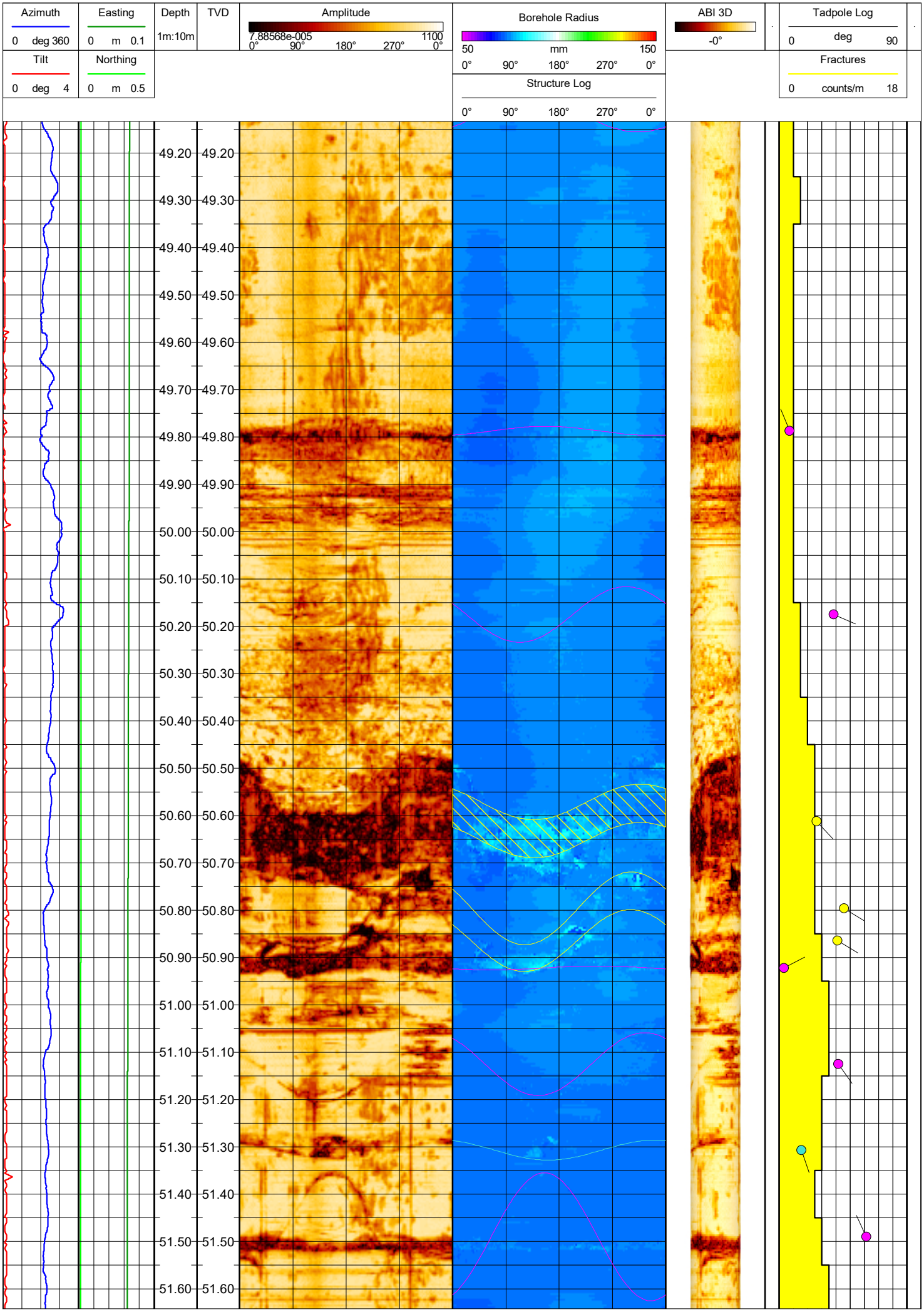

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.1
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
49.20
49.30
49.40
49.50
49.60
49.70
49.80
49.90
50.00
50.10
50.20
50.30
50.40
50.50
50.60
50.70
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60

Plate 3.219

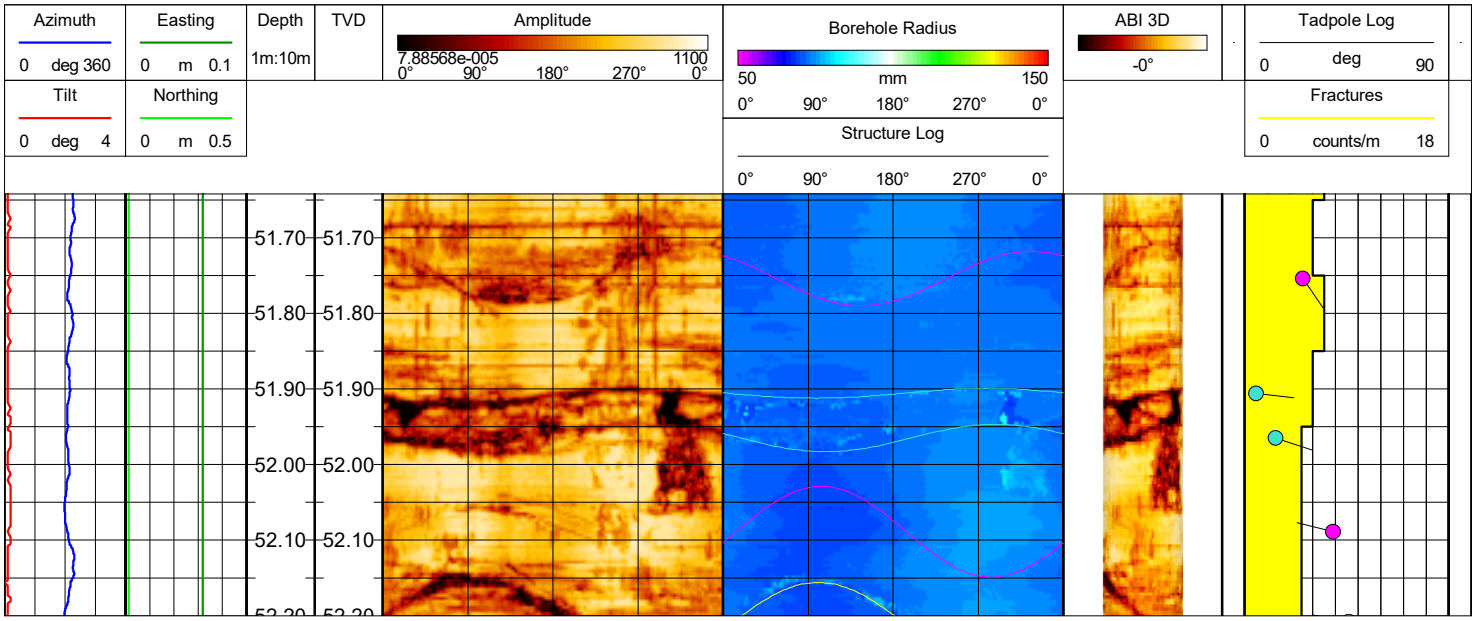

Azimuth
0 deg 360
Easting
0 m 0.1
Depth
1m:10m
TVD
Amplitude
7.88568e-005
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Fractures
0 counts/m 18
51.70
51.80
51.90
52.00
52.10

Plate 3.220

FUGRO

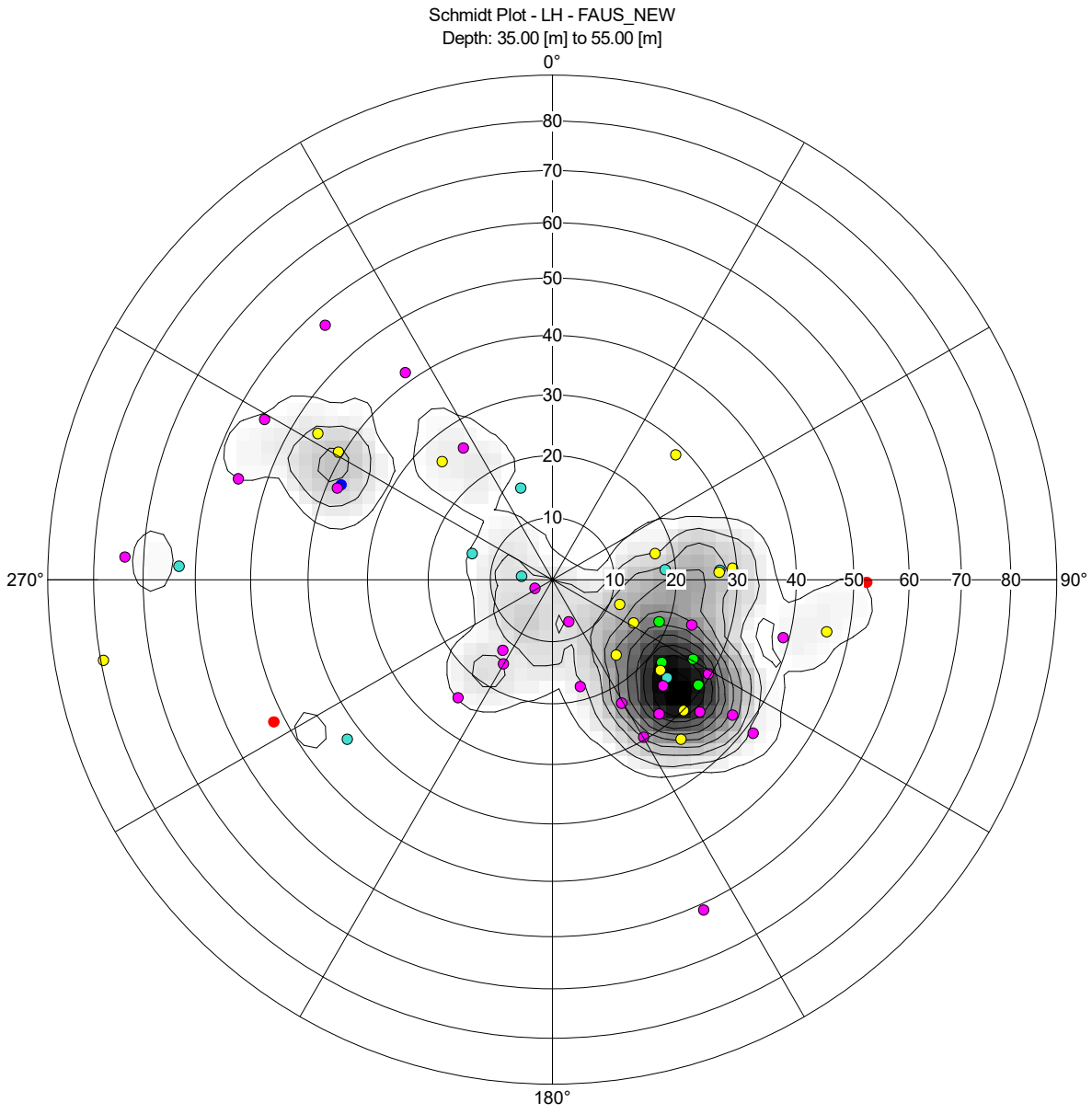
Client: Sure Partners Limited

Project: Arklow Bank Wind Park Geotechnical Borehole Survey 2022

Borehole: **BH12** Log Title: **Polar Plot**

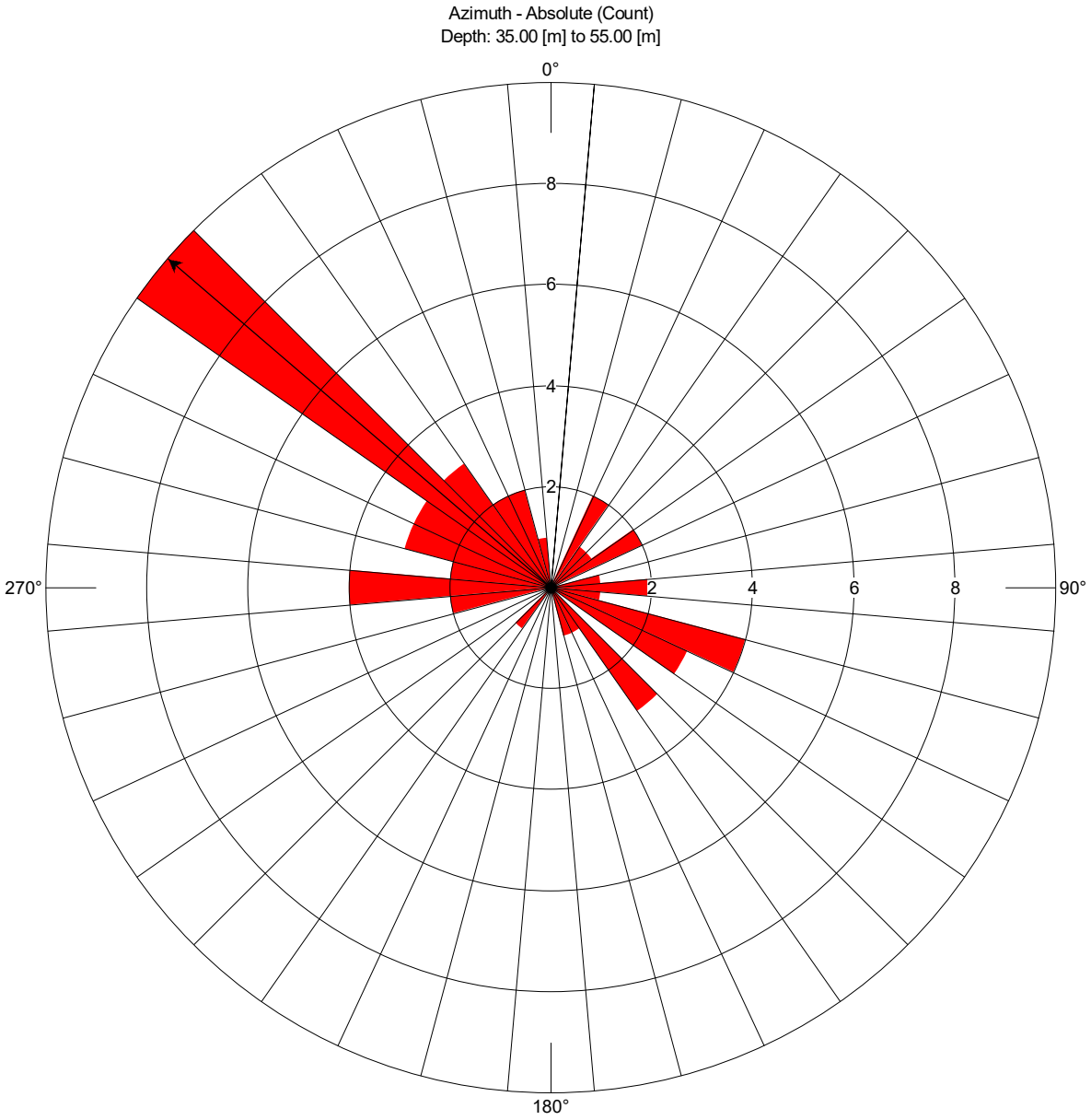
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	55	11.04	310.70
●	2	89.85	76.76
●	1	37.91	114.31
●	25	13.75	330.46
●	15	14.71	277.86
●	8	2.91	57.13
●	4	24.01	301.67

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH12**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	55.00
Mean (3D):	310.70
Min:	30.08
Max:	345.10

WIRELINE GEOPHYSICAL LOG

Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**

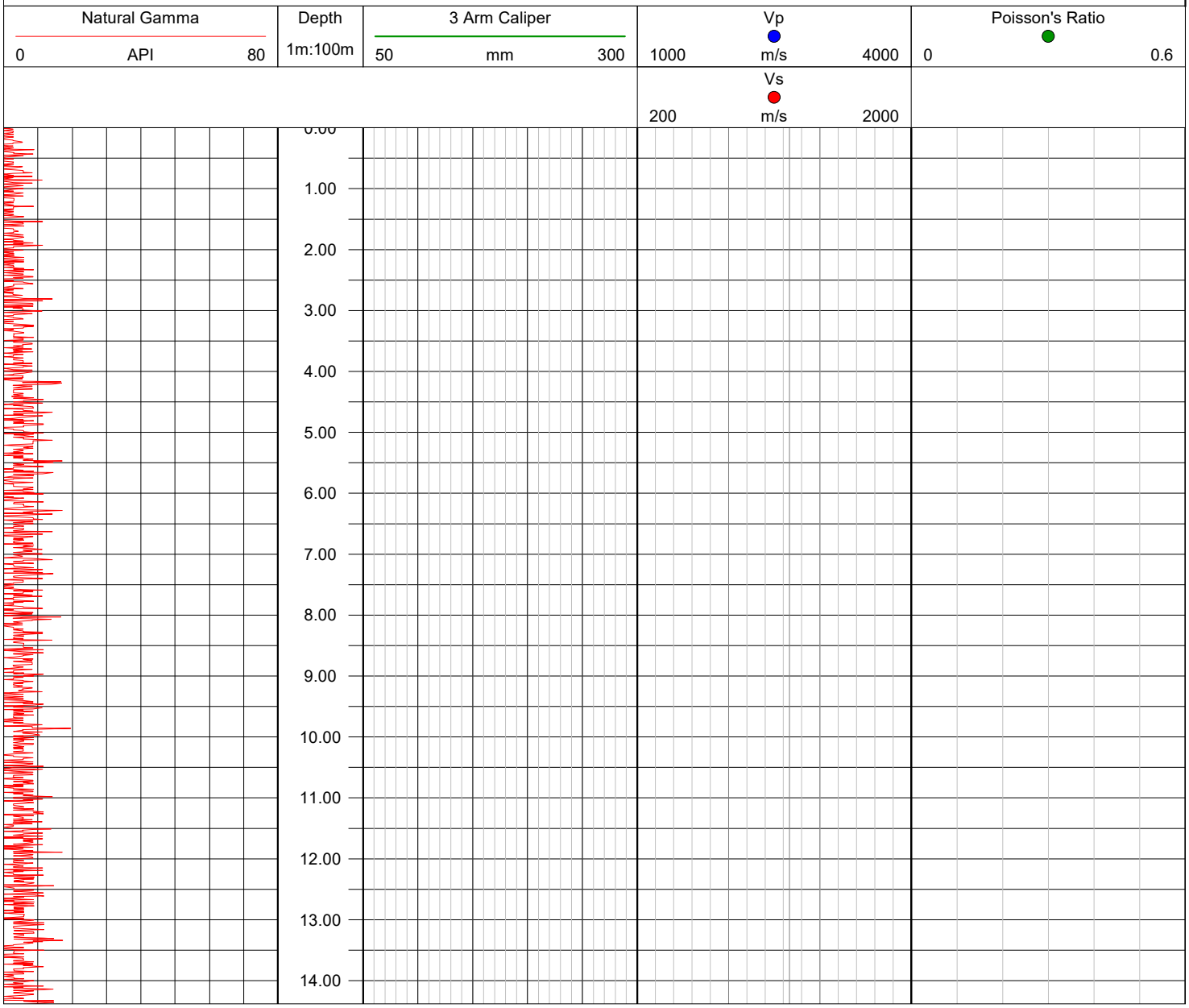
Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
Borehole: BH12	Fugro Site Manager: James Hills	23/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 299352.92, N: 5847931.47	Grid Reference: UTM Zone 30N Elevation: -20.40 m LAT
Borehole Depth (Drilling): 55.00 m	Recorded By: M. Magrosky & H. Spence	Processed By: M. Magrosky
Borehole Depth (Wireline): 52.20 m	Remarks:	
Logging Datum: Mud Level		
Logged Interval: 0.00 m - 52.00 m	Borehole logged in one section as moving barge with high tide was prioritised. Natural gamma readings were recordied in casing above 35.60 m.	
Fluid Level: 0.00 m		

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	3.30 m
146 mm	3.30 m	55.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 36.50 m	2.10 m
Steel	175 mm	- 36.50 m	3.30 m
Steel	146 mm	- 36.50 m	35.60 m



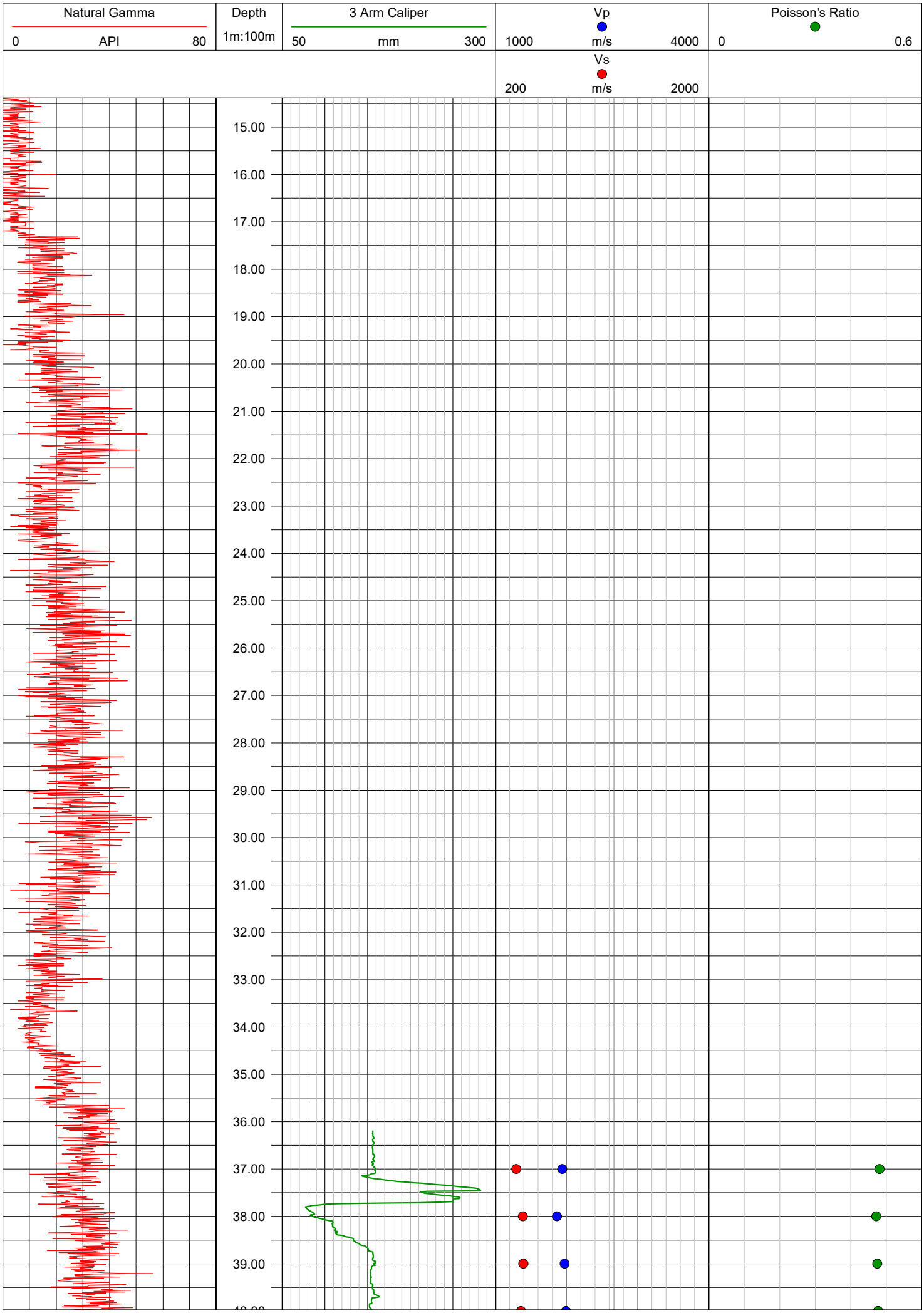

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
1000
m/s
4000
Vs
200
m/s
2000
Poisson's Ratio
0
0.6
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.224

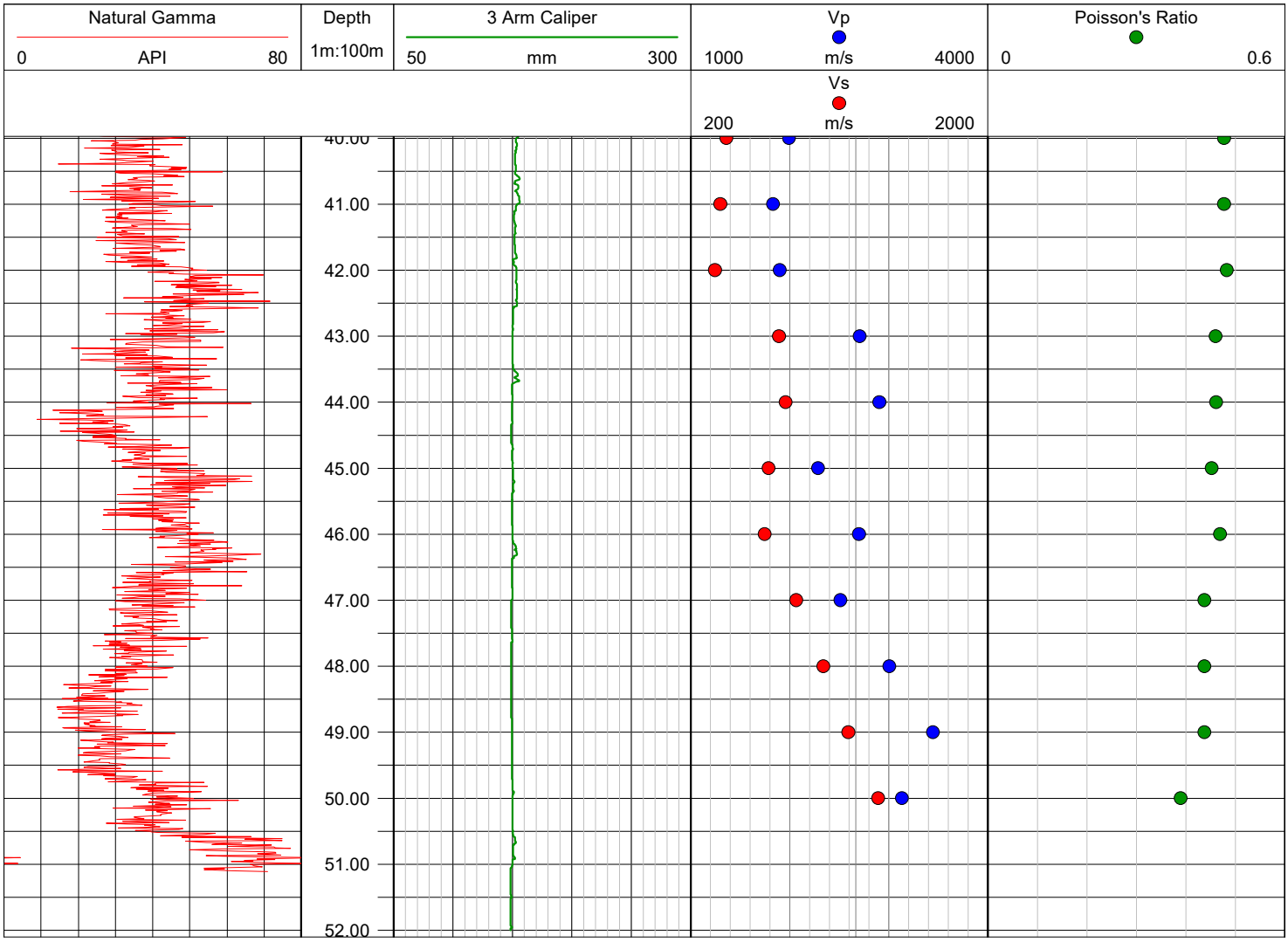

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
1000
m/s
4000
Vs
200
m/s
2000
Poisson's Ratio
0
0.6
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00

Plate 3.225

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date: 05/07/2022
Borehole: BH13	Fugro Site Manager: James Hills	
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 300820.59, N: 5847130.59	Grid Reference: UTM Zone 30N — Elevation: -38.10 m LAT

Borehole Depth (Drilling):	51.50 m
Borehole Depth (Wireline):	50.99 m
Logging Datum:	Mud Level
Logged Interval:	30.84 m - 50.60 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence — Processed By: M. Magrosky

Remarks:

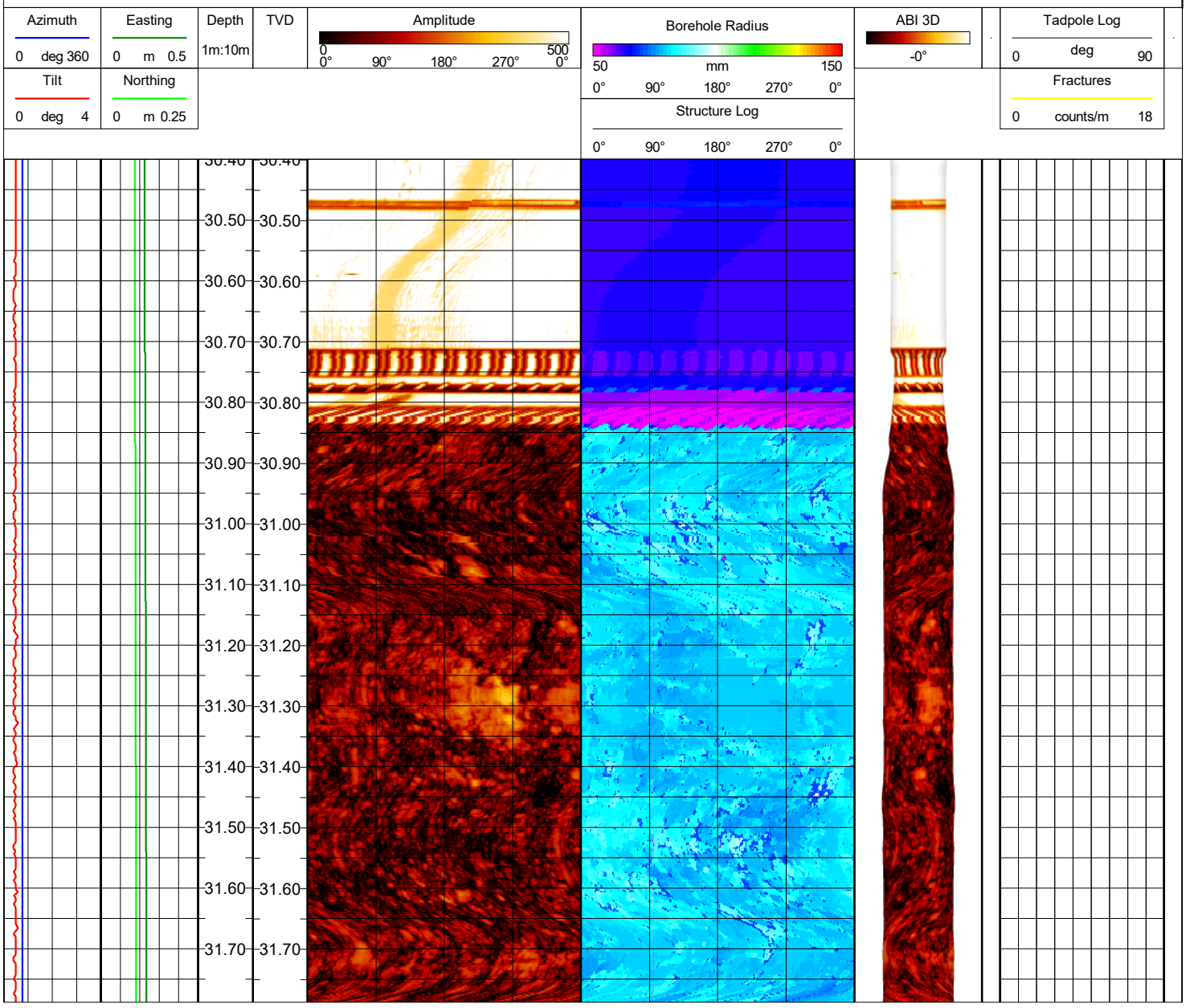
Borehole logged in two sections. Hole kept collapsing during casing pull in Section 2 (first at 28.00, then at 4.30 m), therefore casing lowered down to 31.00 m, no open hole logging above.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	4.30 m
146 mm	4.30 m	51.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 56.26 m	2.30 m
Steel	175 mm	- 56.26 m	4.30 m
Steel (Section 2)	146 mm	- 56.26 m	31.00 m
Steel (Section 1)	146 mm	- 56.26 m	35.50 m



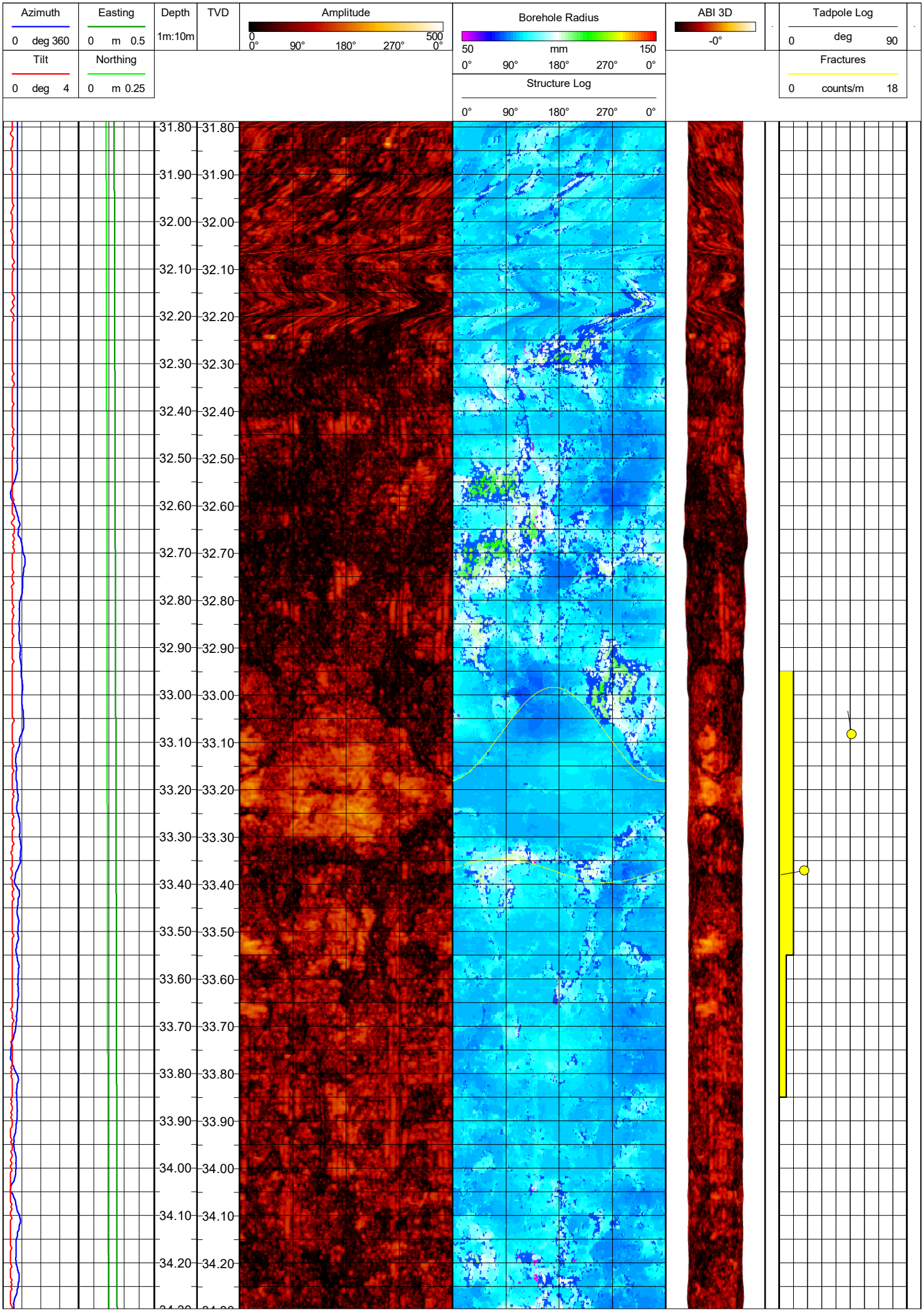

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
31.80
31.90
32.00
32.10
32.20
32.30
32.40
32.50
32.60
32.70
32.80
32.90
33.00
33.10
33.20
33.30
33.40
33.50
33.60
33.70
33.80
33.90
34.00
34.10
34.20

Plate 3.227

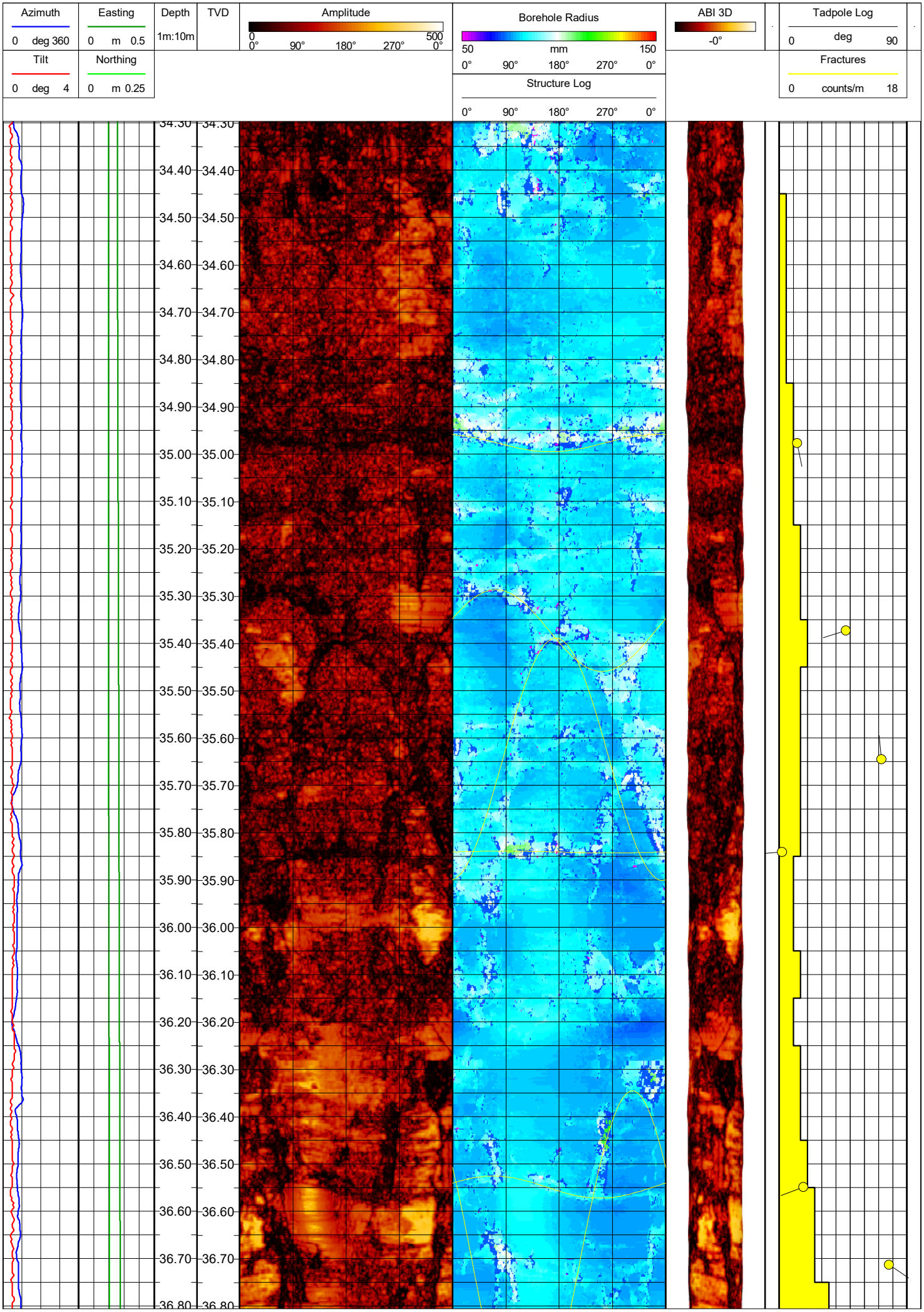

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
34.30
34.40
34.50
34.60
34.70
34.80
34.90
35.00
35.10
35.20
35.30
35.40
35.50
35.60
35.70
35.80
35.90
36.00
36.10
36.20
36.30
36.40
36.50
36.60
36.70
36.80

Plate 3.228

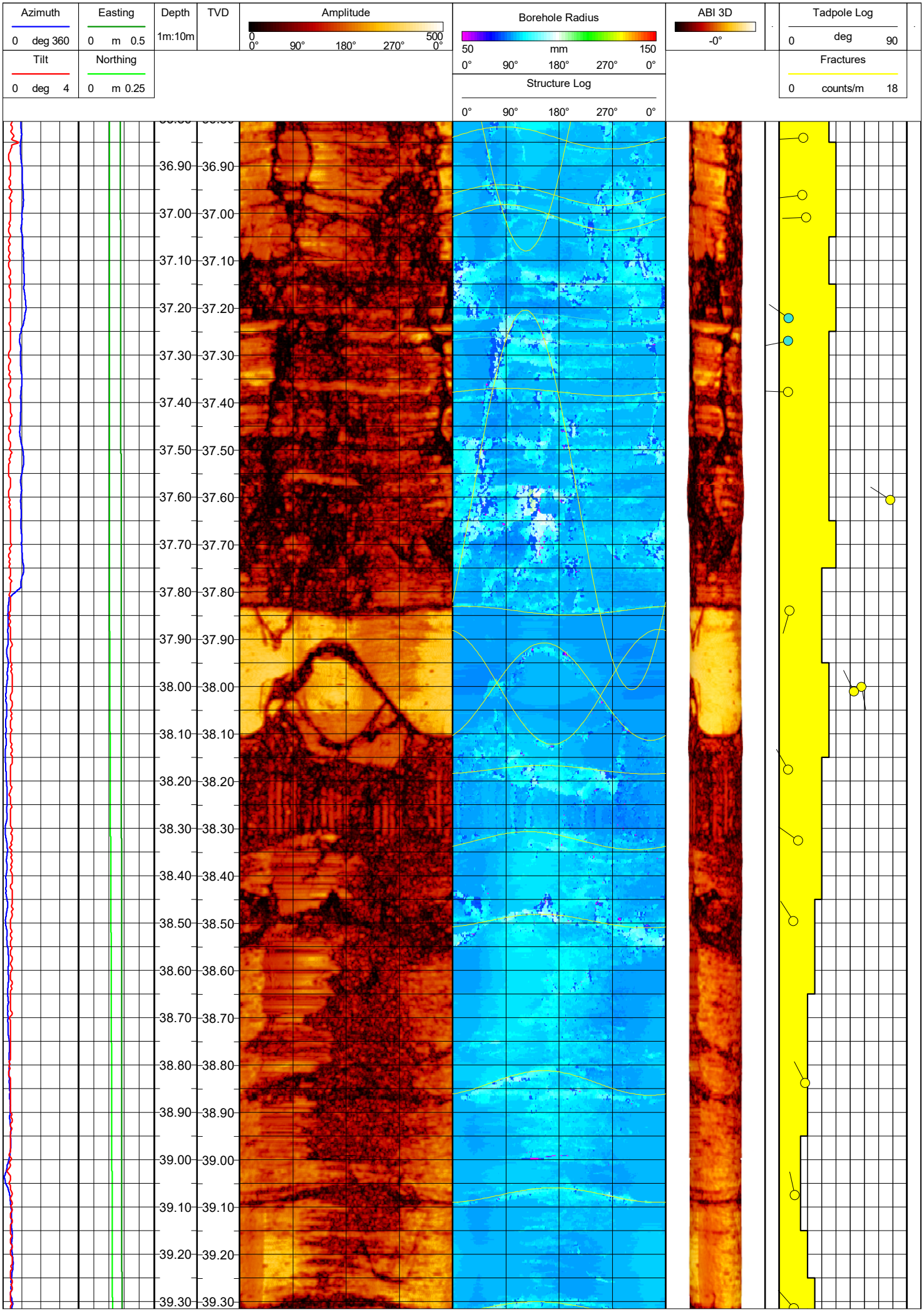

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
36.90
37.00
37.10
37.20
37.30
37.40
37.50
37.60
37.70
37.80
37.90
38.00
38.10
38.20
38.30
38.40
38.50
38.60
38.70
38.80
38.90
39.00
39.10
39.20
39.30

Plate 3.229

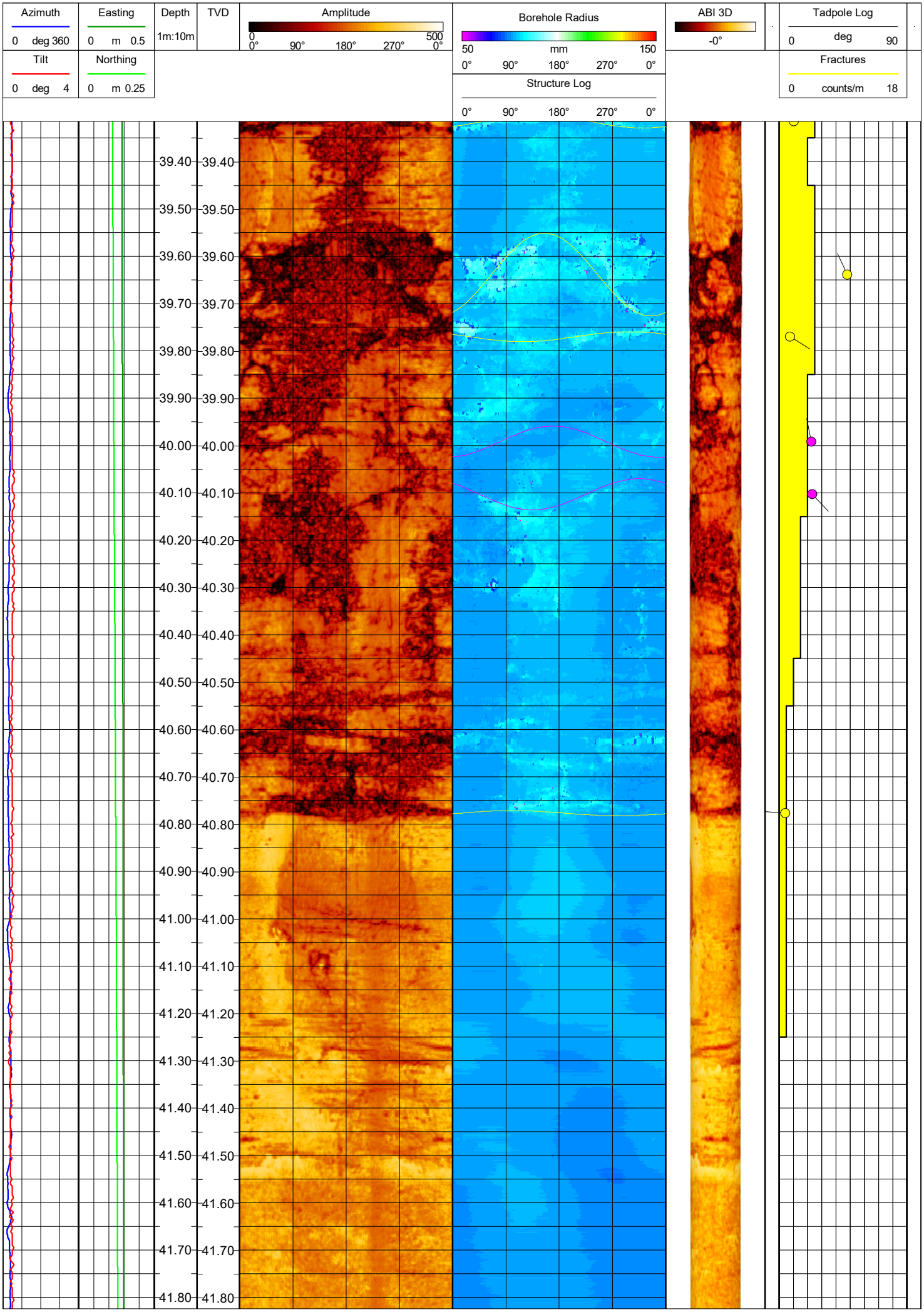

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
39.40 39.40
39.50 39.50
39.60 39.60
39.70 39.70
39.80 39.80
39.90 39.90
40.00 40.00
40.10 40.10
40.20 40.20
40.30 40.30
40.40 40.40
40.50 40.50
40.60 40.60
40.70 40.70
40.80 40.80
40.90 40.90
41.00 41.00
41.10 41.10
41.20 41.20
41.30 41.30
41.40 41.40
41.50 41.50
41.60 41.60
41.70 41.70
41.80 41.80

Plate 3.230

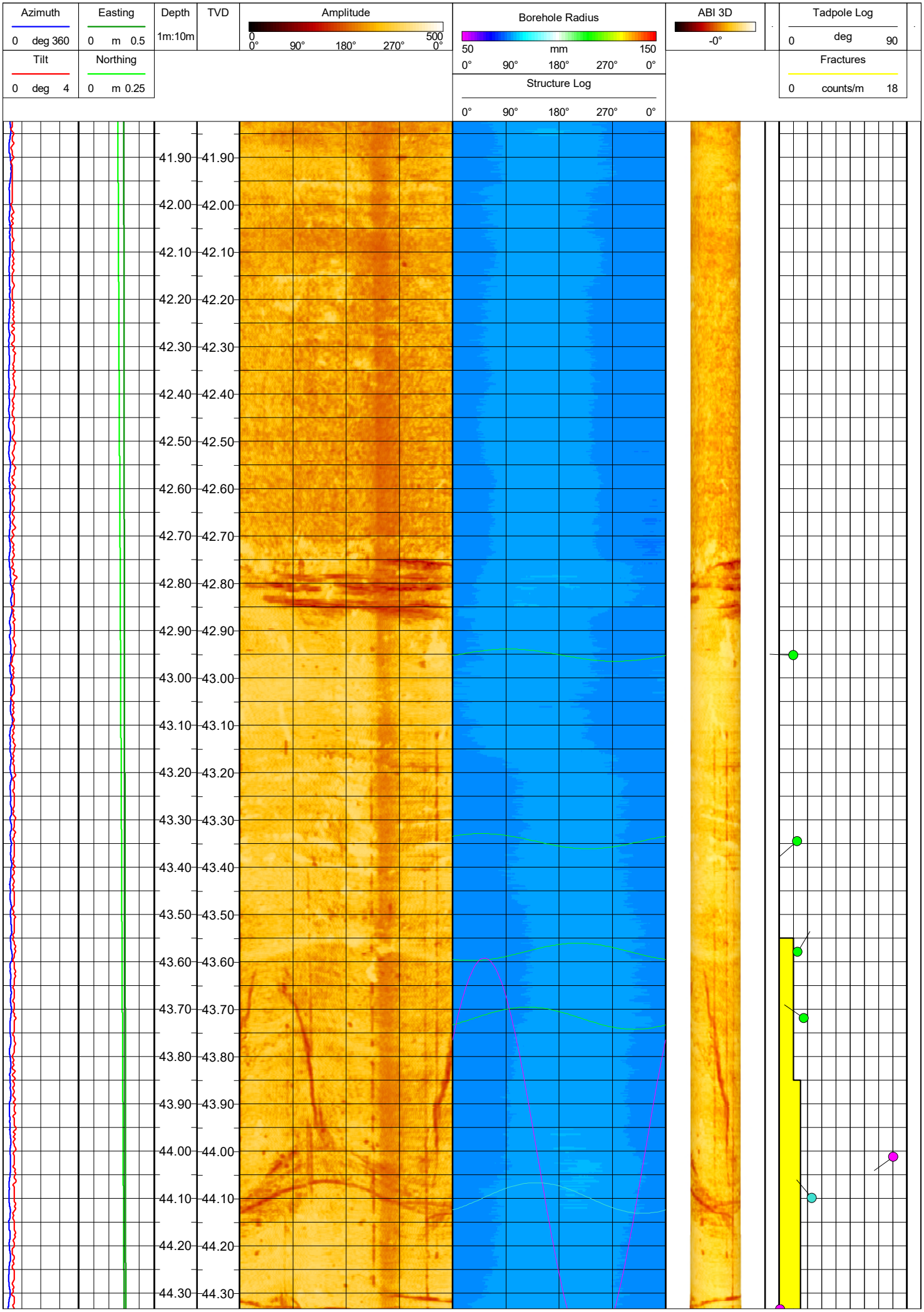

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
41.90
42.00
42.10
42.20
42.30
42.40
42.50
42.60
42.70
42.80
42.90
43.00
43.10
43.20
43.30
43.40
43.50
43.60
43.70
43.80
43.90
44.00
44.10
44.20
44.30

Plate 3.231

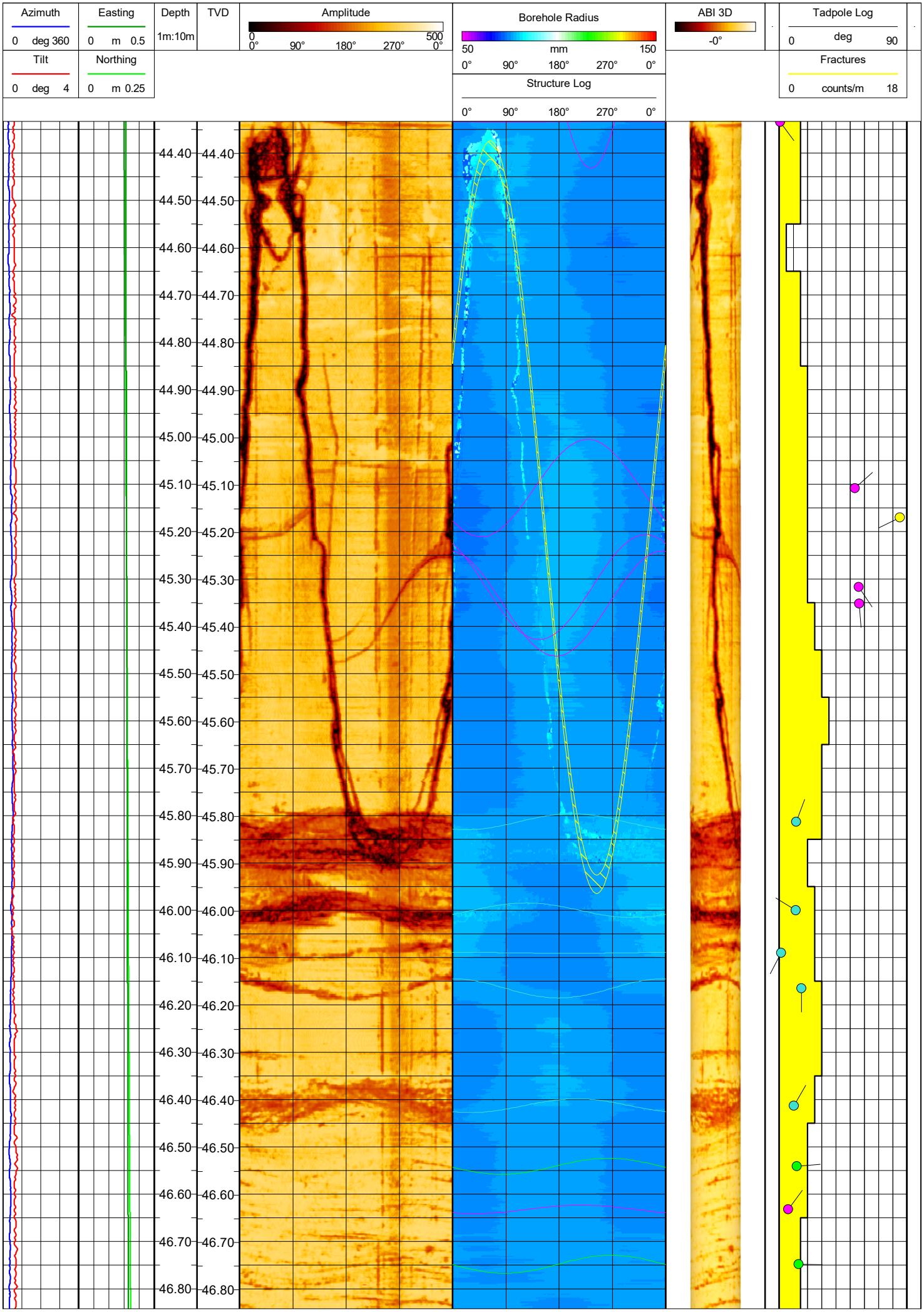

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
44.40
44.50
44.60
44.70
44.80
44.90
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
45.80
45.90
46.00
46.10
46.20
46.30
46.40
46.50
46.60
46.70
46.80

Plate 3.232

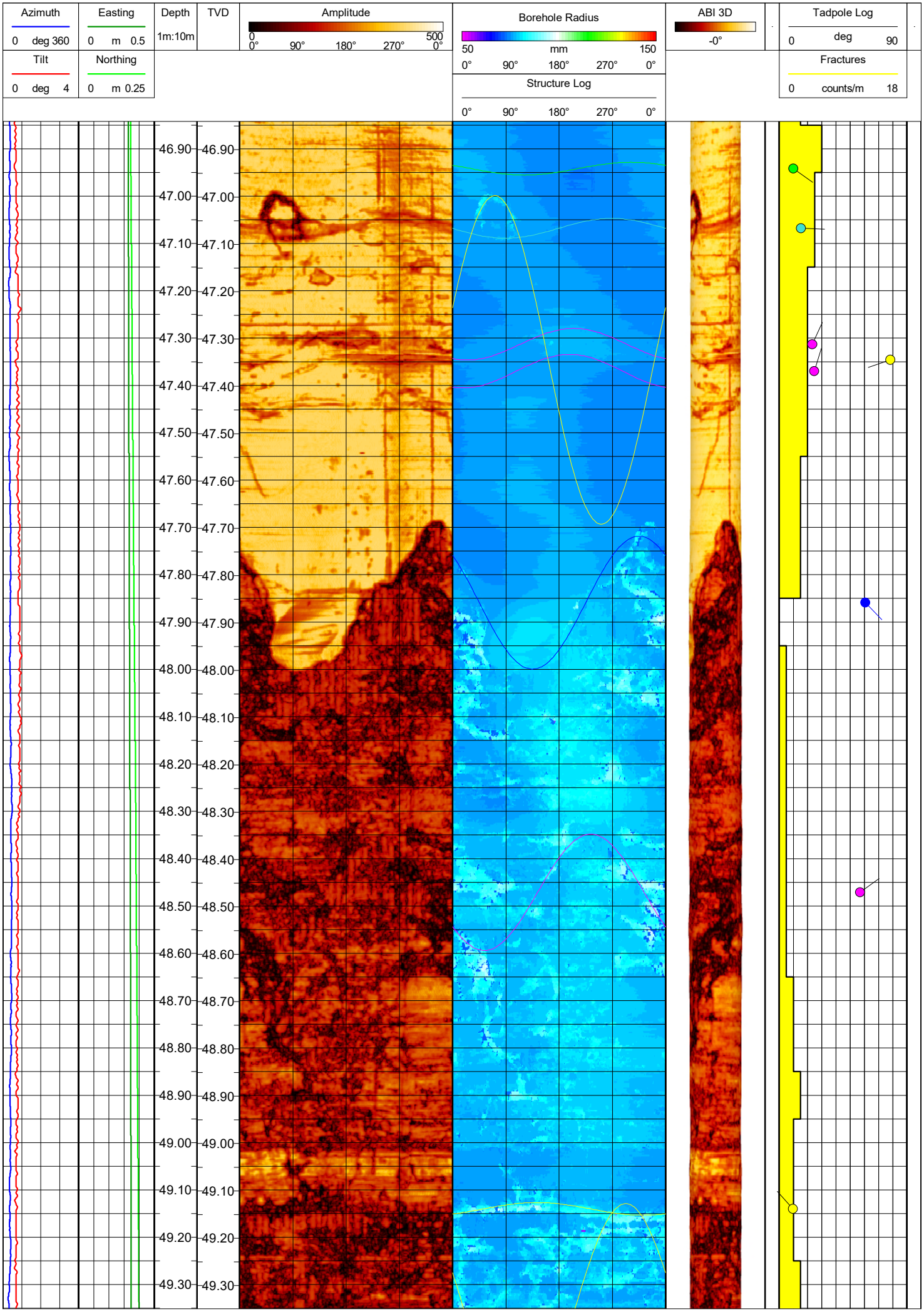

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.25
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
46.90
47.00
47.10
47.20
47.30
47.40
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00
49.10
49.20
49.30

Plate 3.233

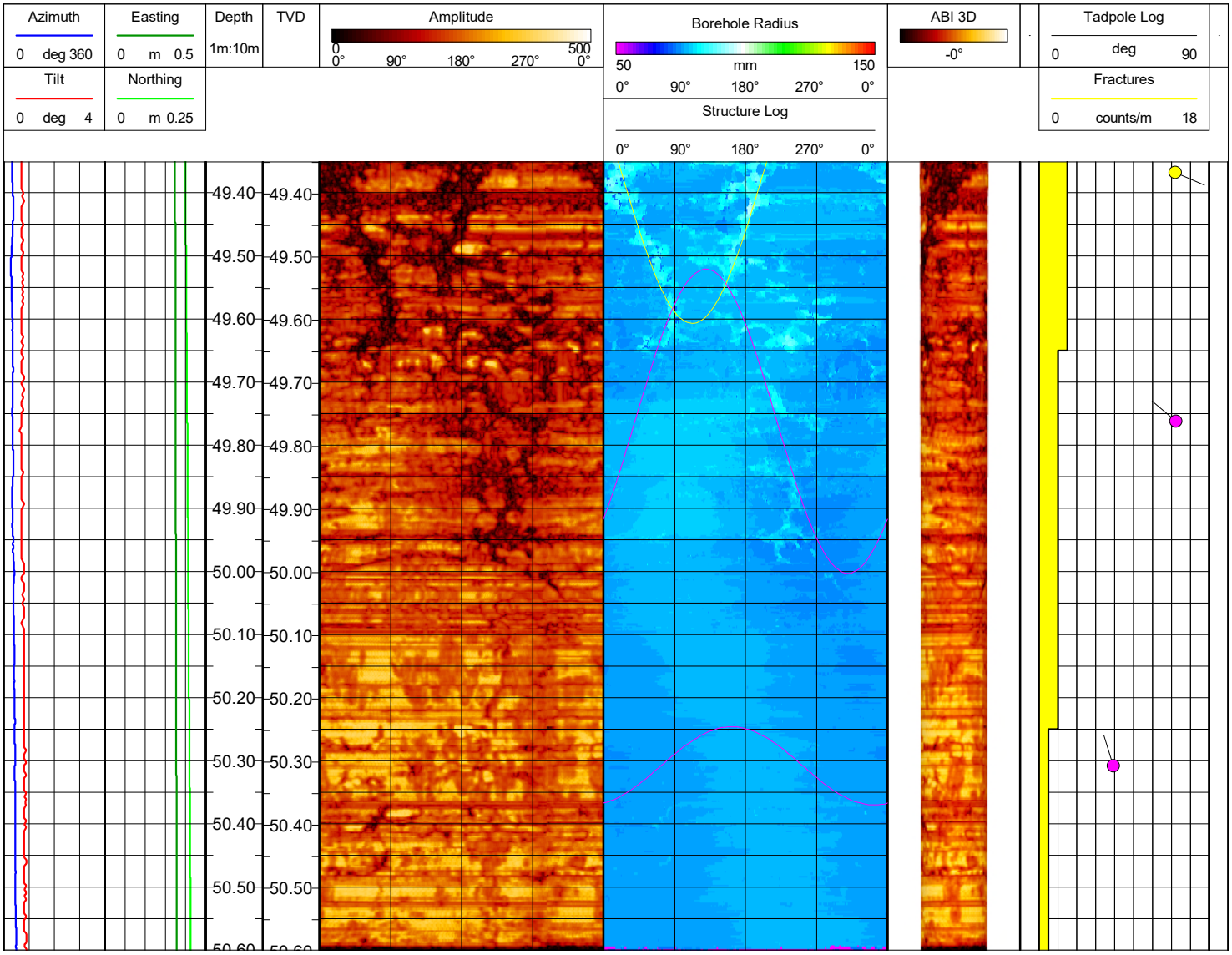
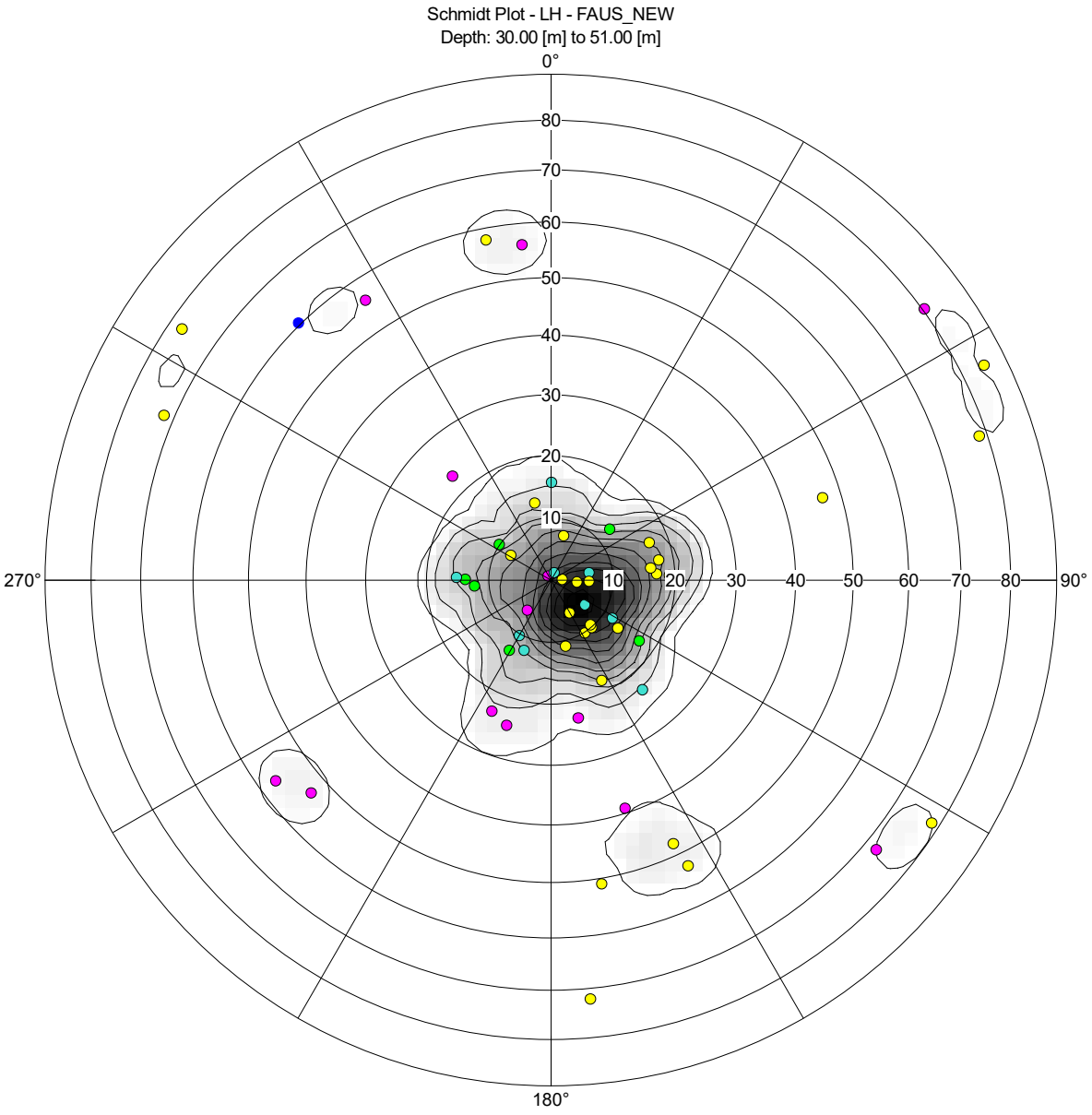

Azimuth
0 deg 360
Easting
0 m 0.5
Depth
1m:10m
TVD
Amplitude
0 500
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.25
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
49.40
49.50
49.60
49.70
49.80
49.90
50.00
50.10
50.20
50.30
50.40
50.50

Plate 3.234

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH13**
Log Title:	**Polar Plot**

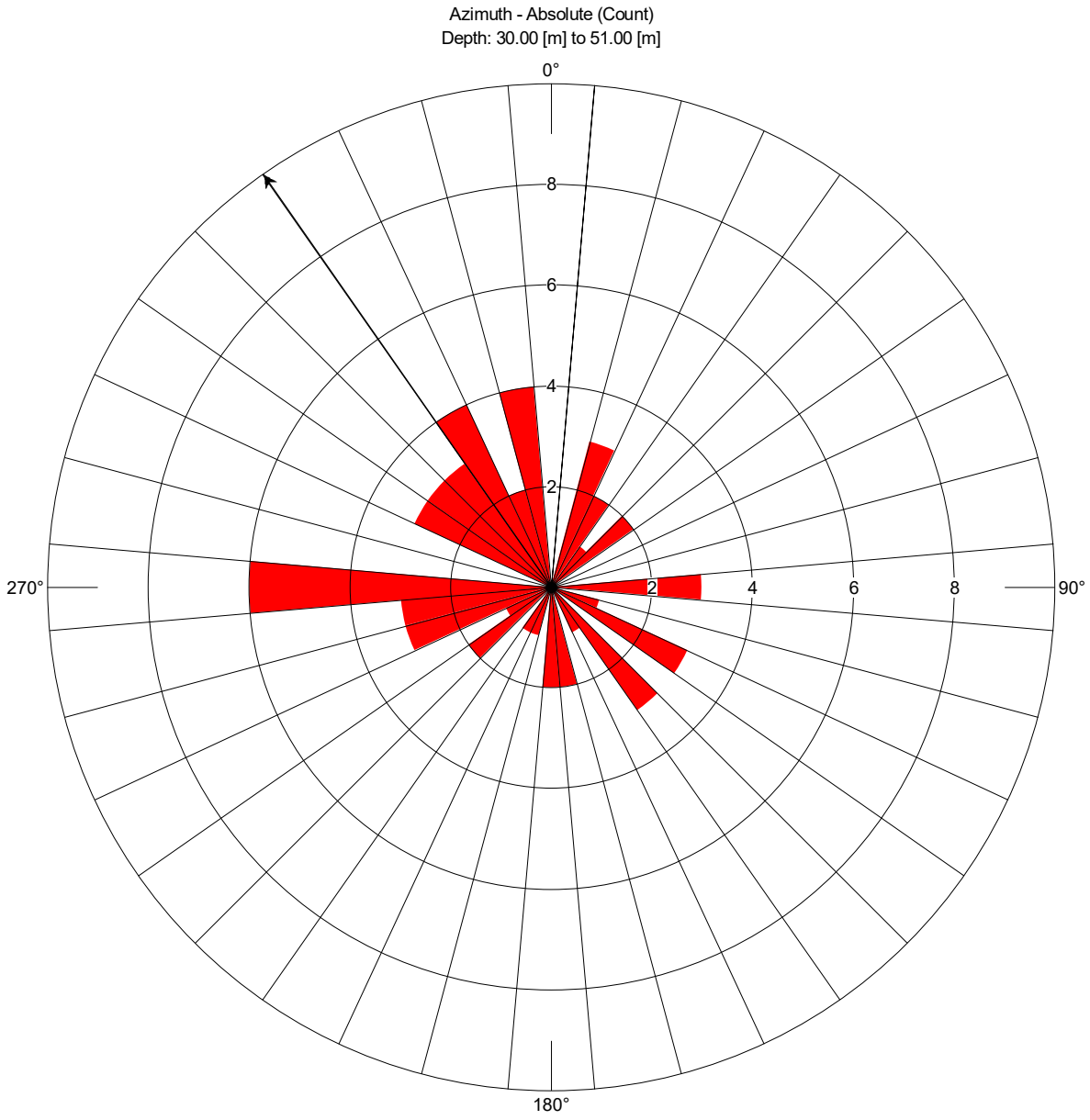
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	59	5.81	325.10
	29	13.26	294.79
	9	3.61	337.13
	13	18.01	37.24
	7	1.62	43.60
	1	60.55	135.58

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH13**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	59.00
Mean (3D):	325.10
Min:	17.05
Max:	354.57

WIRELINE GEOPHYSICAL LOG

Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**

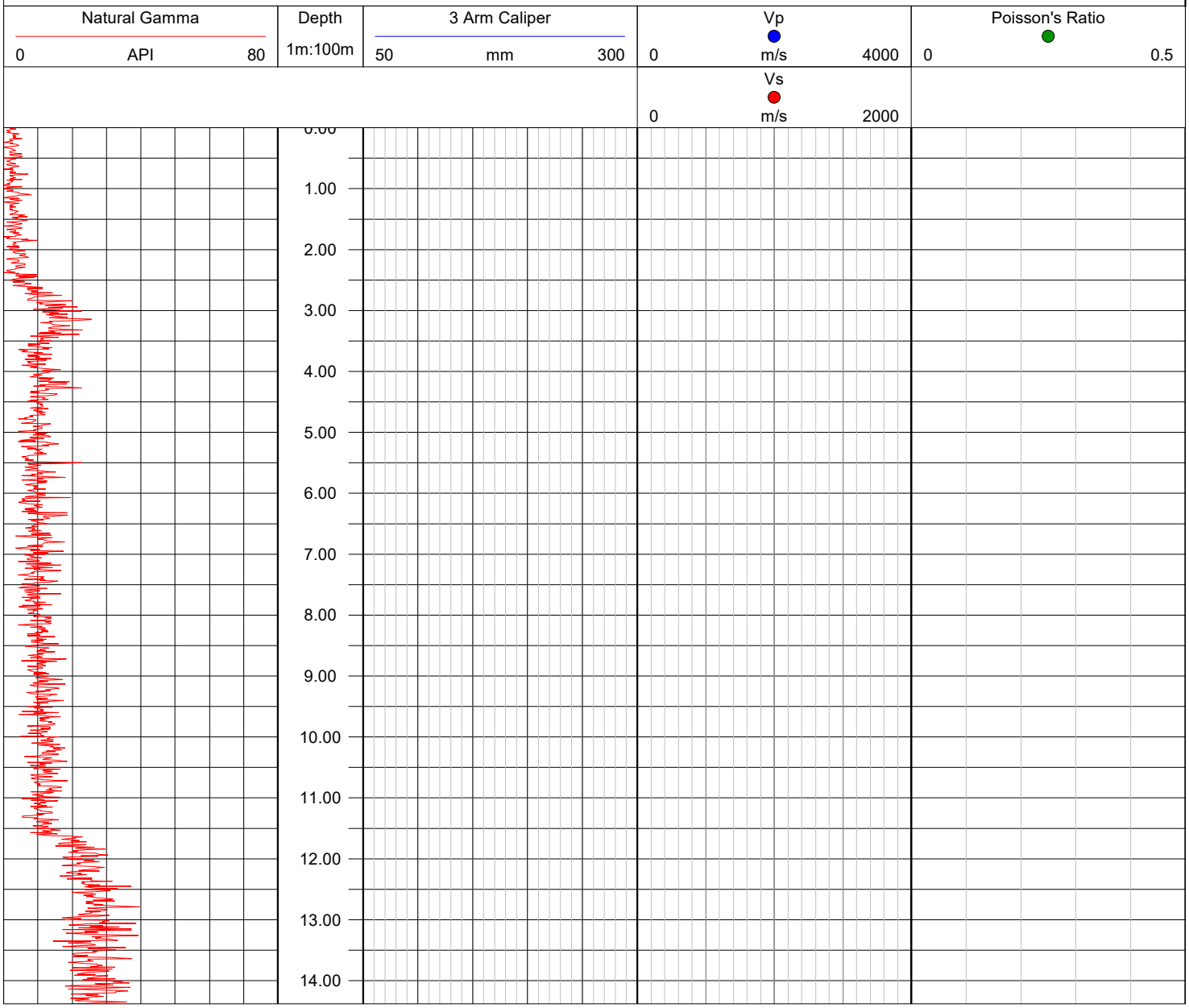
Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date:
Borehole: BH13	Fugro Site Manager: James Hills	05/07/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 300820.59, N: 5847130.59	Grid Reference: UTM Zone 30N
Elevation: -38.10 m LAT		
Borehole Depth (Drilling): 51.50 m	Recorded By: H. Spence	Processed By: M. Magrosky
Borehole Depth (Wireline): 50.99 m	Remarks:	
Logging Datum: Mud Level		
Logged Interval: 0.00 m - 50.99 m	Borehole logged in two sections. Hole kept collapsing during casing pull in Section 2 (first at 28.00, then at 4.30 m), therefore casing lowered down to 31.00 m, no open hole logging above.	
Fluid Level: 0.00 m		

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	4.30 m
146 mm	4.30 m	51.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 56.26 m	2.30 m
Steel	175 mm	- 56.26 m	4.30 m
Steel (Section 2)	146 mm	- 56.26 m	31.00 m
Steel (Section 1)	146 mm	- 56.26 m	35.50 m



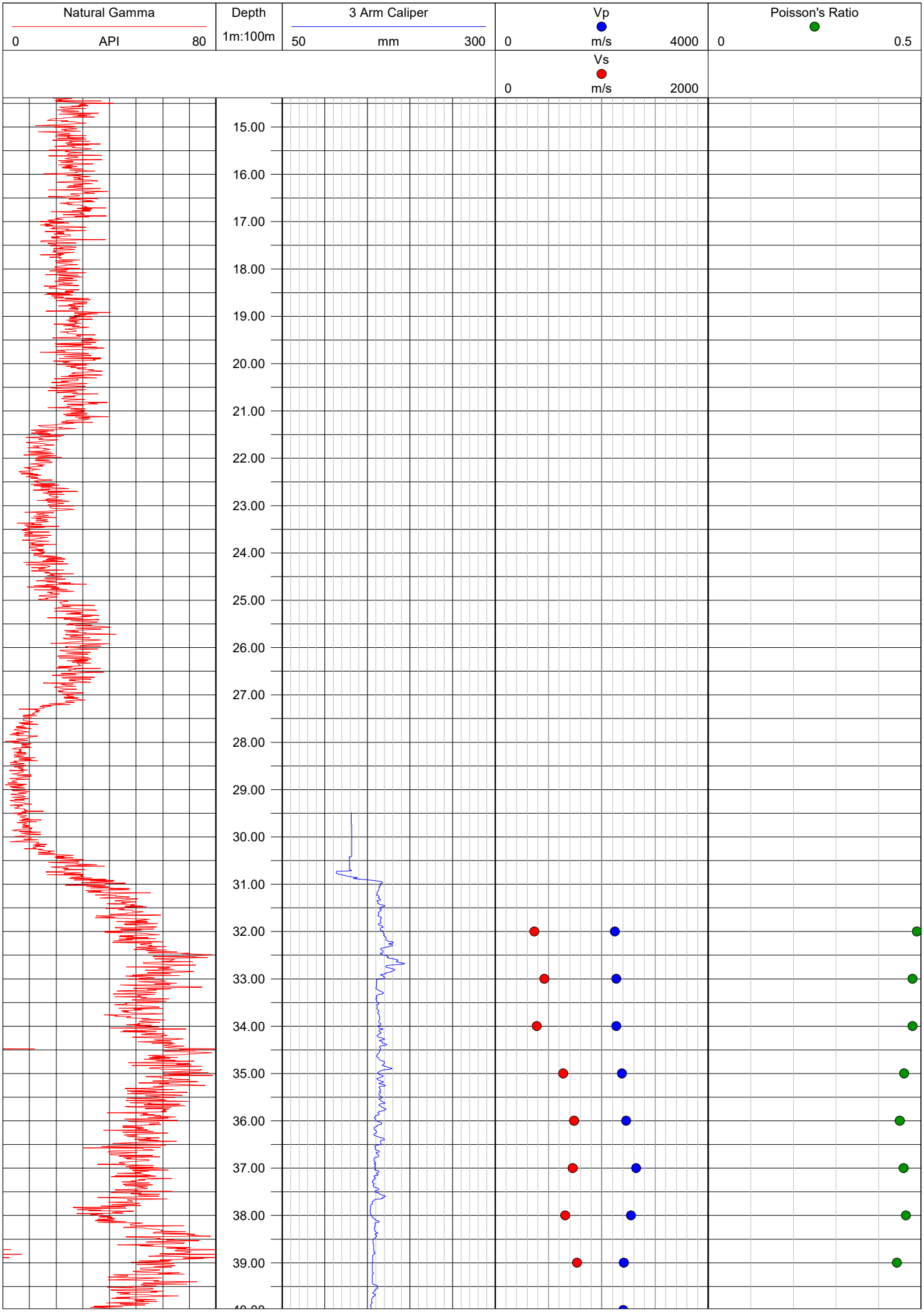

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.238

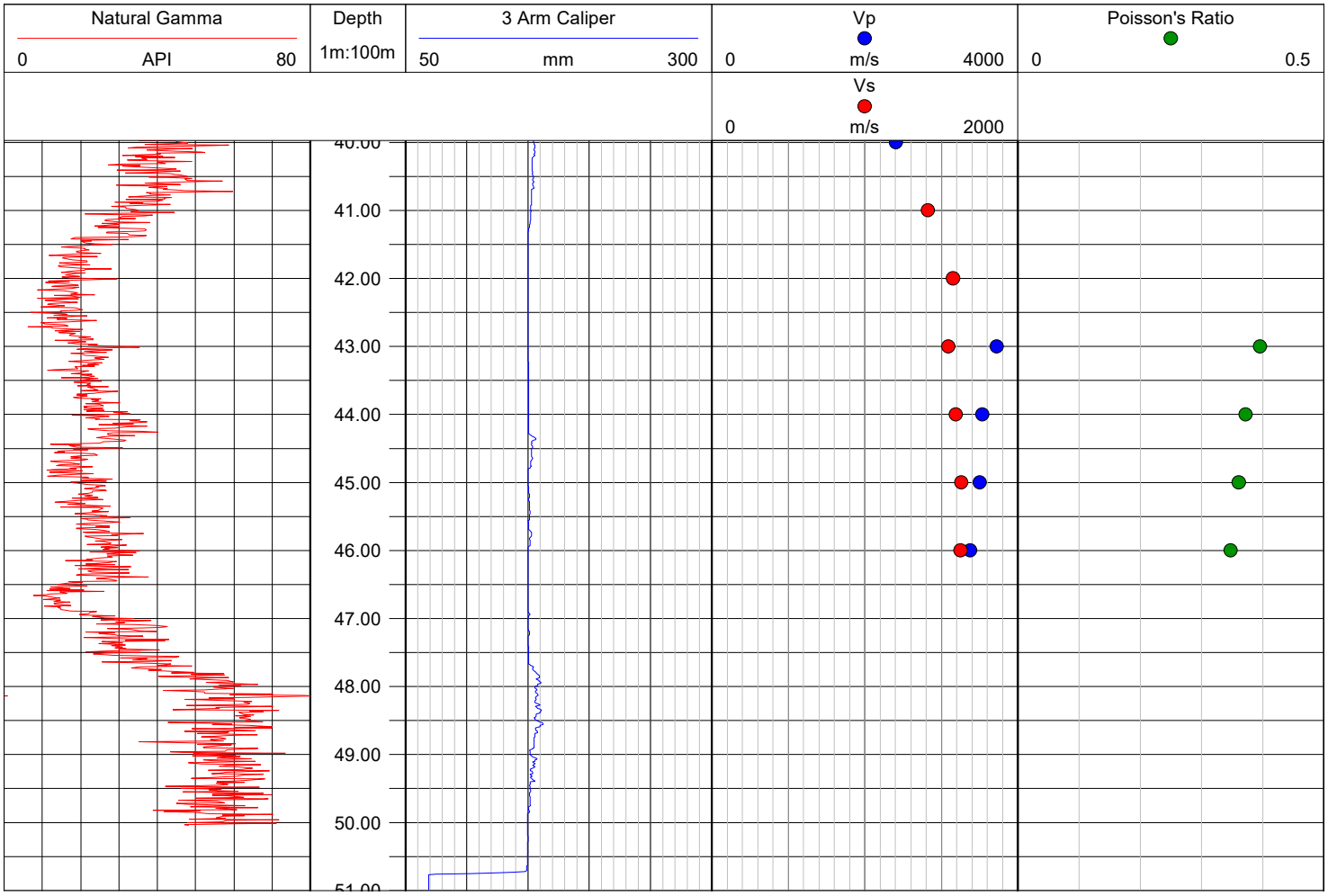

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00

Plate 3.239

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date: 09/07/2022
Borehole: BH20	Fugro Site Manager: James Hills	
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 303136.14, N: 5857856.82	Grid Reference: UTM Zone 30N — Elevation: -28.40 m LAT

Borehole Depth (Drilling):	60.00 m
Borehole Depth (Wireline):	59.34 m
Logging Datum:	Mud Level
Logged Interval:	49.98 m - 59.25 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence — Processed By: H. Spence

Remarks:

Borehole logged in three sections, ABI logging was aborted in Sections 2 and 3 due to poor expected data quality (as visible in Section 1) related to soft sediments and borehole stability concerns.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	5.45 m
146 mm	5.45 m	60.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 46.15 m	2.30 m
Steel	175 mm	- 46.15 m	5.45 m
Steel (Section 3)	146 mm	- 46.15 m	20.10 m
Steel (Section 2)	146 mm	- 46.15 m	35.10 m
Steel (Section 1)	146 mm	- 46.15 m	50.10 m

Azimuth 0 deg 360 | Easting -0.25 0 | Depth 1m:10m | TVD | Amplitude 0 250 0° 90° 180° 270° 0°

Tilt 0 deg 4 | Northing 0 m 1

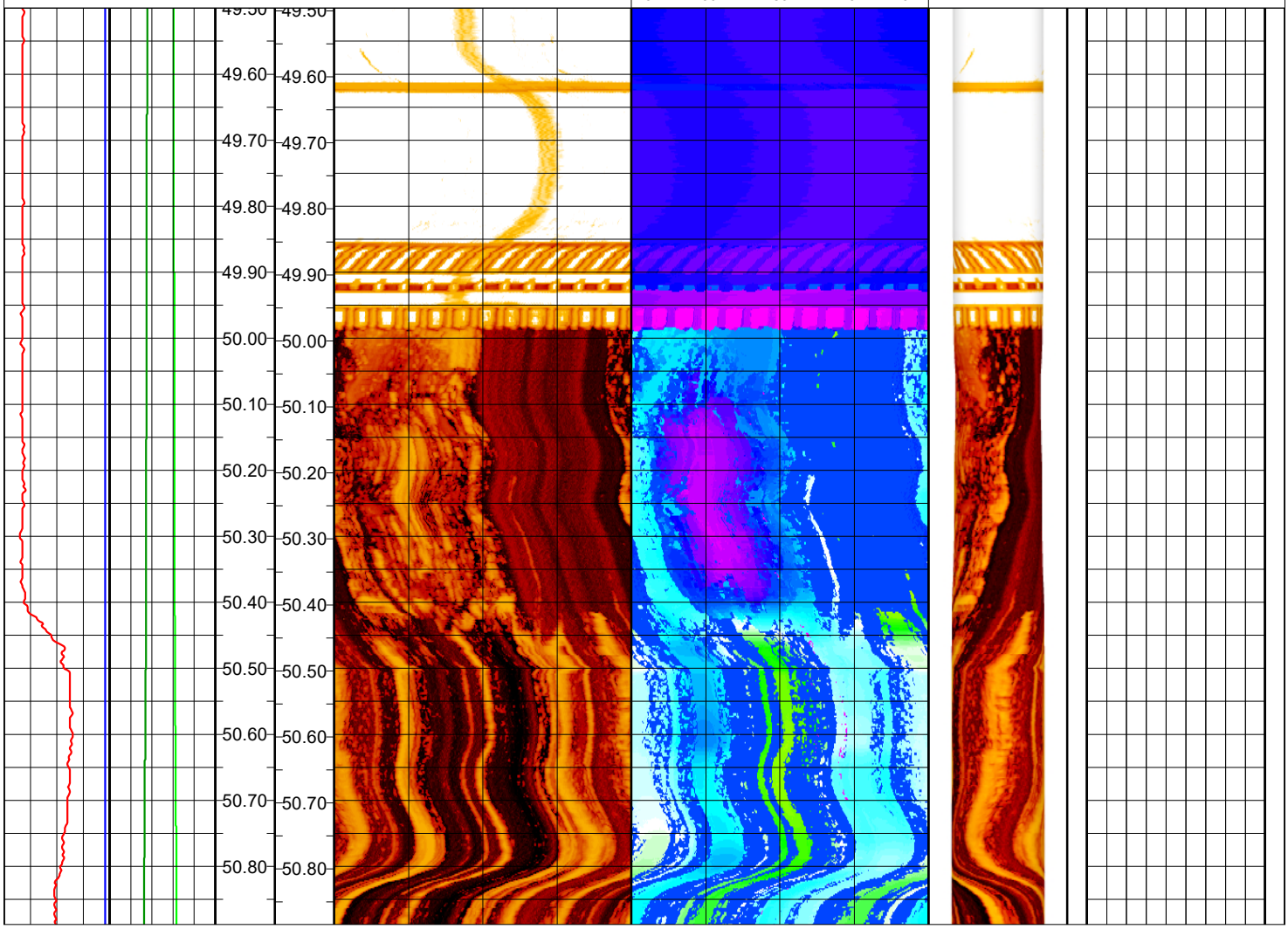
Borehole Radius 50 mm 150 0° 90° 180° 270° 0°

Structure Log 0° 90° 180° 270° 0°

ABI 3D -0°

Tadpole Log 0 deg 90

Fractures 0 counts/m 18



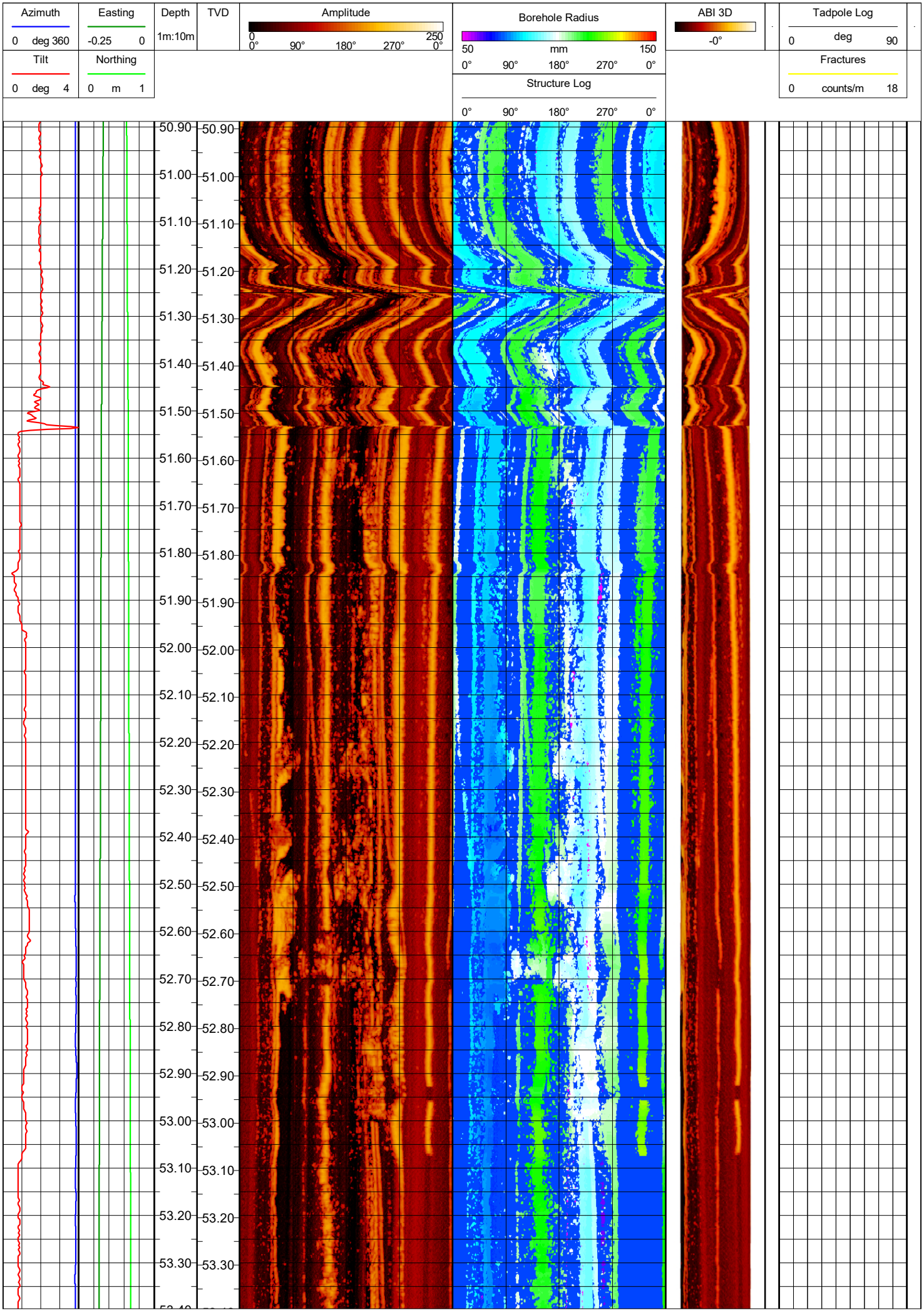

Azimuth
0 deg 360
Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
0 250
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 1
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60
51.70
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50
52.60
52.70
52.80
52.90
53.00
53.10
53.20
53.30

Plate 3.241

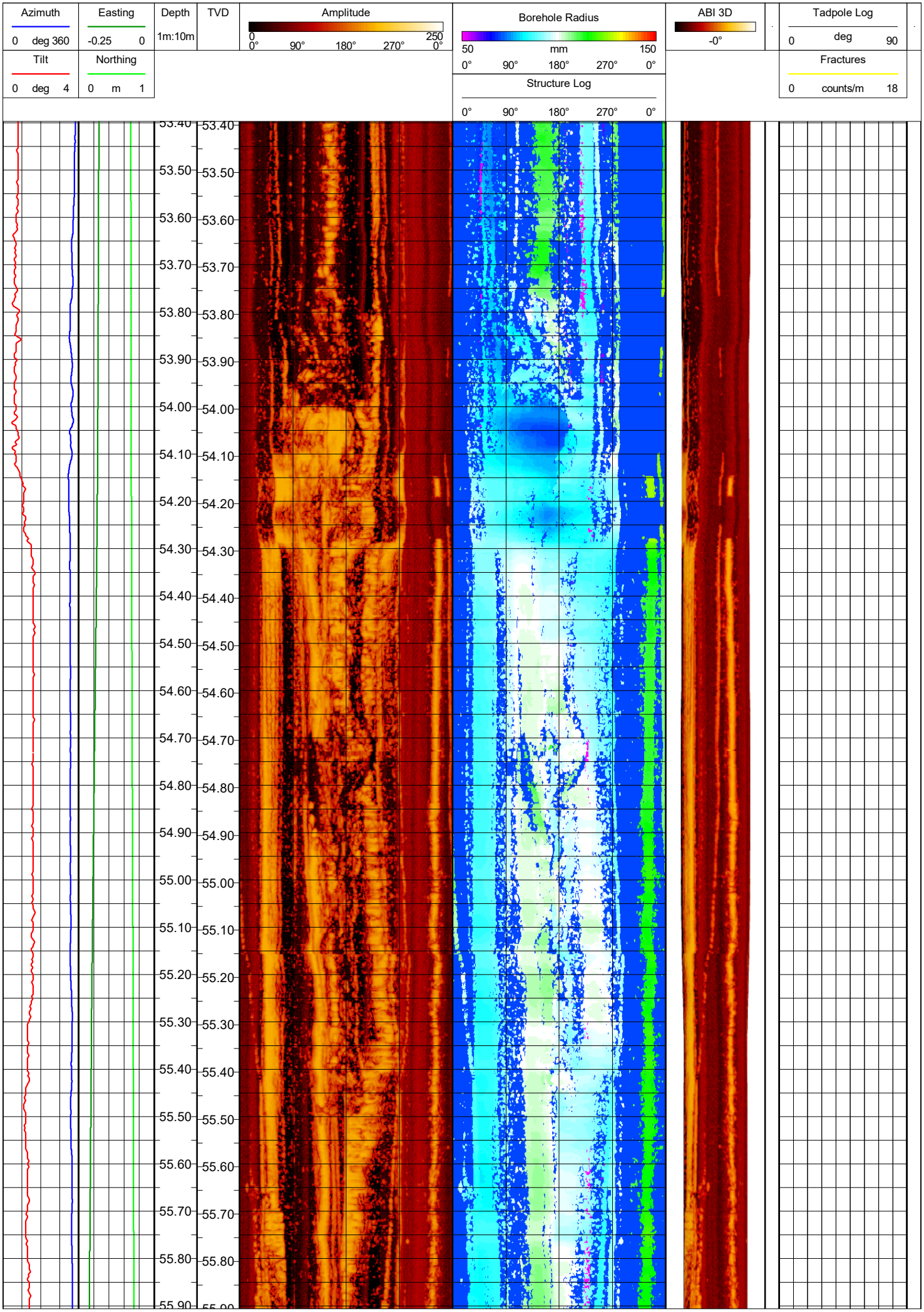

Azimuth
0 deg 360
Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
0 250
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 1
Fractures
0 counts/m 18
Structure Log
0° 90° 180° 270° 0°
53.40
53.50
53.60
53.70
53.80
53.90
54.00
54.10
54.20
54.30
54.40
54.50
54.60
54.70
54.80
54.90
55.00
55.10
55.20
55.30
55.40
55.50
55.60
55.70
55.80

Plate 3.242

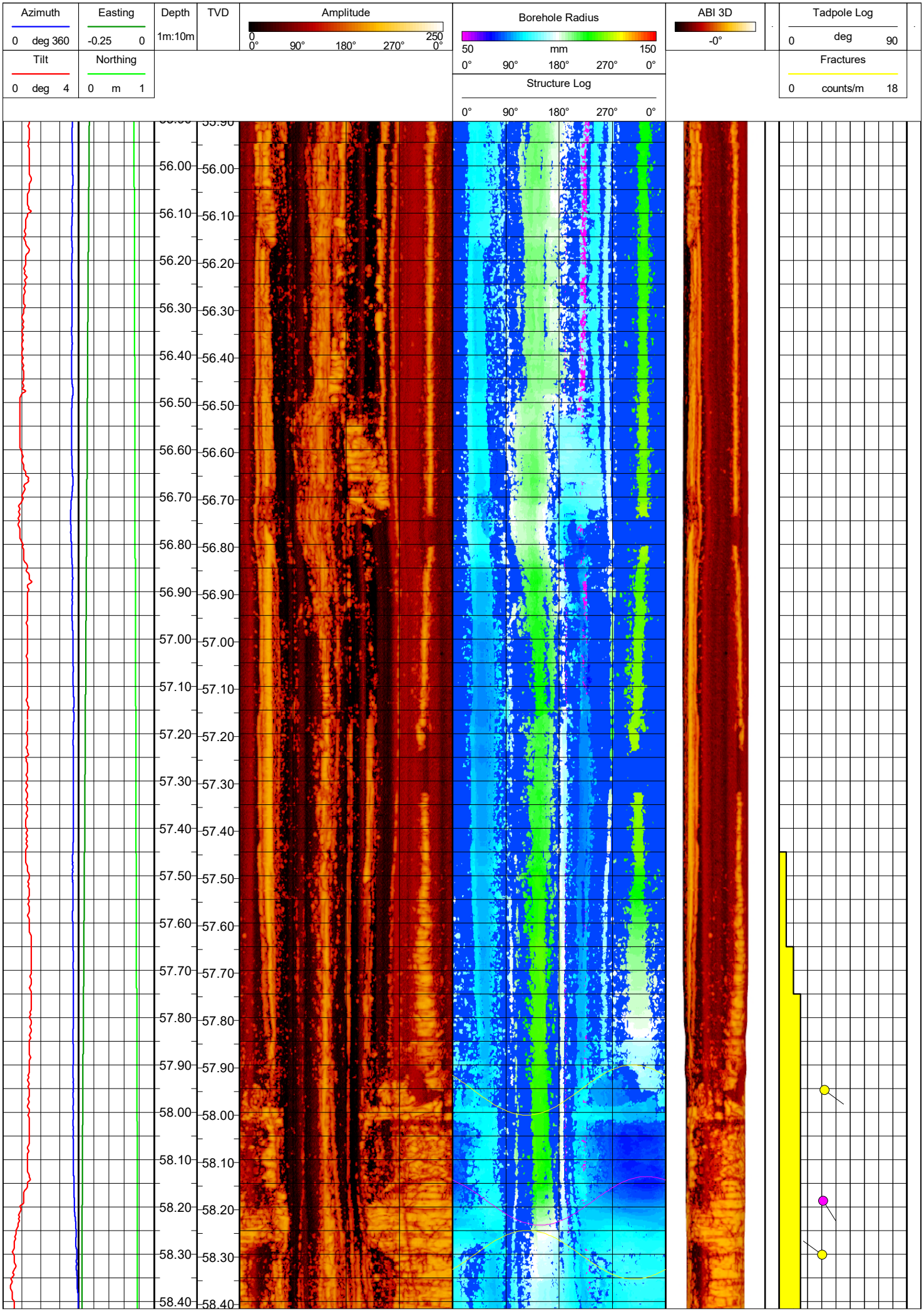

Azimuth
0 deg 360
Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
0 250
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 1
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
56.00
56.10
56.20
56.30
56.40
56.50
56.60
56.70
56.80
56.90
57.00
57.10
57.20
57.30
57.40
57.50
57.60
57.70
57.80
57.90
58.00
58.10
58.20
58.30
58.40

Plate 3.243

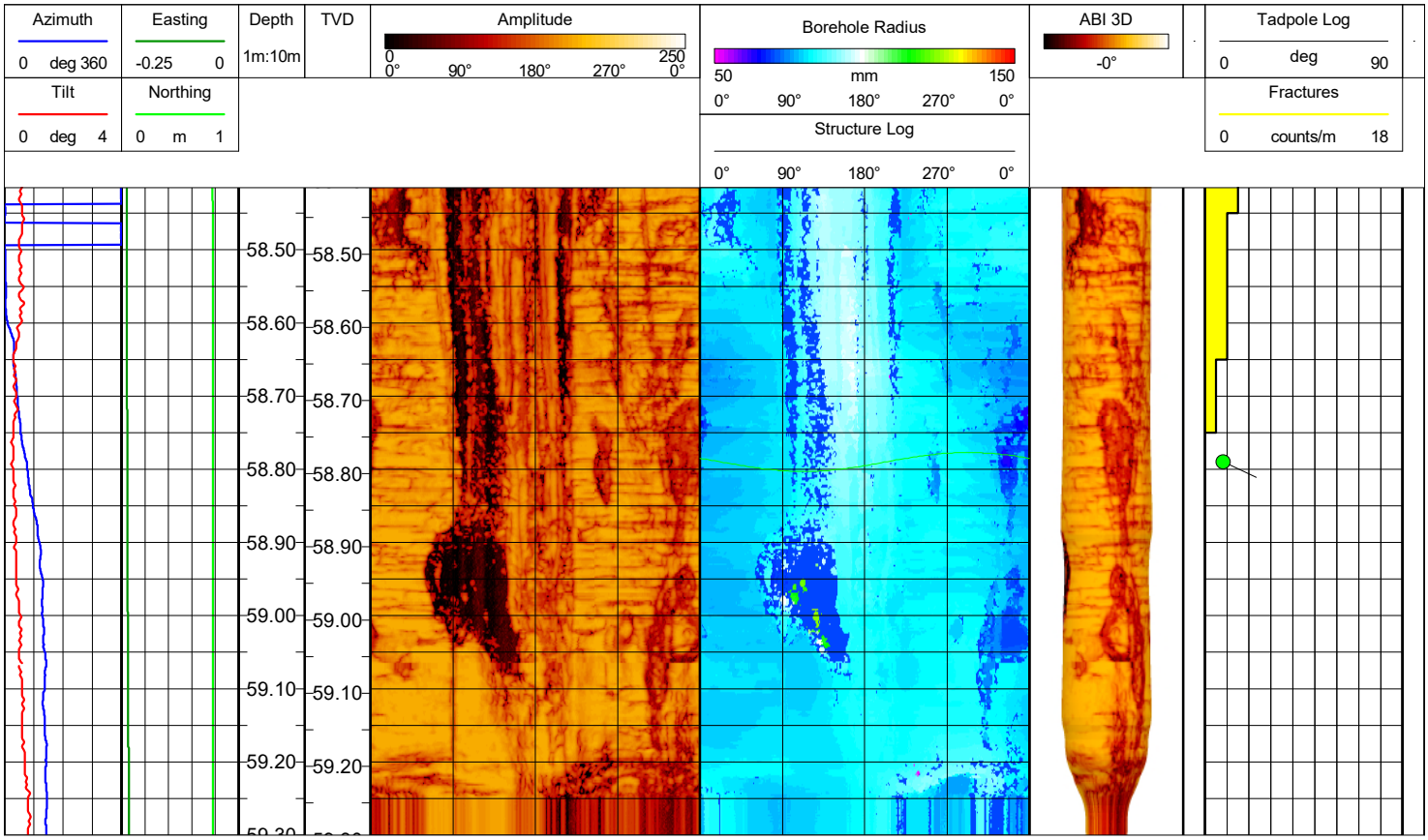
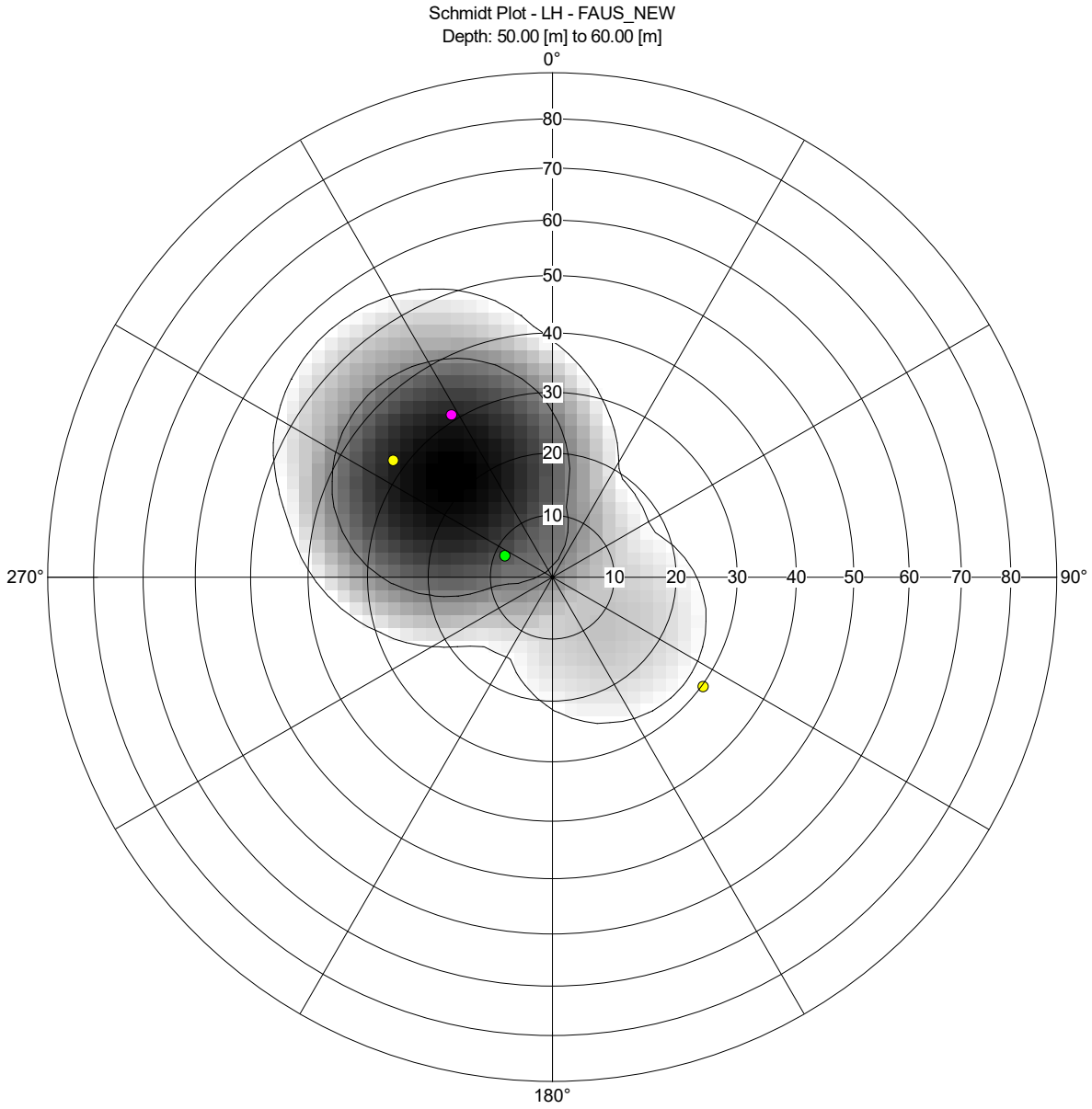

Azimuth
0 deg 360
Easting
-0.25 0
Depth
1m:10m
TVD
Amplitude
0 250
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 1
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
58.50
58.60
58.70
58.80
58.90
59.00
59.10
59.20

Plate 3.244

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH20**
Log Title:	**Polar Plot**

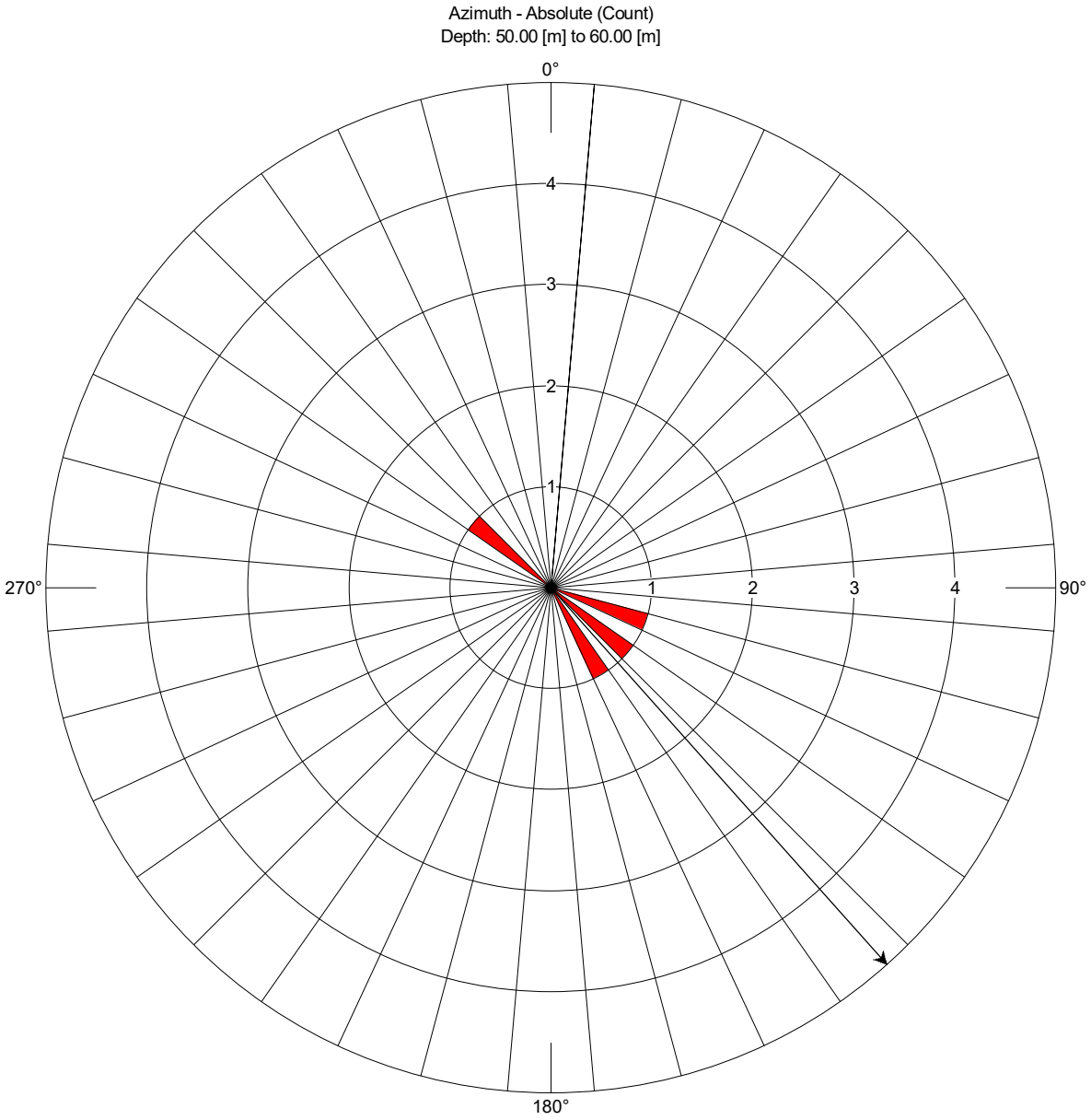
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	4	13.01	138.28
○	2	0.87	132.14
○	1	31.06	148.12
○	1	8.39	114.66

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH20**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	4.00
Mean (3D):	138.28
Min:	114.66
Max:	306.03

WIRELINE GEOPHYSICAL LOG

Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**

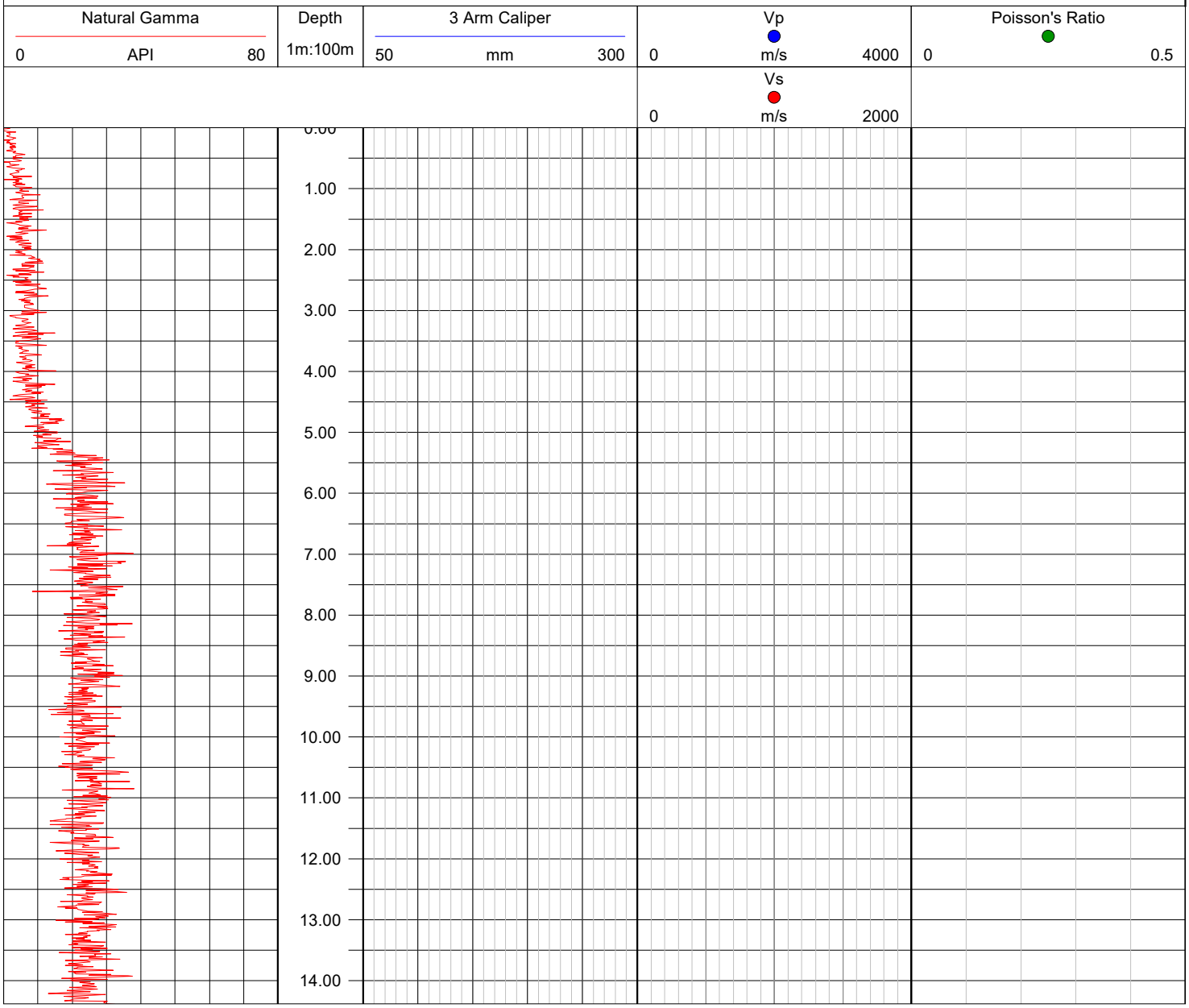
Client: Sure Partners Limited	Client Representative: Karl Routledge	Logging Date:
Borehole: BH20	Fugro Site Manager: James Hills	09/07/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 303136.14, N: 5857856.82	Grid Reference: UTM Zone 30N
Elevation: -28.40 m LAT		
Borehole Depth (Drilling): 60.00 m	Recorded By: H. Spence	Processed By: H. Spence
Borehole Depth (Wireline): 59.34 m	Remarks:	
Logging Datum: Mud Level	Borehole logged in three sections. Natural gamma readings were acquired inside the casing from 50.10 m to 0.00 m. In Section 3 borehole collapse at 22.50 m onto PS Logger tool. Retrieval attempts were unsuccessful, tool was lost in the hole.	
Logged Interval: 0.00 m - 59.25 m		
Fluid Level: 0.00 m		

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	5.45 m
146 mm	5.45 m	60.00 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 46.15 m	2.30 m
Steel	175 mm	- 46.15 m	5.45 m
Steel (Section 3)	146 mm	- 46.15 m	20.10 m
Steel (Section 2)	146 mm	- 46.15 m	35.10 m
Steel (Section 1)	146 mm	- 46.15 m	50.10 m



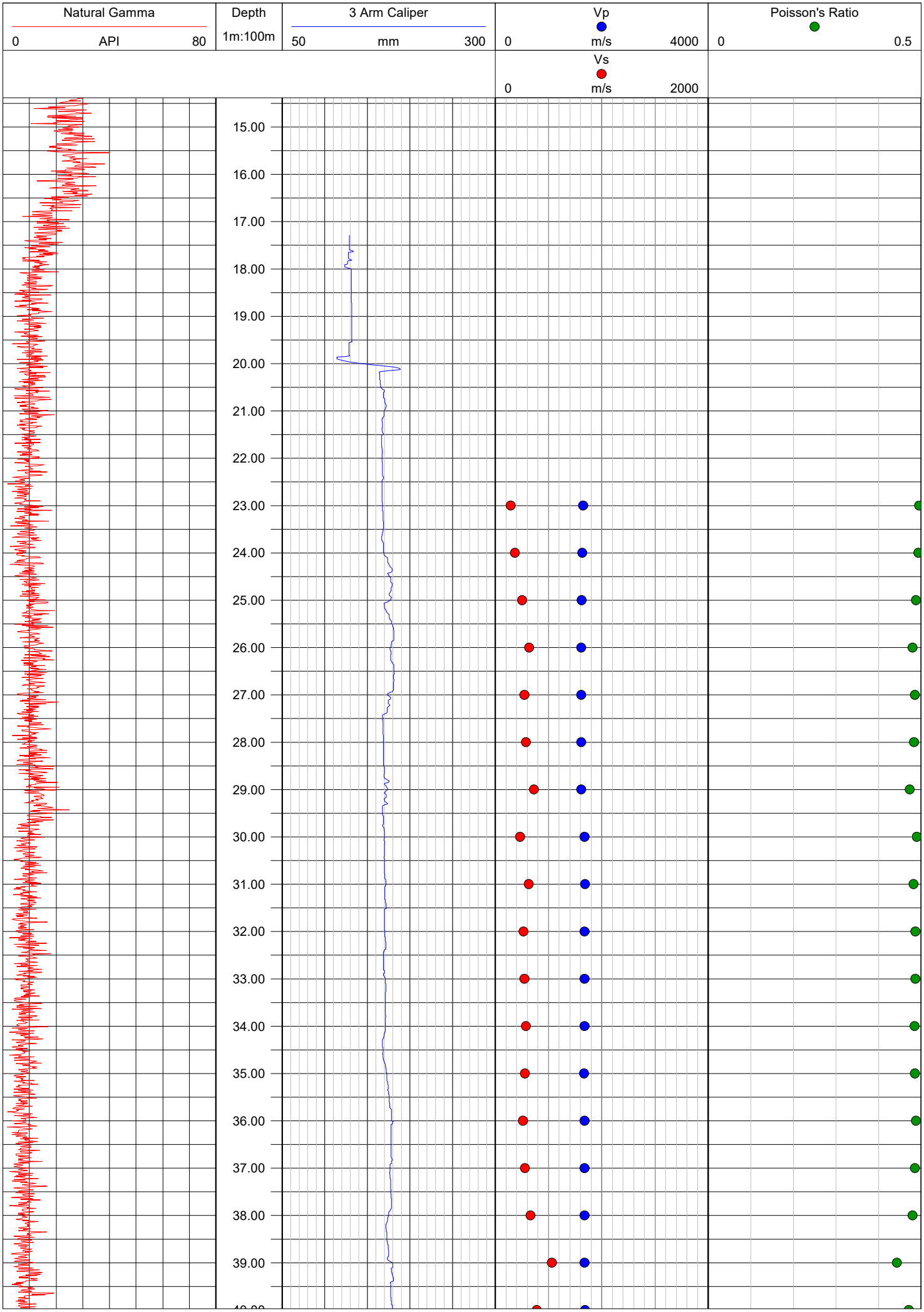

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.248

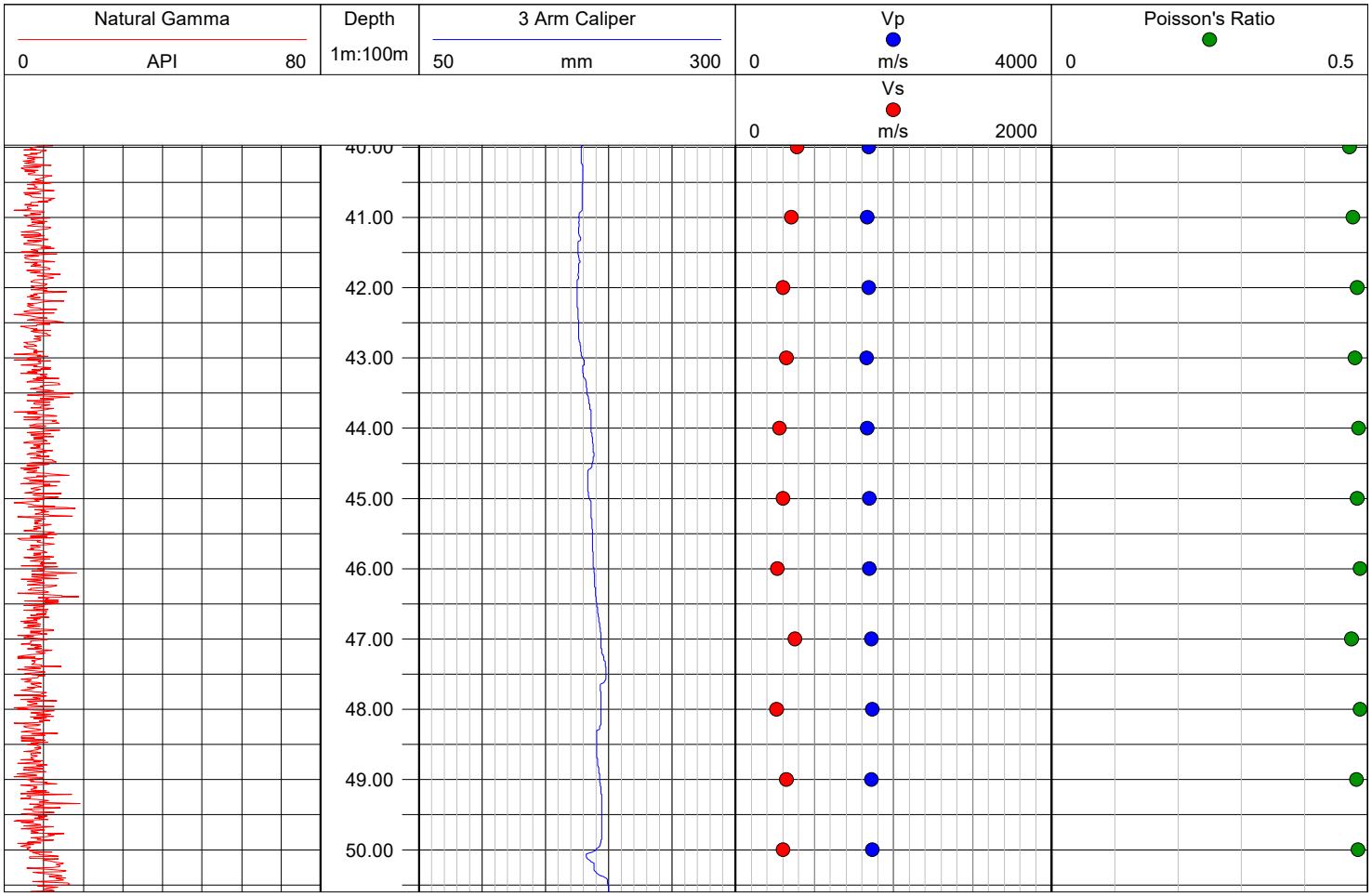

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00

Plate 3.249

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Nick McDonnell	Logging Date: 04/06/2022
Borehole: BH26	Fugro Site Manager: Robert Fraser	
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 297804.74, N: 5842066.43	Grid Reference: UTM Zone 30N Elevation: -27.80 m LAT

Borehole Depth (Drilling):	59.30 m
Borehole Depth (Wireline):	59.10 m
Logging Datum:	Mud Level
Logged Interval:	39.86 m - 59.10 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence & J. Fernandez Processed By: H. Spence

Remarks:

The borehole was planned to be logged in two sections. Borehole collapsed right below casing shoe after 2nd pull to 10.00 m so wireline logging in Section 2 was aborted.

BOREHOLE RECORD (DRILLING)

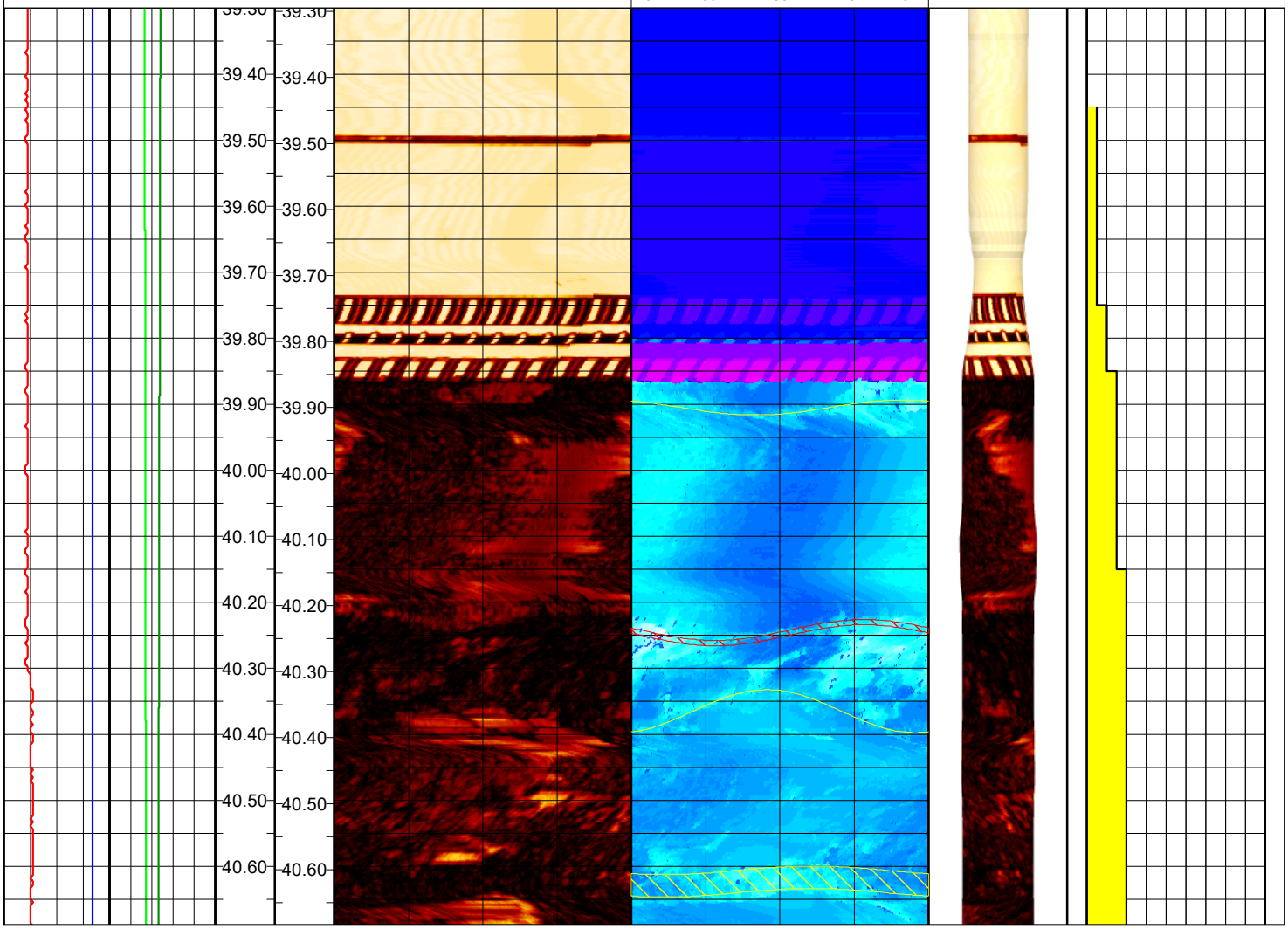
Bit Diameter:	From:	To:
175 mm	0.00 m	6.15 m
146 mm	6.15 m	59.30 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 48.00 m	2.00 m
Steel	175 mm	- 48.00 m	6.15 m
Steel	146 mm	- 48.00 m	40.00 m

Azimuth 0 deg 360 | Easting -1 m 0 | Depth 1m:10m | TVD | Amplitude 0.000817918 (0° 90° 180° 270° 0°) 1100 | Borehole Radius 50 mm 150 (0° 90° 180° 270° 0°) | ABI 3D -0° | Tadpole Log 0 deg 90

Tilt 0 deg 4 | Northing -1 m 0 | Structure Log (0° 90° 180° 270° 0°) | Fractures 0 counts/m 18



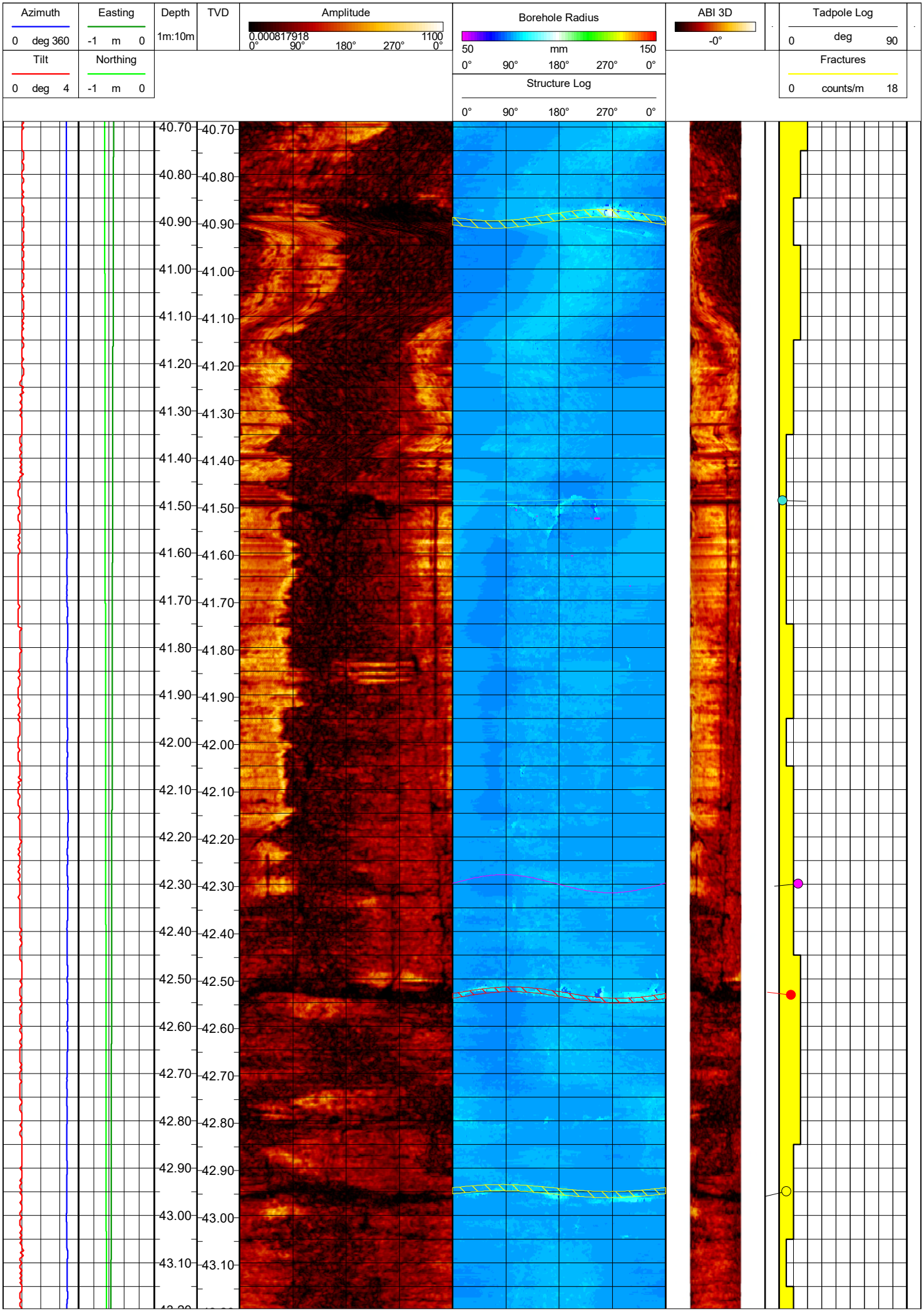

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
40.70
40.80
40.90
41.00
41.10
41.20
41.30
41.40
41.50
41.60
41.70
41.80
41.90
42.00
42.10
42.20
42.30
42.40
42.50
42.60
42.70
42.80
42.90
43.00
43.10

Plate 3.251

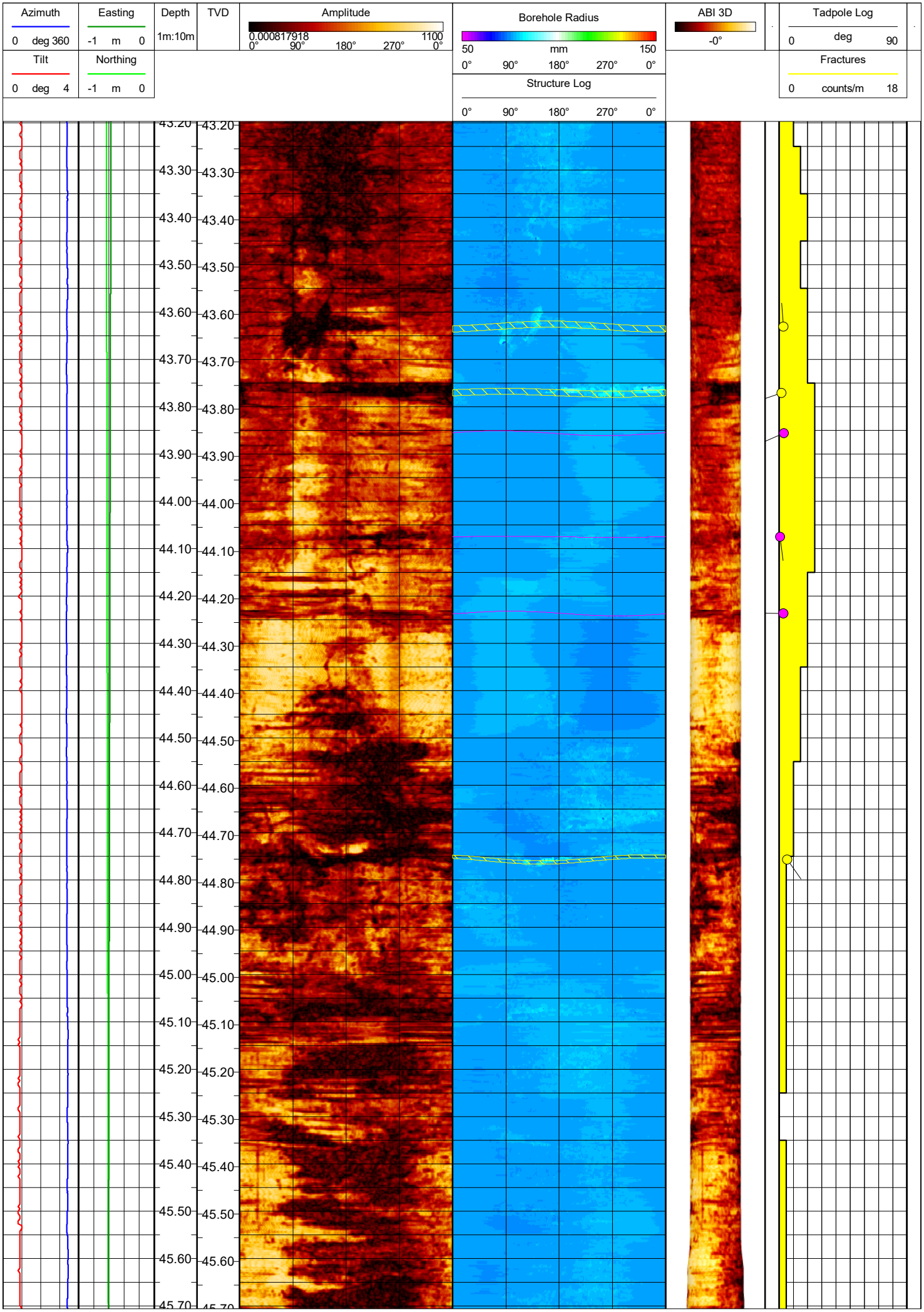

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
43.20
43.30
43.40
43.50
43.60
43.70
43.80
43.90
44.00
44.10
44.20
44.30
44.40
44.50
44.60
44.70
44.80
44.90
45.00
45.10
45.20
45.30
45.40
45.50
45.60

Plate 3.252

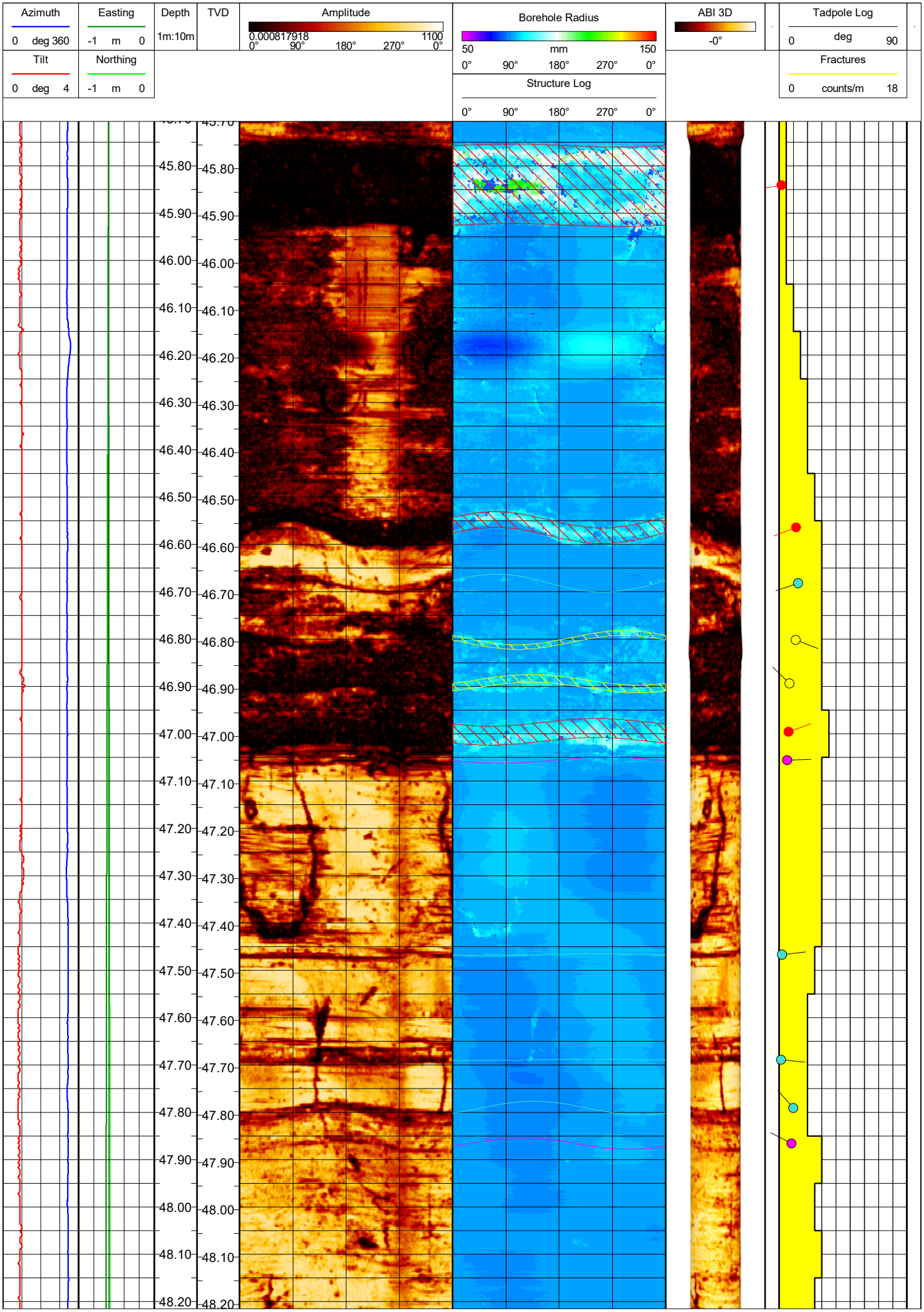

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
45.80
45.90
46.00
46.10
46.20
46.30
46.40
46.50
46.60
46.70
46.80
46.90
47.00
47.10
47.20
47.30
47.40
47.50
47.60
47.70
47.80
47.90
48.00
48.10
48.20

Plate 3.253

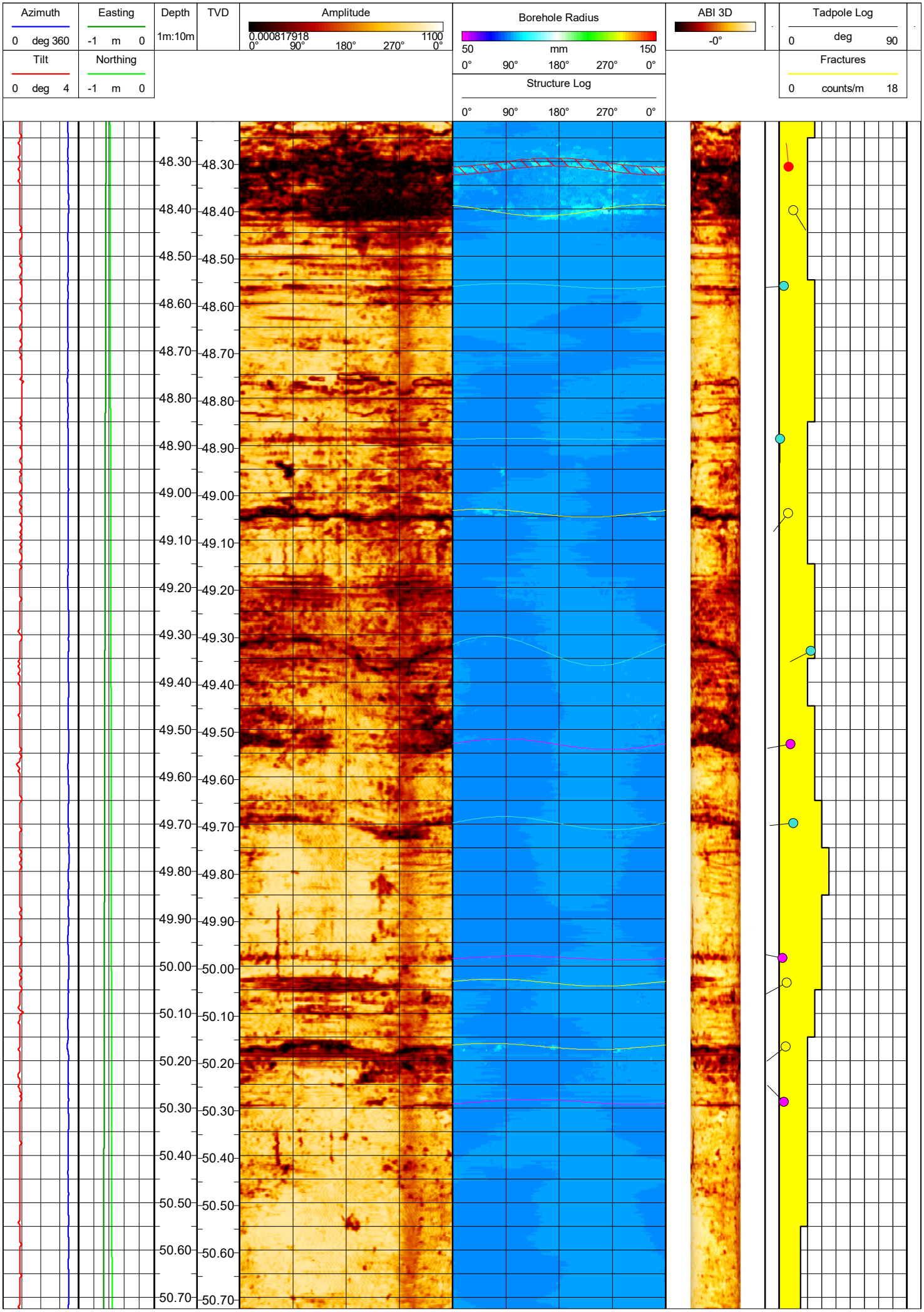

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
48.30
48.40
48.50
48.60
48.70
48.80
48.90
49.00
49.10
49.20
49.30
49.40
49.50
49.60
49.70
49.80
49.90
50.00
50.10
50.20
50.30
50.40
50.50
50.60
50.70

Plate 3.254

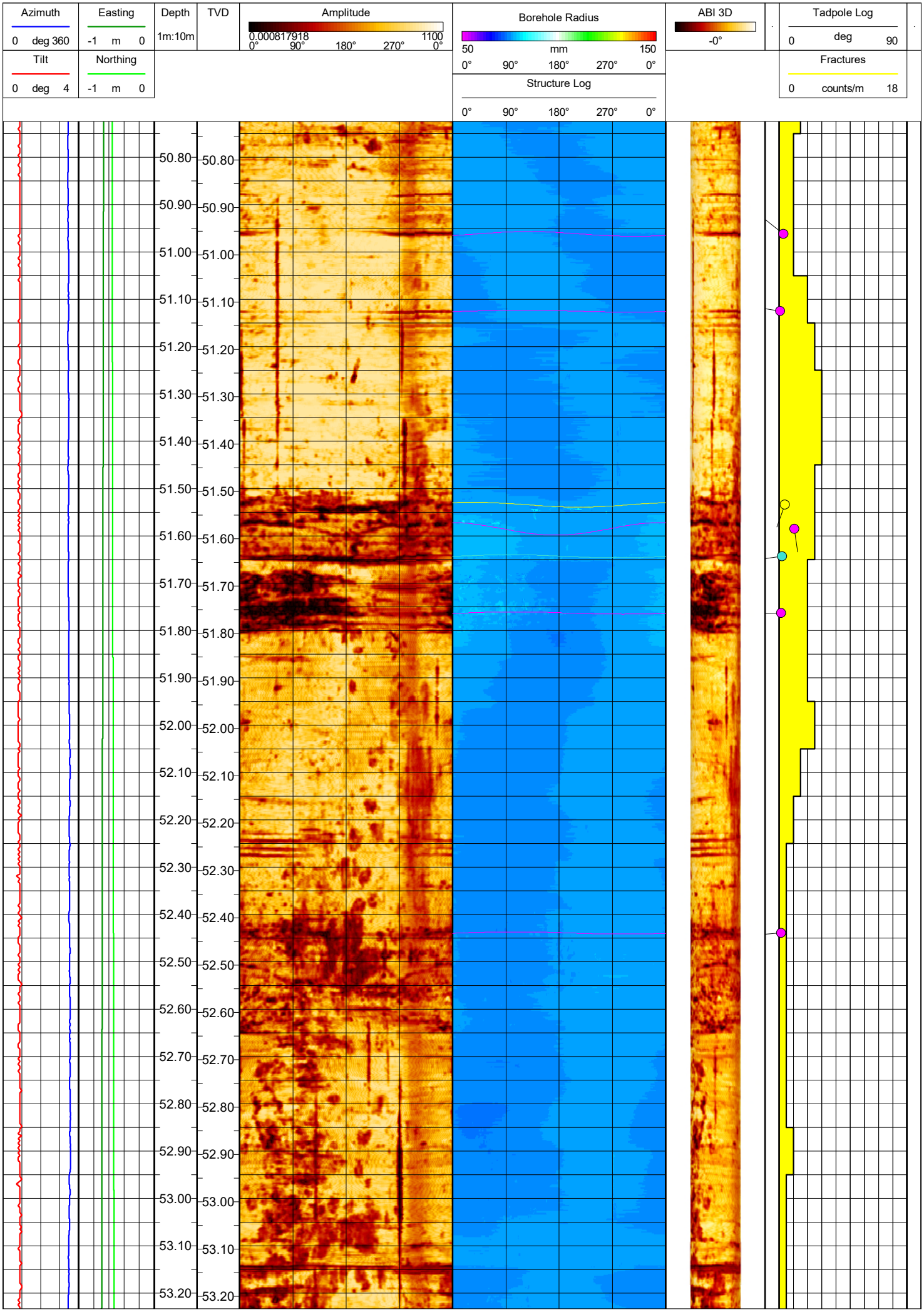

Azimuth
0 deg 360
Easting
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-1 m 0
Fractures
0 counts/m 18
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60
51.70
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50
52.60
52.70
52.80
52.90
53.00
53.10
53.20

Plate 3.255

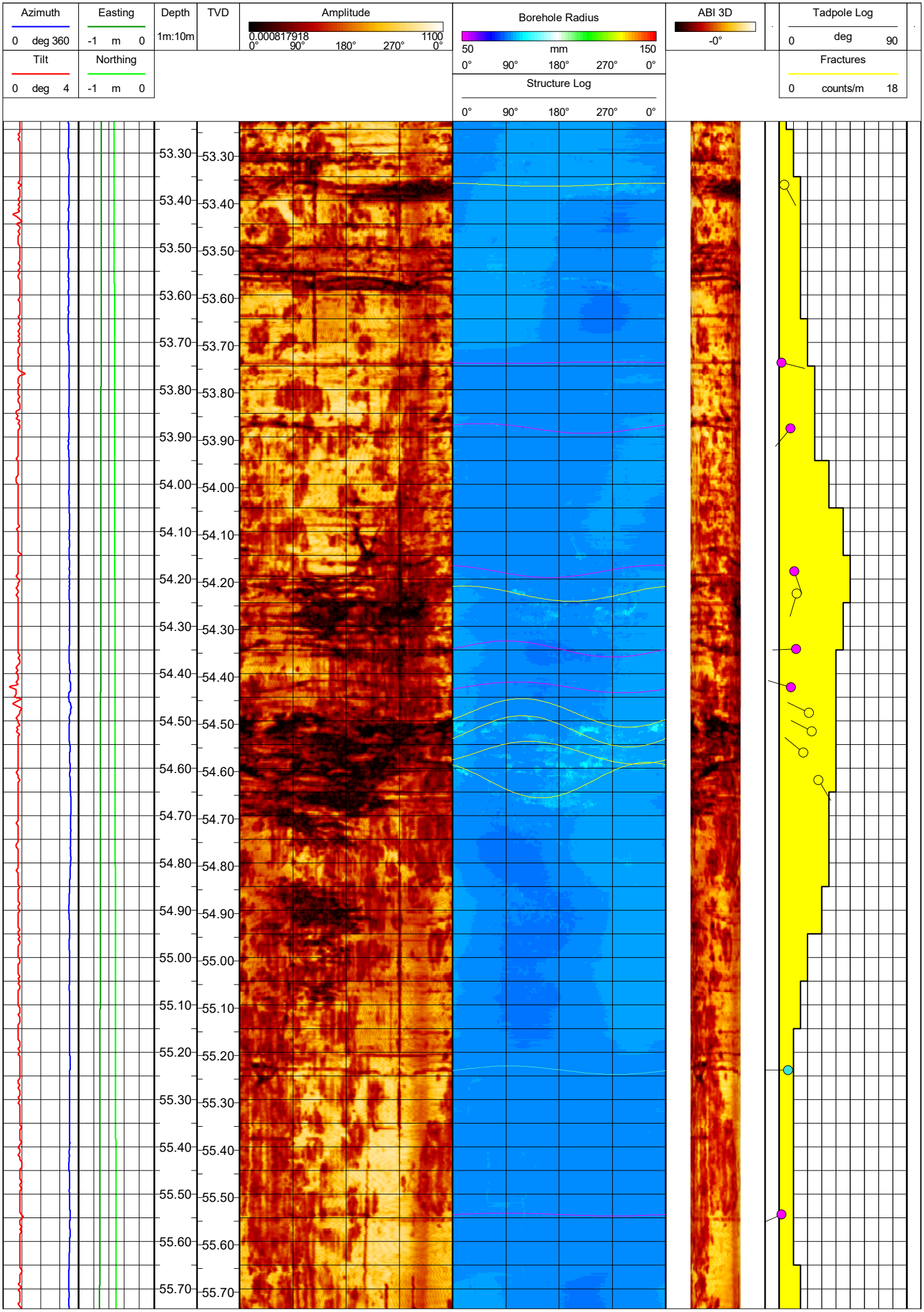

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
53.30
53.40
53.50
53.60
53.70
53.80
53.90
54.00
54.10
54.20
54.30
54.40
54.50
54.60
54.70
54.80
54.90
55.00
55.10
55.20
55.30
55.40
55.50
55.60
55.70

Plate 3.256

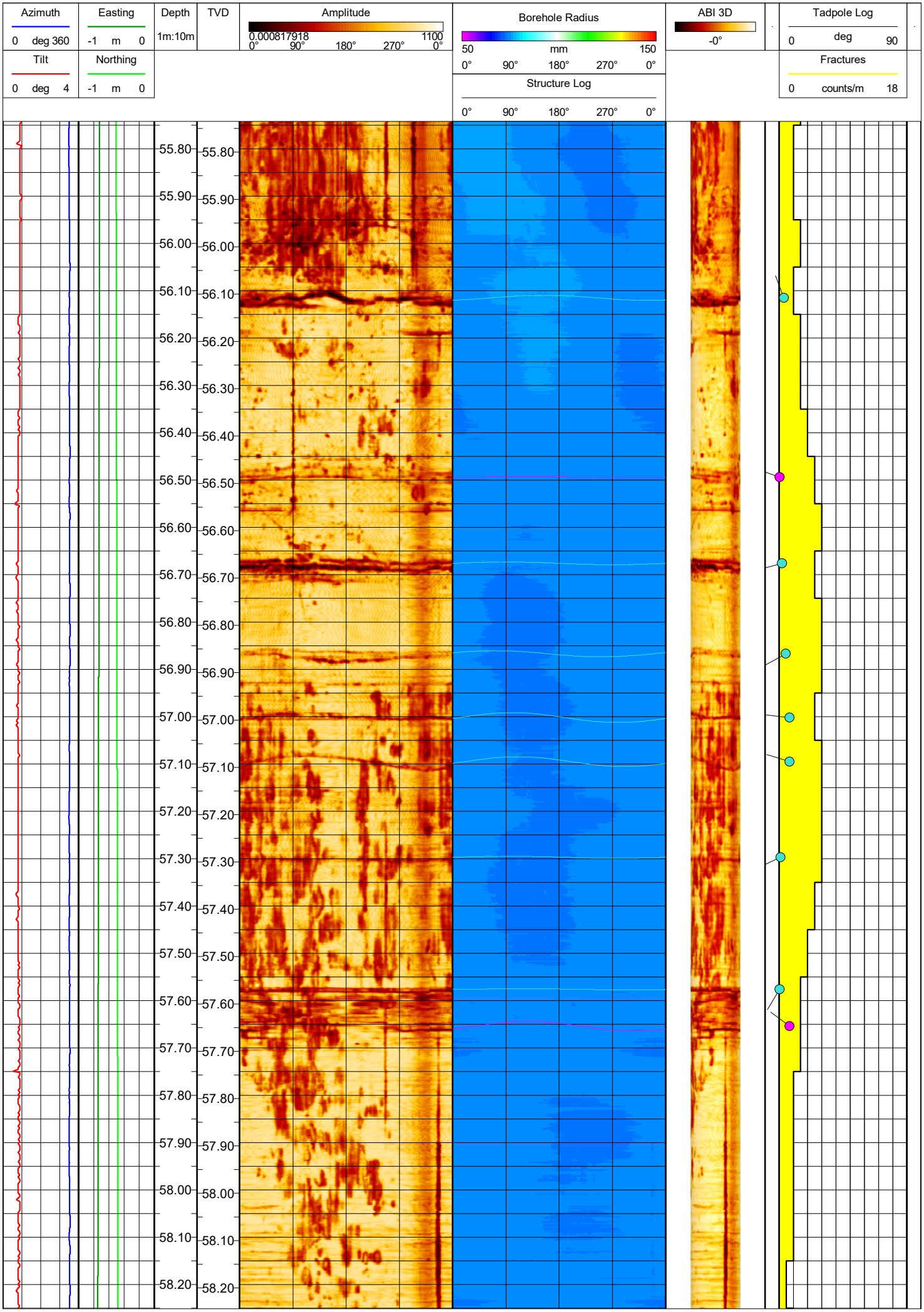

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
-1 m 0
Northing
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
55.80
55.90
56.00
56.10
56.20
56.30
56.40
56.50
56.60
56.70
56.80
56.90
57.00
57.10
57.20
57.30
57.40
57.50
57.60
57.70
57.80
57.90
58.00
58.10
58.20

Plate 3.257

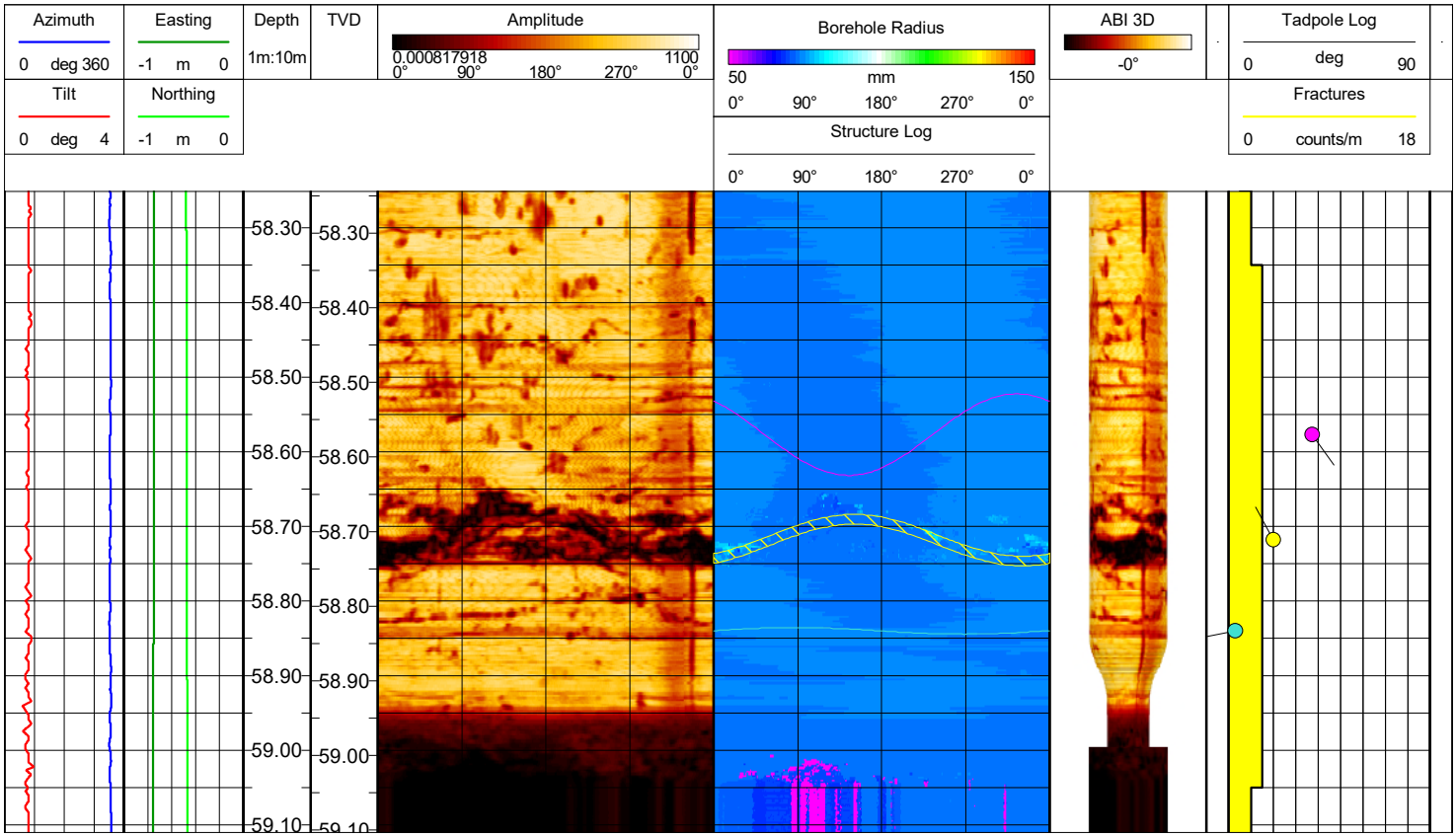

Azimuth
0 deg 360
Easting
-1 m 0
Depth
1m:10m
TVD
Amplitude
0.000817918
1100
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
-1 m 0
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
58.30
58.40
58.50
58.60
58.70
58.80
58.90
59.00
59.10

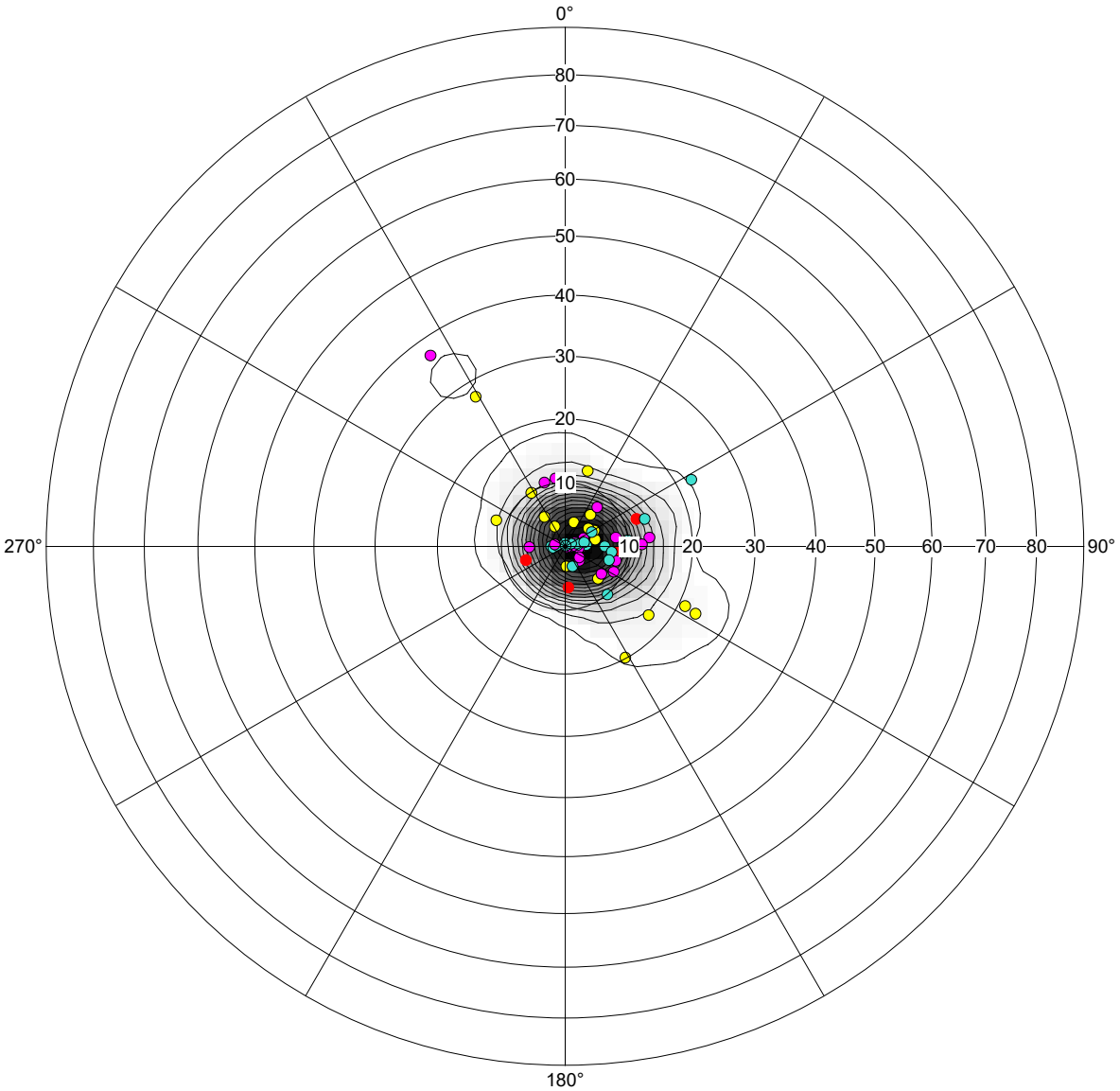
Plate 3.258

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH26**
Log Title:	**Polar Plot**

Tadpole | Sine Wave

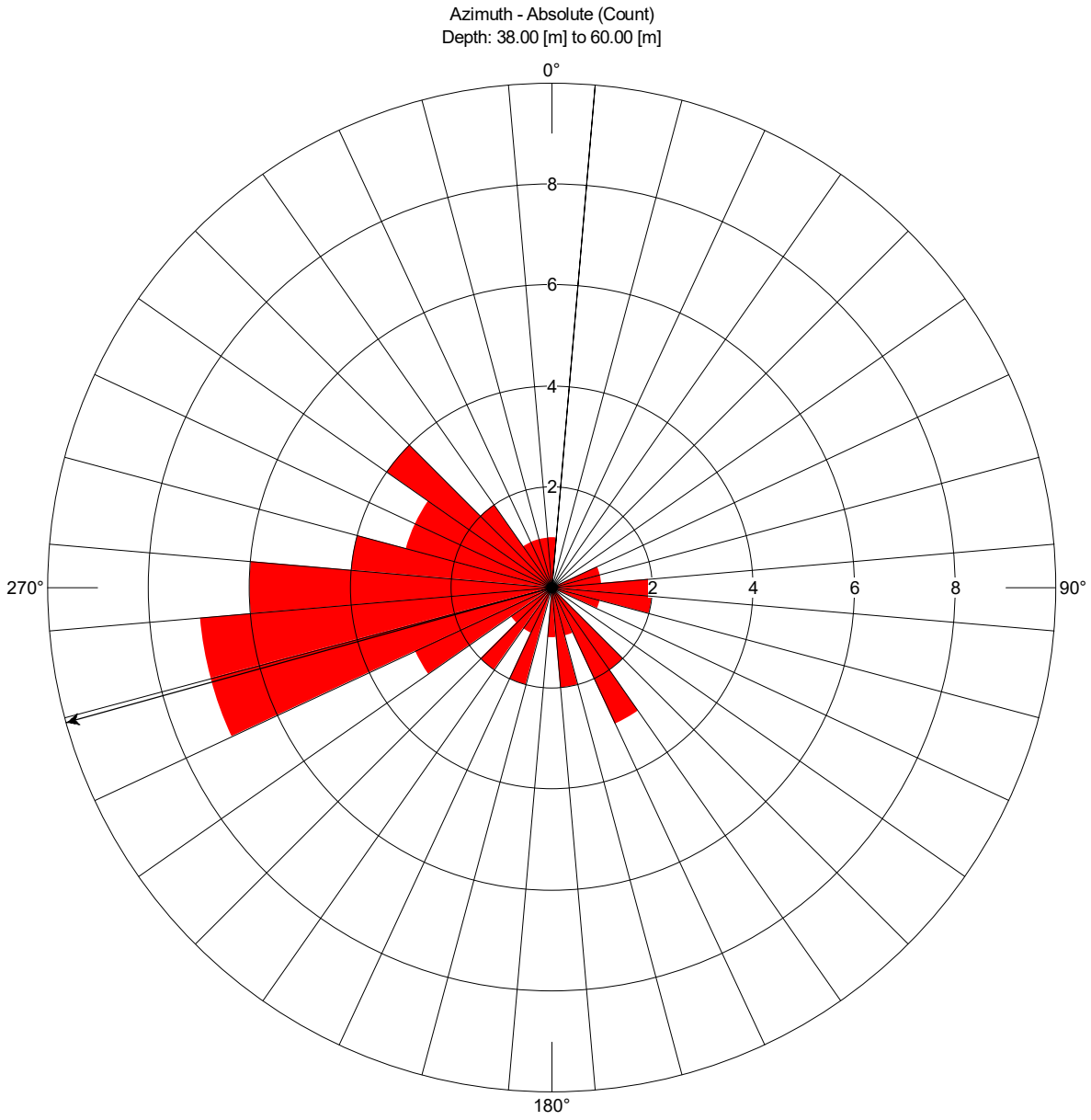
- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Schmidt Plot - LH - FAUS_NEW
Depth: 38.00 [m] to 60.00 [m]



	Counts	Dip[deg]	Azi[deg]
Mean	65	3.23	254.47
	19	4.21	265.40
	23	2.80	230.87
	5	3.24	288.29
	18	3.26	255.23

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH26**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	65.00
Mean (3D):	254.47
Min:	70.54
Max:	355.20

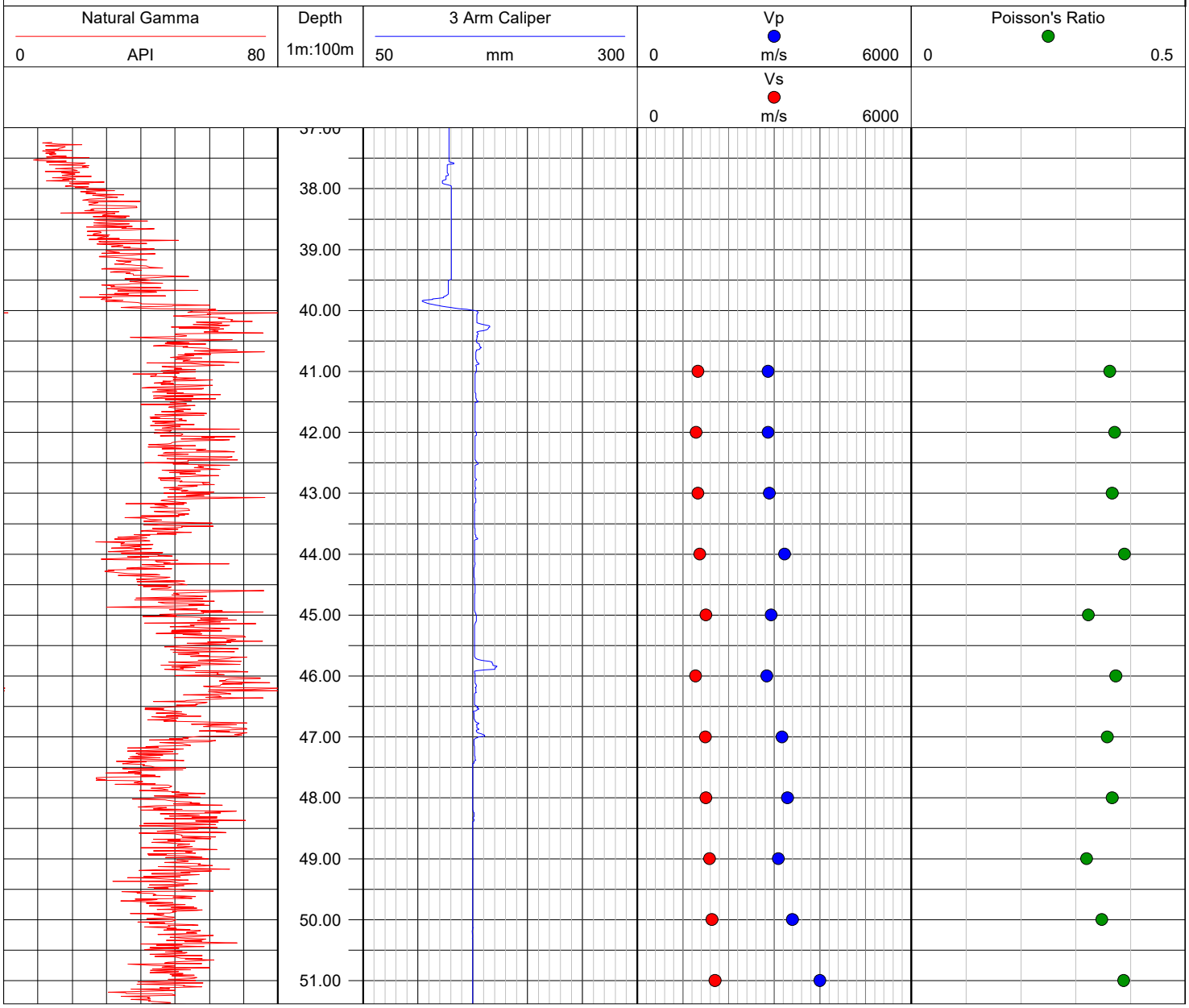
FUGRO	WIRELINE GEOPHYSICAL LOG	Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**	
	Client: Sure Partners Limited	Client Representative: Nick McDonnell	Logging Date:
	Borehole: BH26	Fugro Site Manager: Robert Fraser	04/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 297804.74, N: 5842066.43	Grid Reference: UTM Zone 30N	Elevation: -27.80 m LAT
Borehole Depth (Drilling): 59.30 m		Recorded By: H. Spence & J. Fernandez	Processed By: H. Spence
Borehole Depth (Wireline): 59.10 m		Remarks:	
Logging Datum: Mud Level		The borehole was planned to be logged in two sections. Borehole collapsed right below casing shoe after 2nd pull to 10.00 m so wireline logging in Section 2 was aborted.	
Logged Interval: 37.24 m - 59.10 m			
Fluid Level: 0.00 m			

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	6.15 m
146 mm	6.15 m	59.30 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 48.00 m	2.00 m
Steel	175 mm	- 48.00 m	6.15 m
Steel	146 mm	- 48.00 m	40.00 m



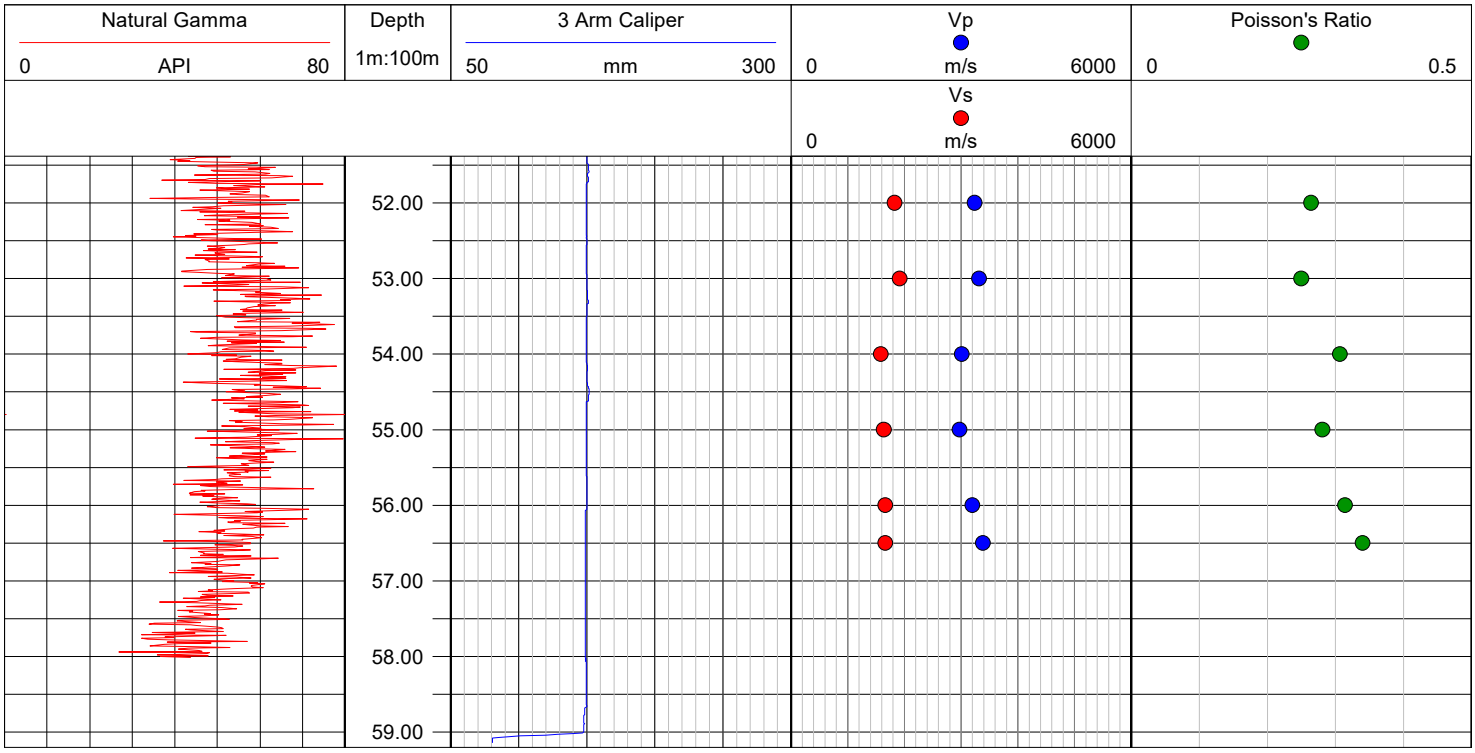

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
6000
Vs
0
m/s
6000
Poisson's Ratio
0
0.5
52.00
53.00
54.00
55.00
56.00
57.00
58.00
59.00

Plate 3.262

WIRELINE GEOPHYSICAL LOG

Type: **Acoustic Borehole Imager Plot**

Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date: 15/06/2022
Borehole: BH28	Fugro Site Manager: Robert Fraser	
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 302479.91, N: 5863159.00	Grid Reference: UTM Zone 30N Elevation: -28.70 m LAT

Borehole Depth (Drilling):	69.50 m
Borehole Depth (Wireline):	69.12 m
Logging Datum:	Mud Level
Logged Interval:	49.61 m - 69.00 m
Fluid Level:	0.00 m

Tadpole / Sine Wave

- Major Fracture / Joint - open
- Minor Fracture / Joint - probably open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary

Recorded By: H. Spence & J. Fernandez Processed By: H. Spence

Remarks:

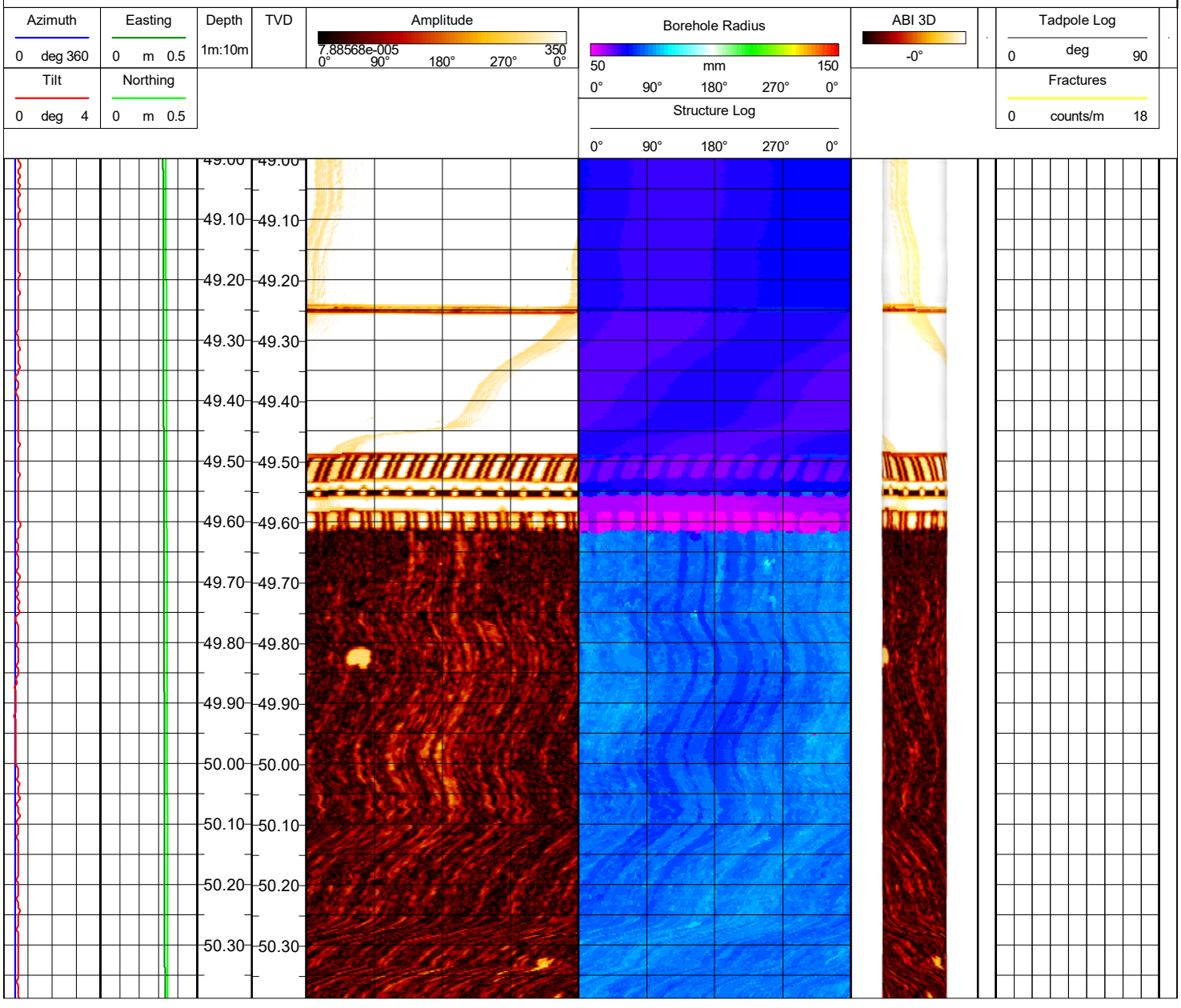
Borehole logged in three sections. ABI logging was aborted in Sections 2 and 3 due to poor expected data quality related to soft sediments and borehole stability concerns.

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	14.60 m
146 mm	14.60 m	69.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 45.01 m	2.20 m
Steel	175 mm	- 45.01 m	14.60 m
Steel (Section 3)	146 mm	- 45.01 m	16.30 m
Steel (Section 2)	146 mm	- 45.01 m	38.90 m
Steel (Section 1)	146 mm	- 45.01 m	49.50 m



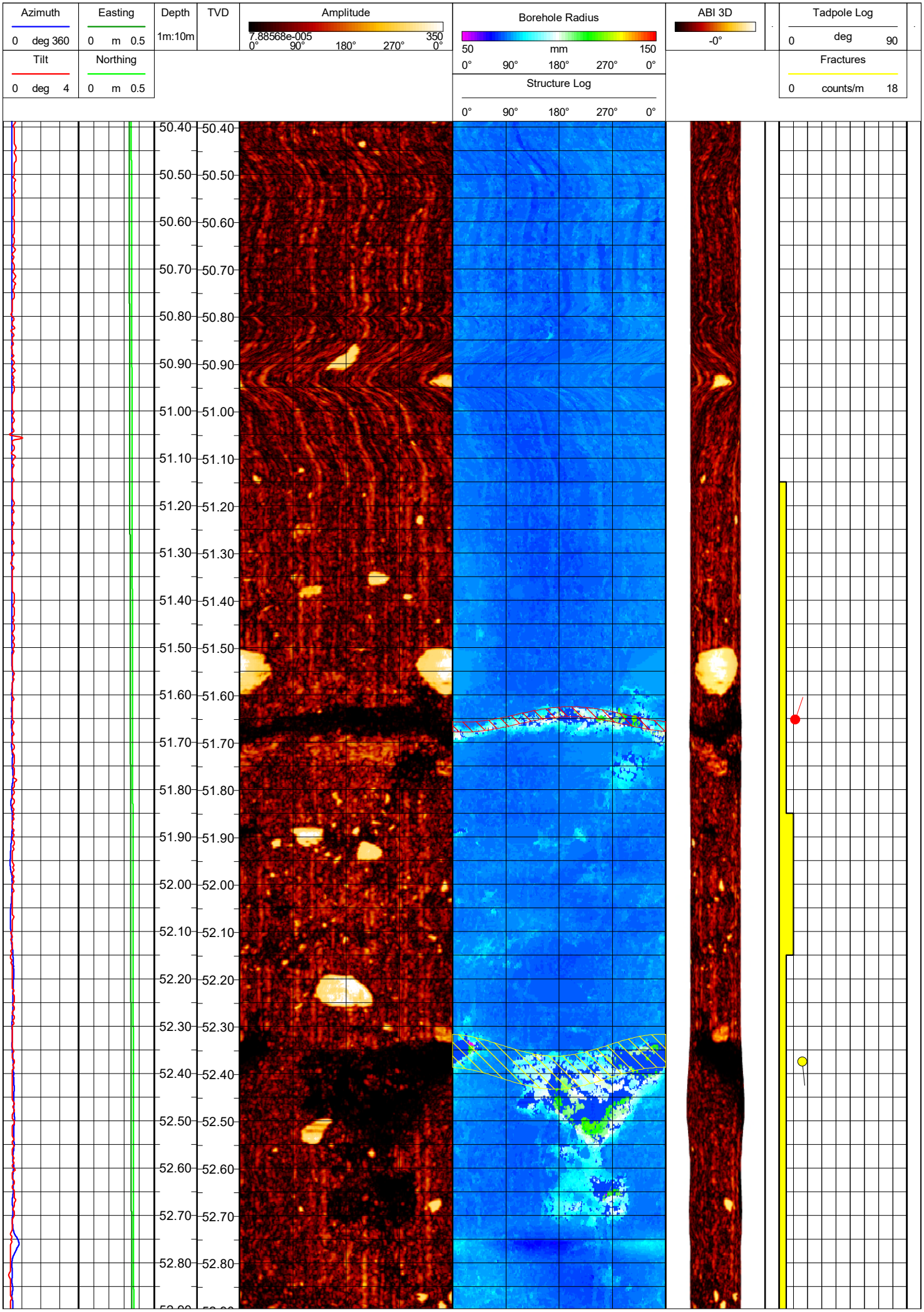

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
50.40
50.50
50.60
50.70
50.80
50.90
51.00
51.10
51.20
51.30
51.40
51.50
51.60
51.70
51.80
51.90
52.00
52.10
52.20
52.30
52.40
52.50
52.60
52.70
52.80

Plate 3.264

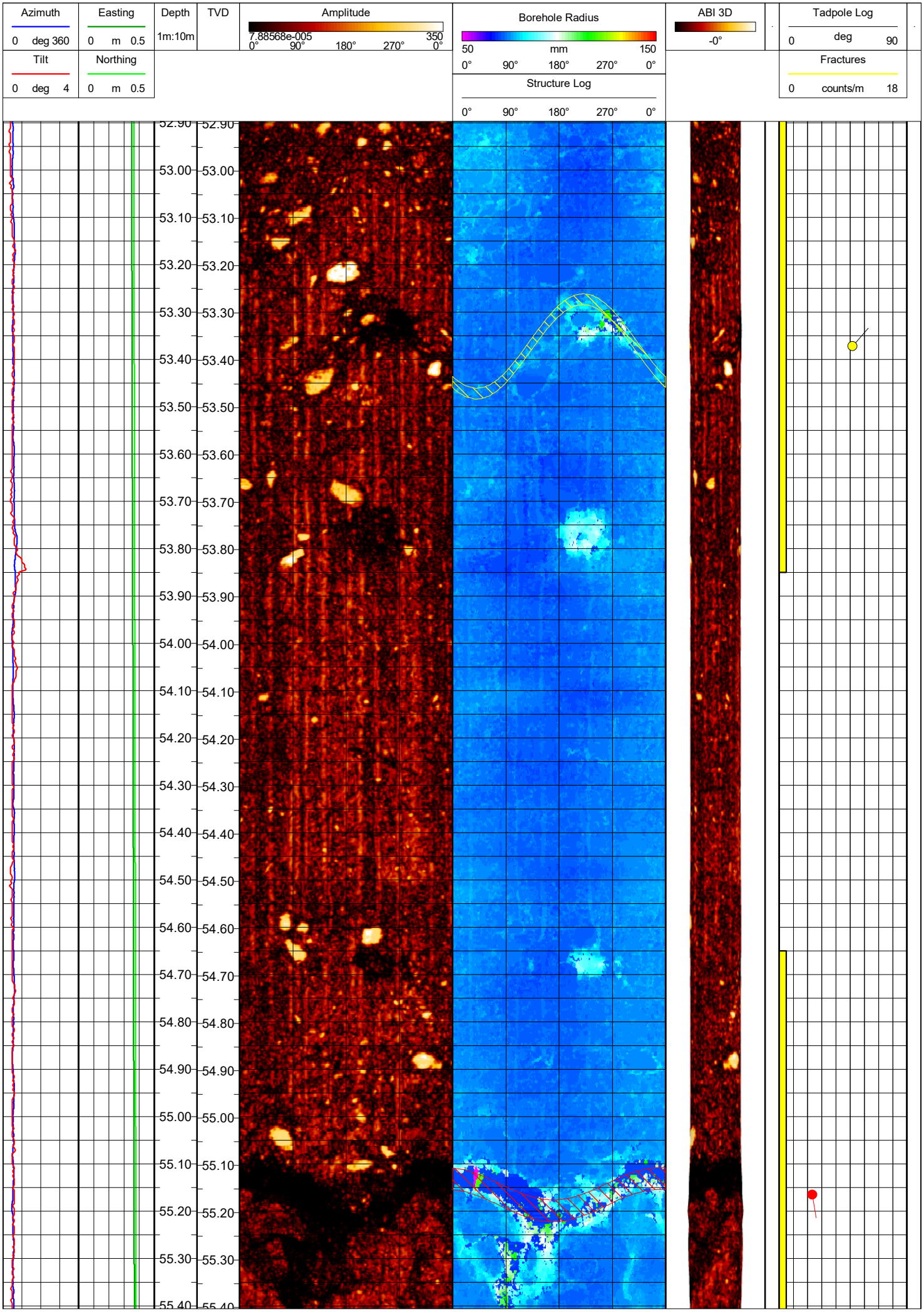

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
52.90
53.00
53.10
53.20
53.30
53.40
53.50
53.60
53.70
53.80
53.90
54.00
54.10
54.20
54.30
54.40
54.50
54.60
54.70
54.80
54.90
55.00
55.10
55.20
55.30
55.40

Plate 3.265

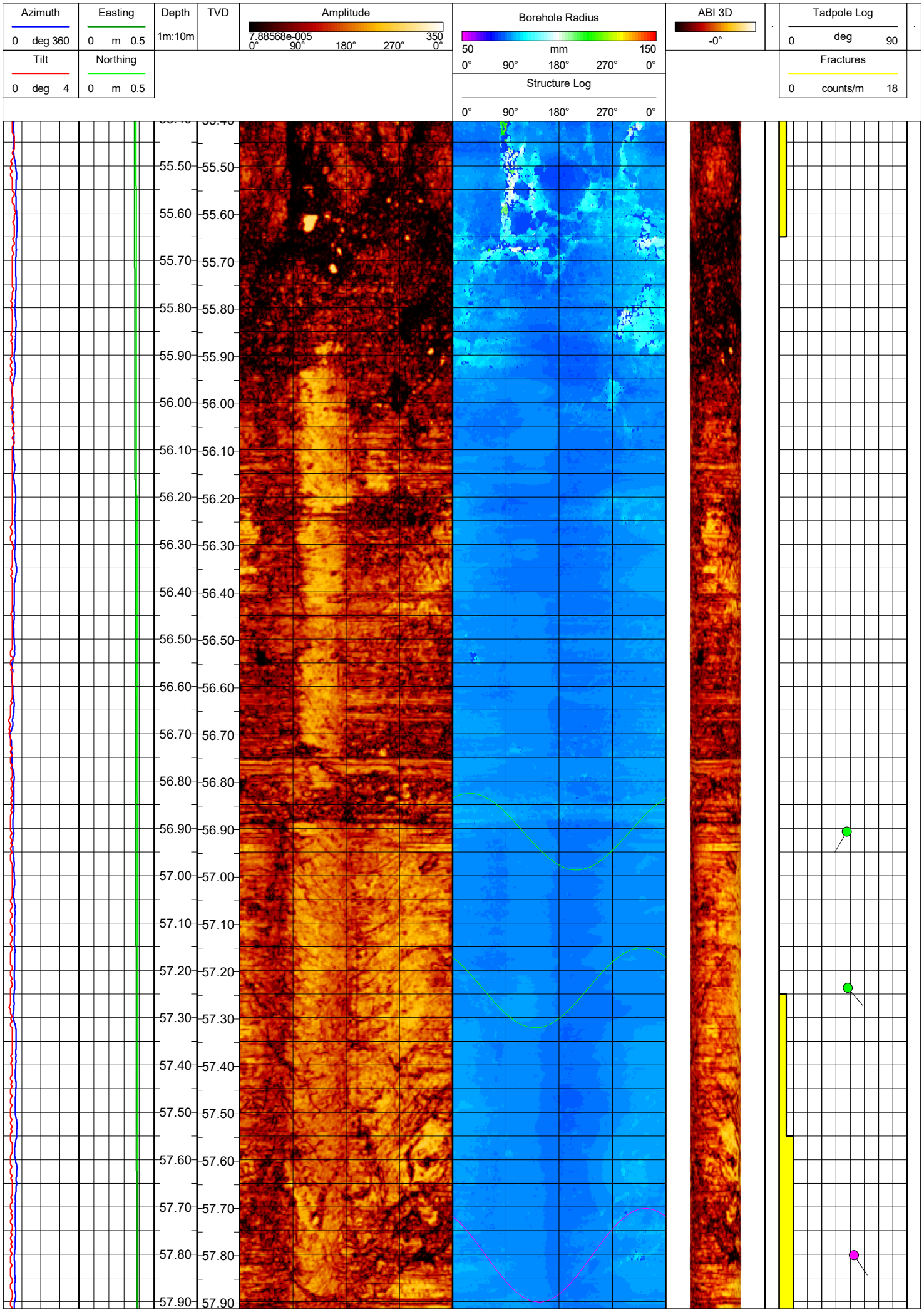

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
55.50
55.60
55.70
55.80
55.90
56.00
56.10
56.20
56.30
56.40
56.50
56.60
56.70
56.80
56.90
57.00
57.10
57.20
57.30
57.40
57.50
57.60
57.70
57.80
57.90

Plate 3.266

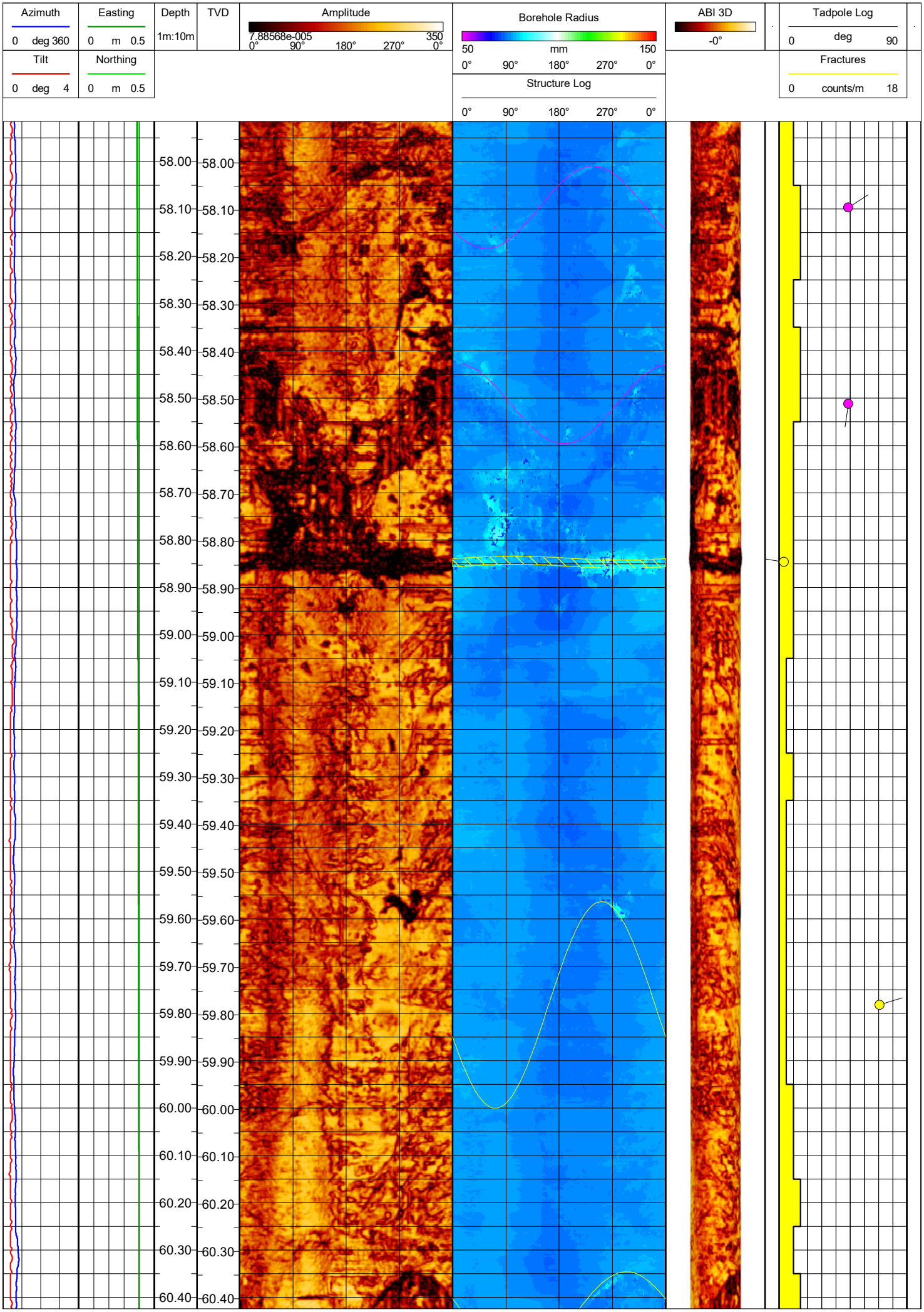

Azimuth
0 deg 360
Easting
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Fractures
0 counts/m 18
58.00
58.10
58.20
58.30
58.40
58.50
58.60
58.70
58.80
58.90
59.00
59.10
59.20
59.30
59.40
59.50
59.60
59.70
59.80
59.90
60.00
60.10
60.20
60.30
60.40

Plate 3.267

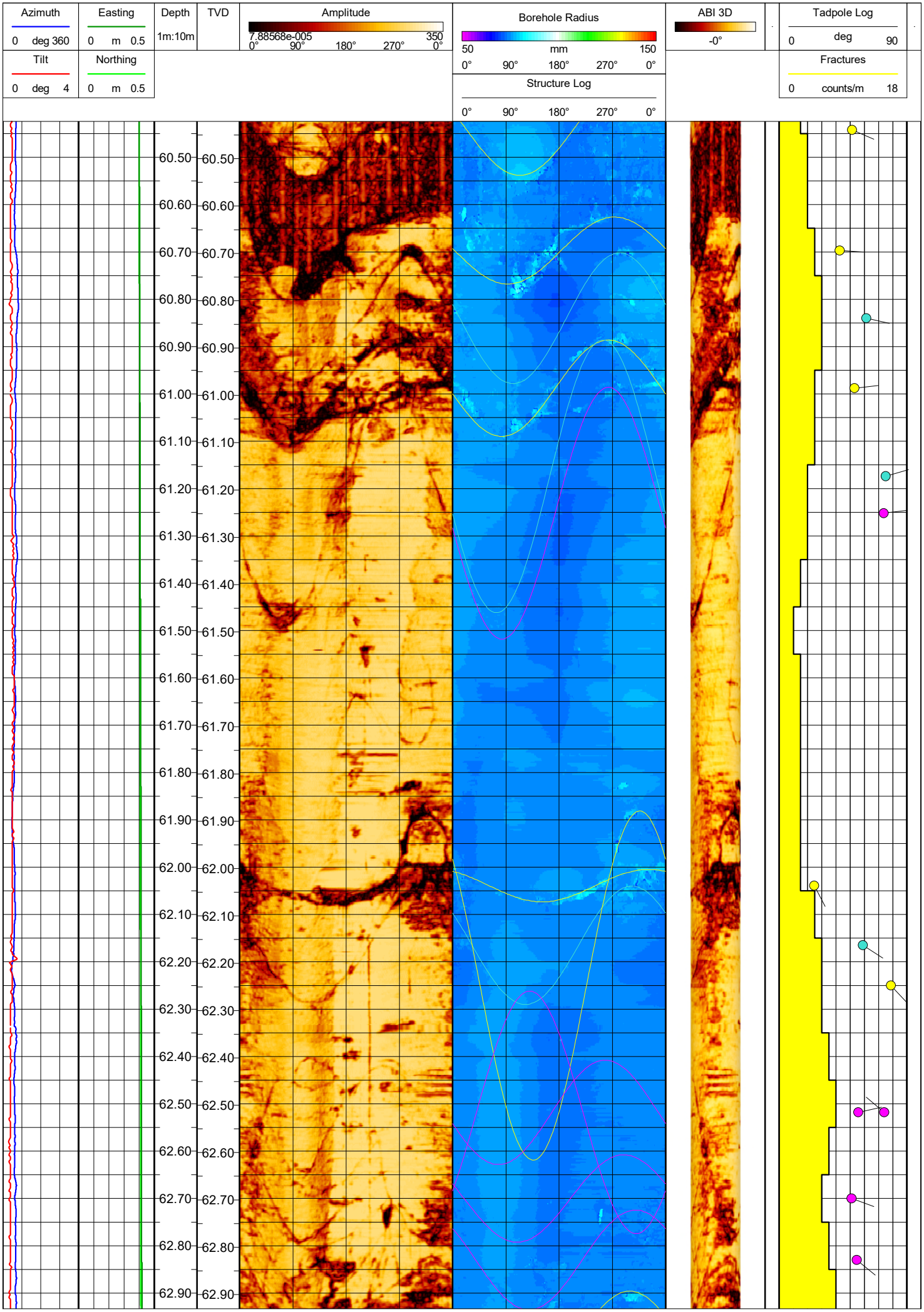

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
60.50
60.60
60.70
60.80
60.90
61.00
61.10
61.20
61.30
61.40
61.50
61.60
61.70
61.80
61.90
62.00
62.10
62.20
62.30
62.40
62.50
62.60
62.70
62.80
62.90

Plate 3.268

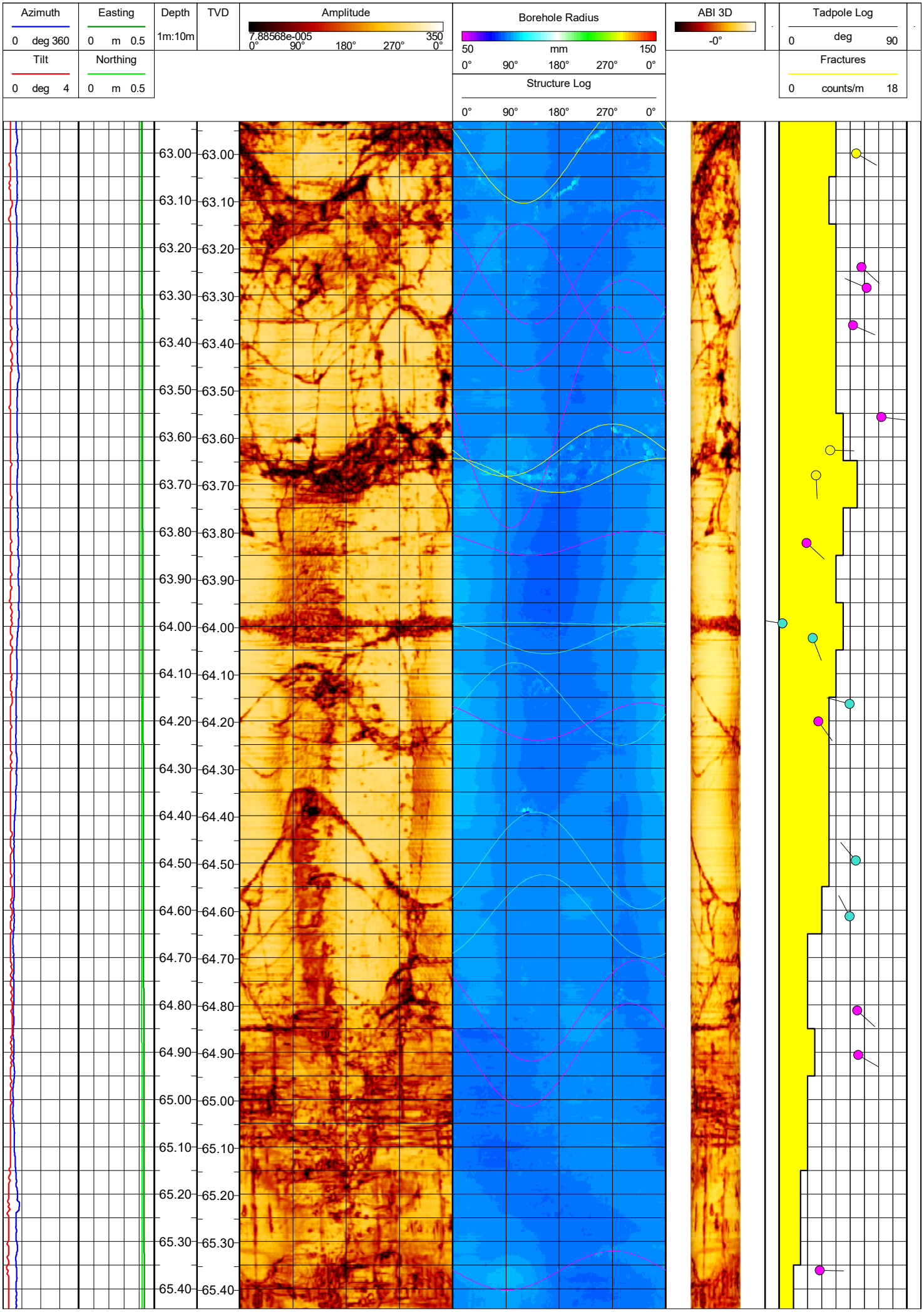

Azimuth
0 deg 360
Tilt
0 deg 4
Easting
0 m 0.5
Northing
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
Structure Log
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Fractures
0 counts/m 18
63.00
63.10
63.20
63.30
63.40
63.50
63.60
63.70
63.80
63.90
64.00
64.10
64.20
64.30
64.40
64.50
64.60
64.70
64.80
64.90
65.00
65.10
65.20
65.30
65.40

Plate 3.269

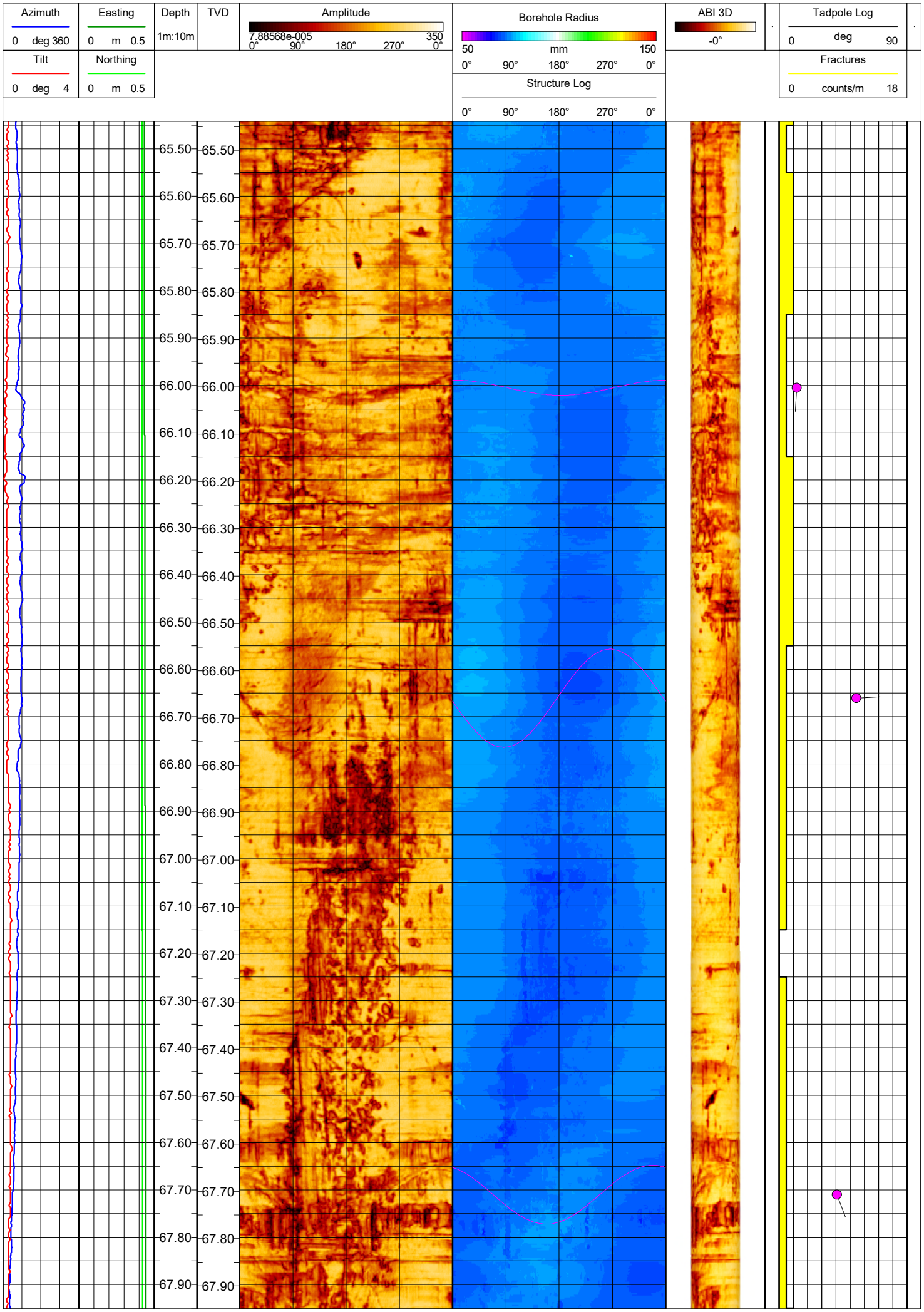

Azimuth
0 deg 360
Easting
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
65.50
65.60
65.70
65.80
65.90
66.00
66.10
66.20
66.30
66.40
66.50
66.60
66.70
66.80
66.90
67.00
67.10
67.20
67.30
67.40
67.50
67.60
67.70
67.80
67.90

Plate 3.270

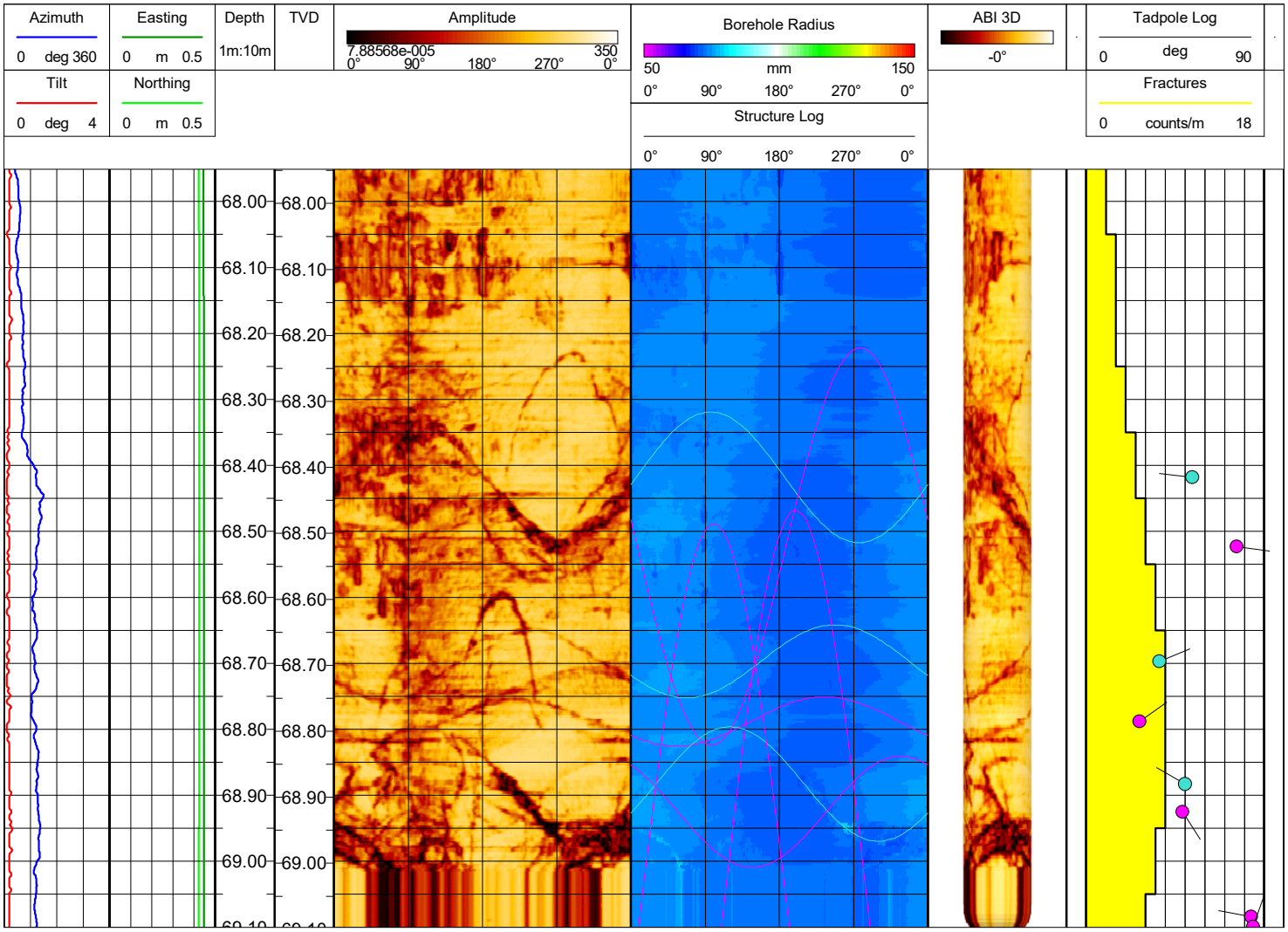
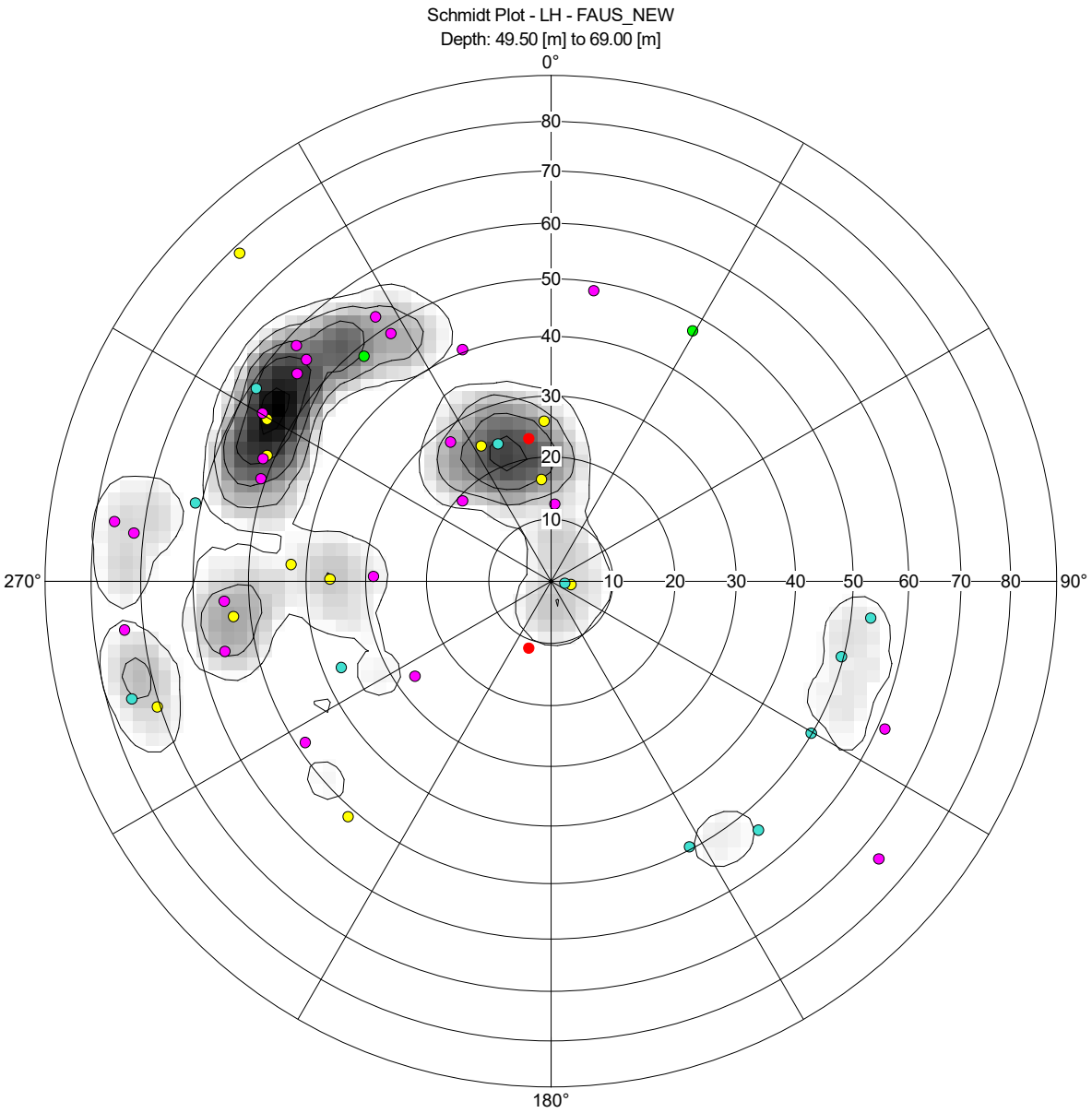

Azimuth
0 deg 360
Easting
0 m 0.5
Depth
1m:10m
TVD
Amplitude
7.88568e-005
350
0° 90° 180° 270° 0°
Borehole Radius
50 mm 150
0° 90° 180° 270° 0°
ABI 3D
-0°
Tadpole Log
0 deg 90
Tilt
0 deg 4
Northing
0 m 0.5
Structure Log
0° 90° 180° 270° 0°
Fractures
0 counts/m 18
68.00
68.10
68.20
68.30
68.40
68.50
68.60
68.70
68.80
68.90
69.00

Plate 3.271

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH28**
Log Title:	**Polar Plot**

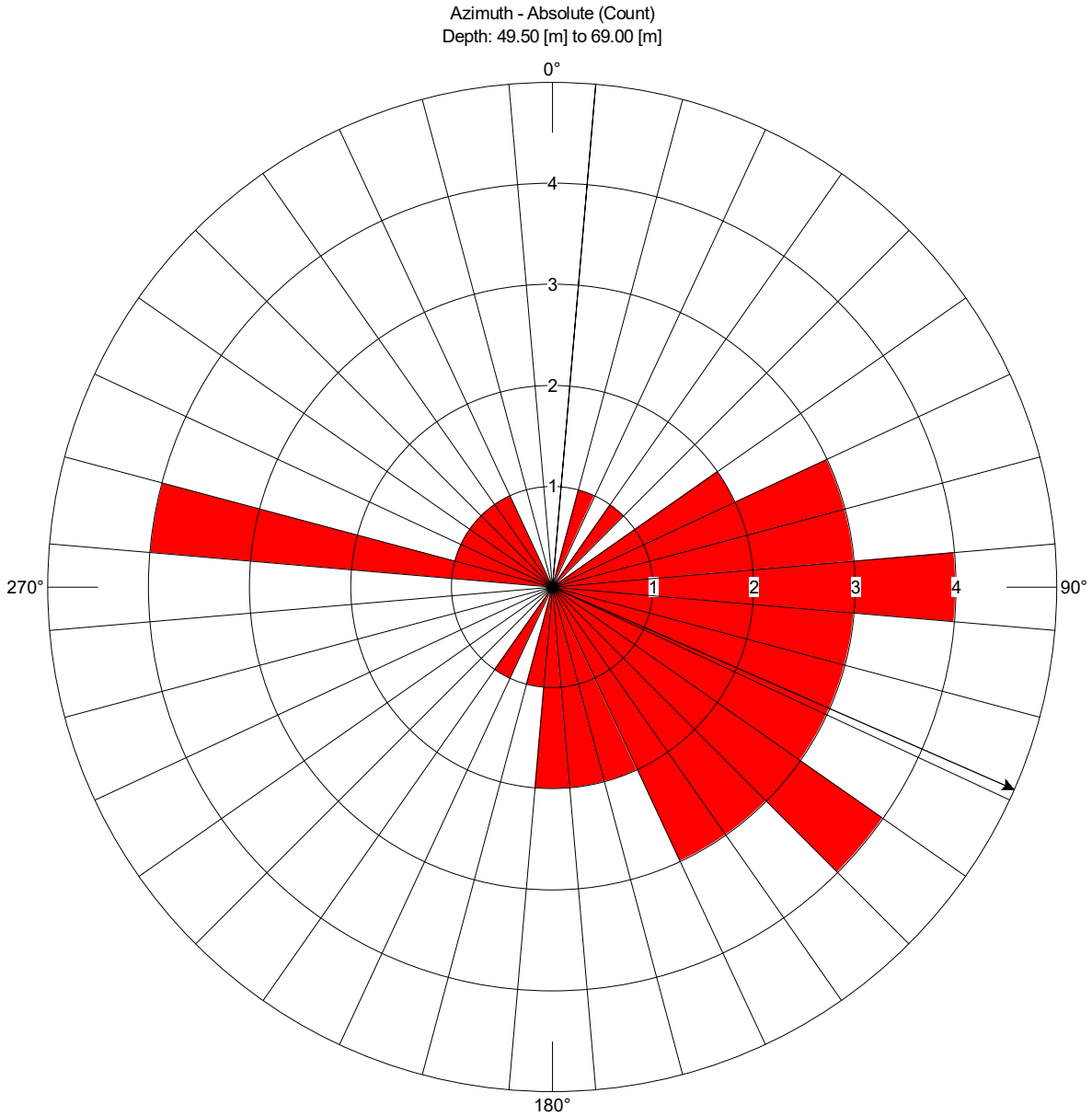
Tadpole | Sine Wave

- Major Fracture / Joint - Open
- Minor Fracture / Joint - Open
- Fracture / Joint - not further evaluable
- Fracture / Joint - infilled
- Bedding / Banding / Foliation / Lamination
- Unclassified
- Lithological boundary



	Counts	Dip[deg]	Azi[deg]
Mean	50	39.41	113.70
●	2	7.17	148.80
●	12	35.69	105.91
●	2	42.33	174.69
●	23	46.79	115.77
●	11	40.99	299.45

Client:	Sure Partners Limited
Project:	Arklow Bank Wind Park Geotechnical Borehole Survey 2022
Borehole:	**BH28**
Log Title:	**Rose Plot**



Components:	Azimuth
Counts:	50.00
Mean (3D):	113.70
Min:	18.55
Max:	332.42

WIRELINE GEOPHYSICAL LOG

Type: **Natural Gamma, 3 Arm Caliper and P&S Logger Plot**

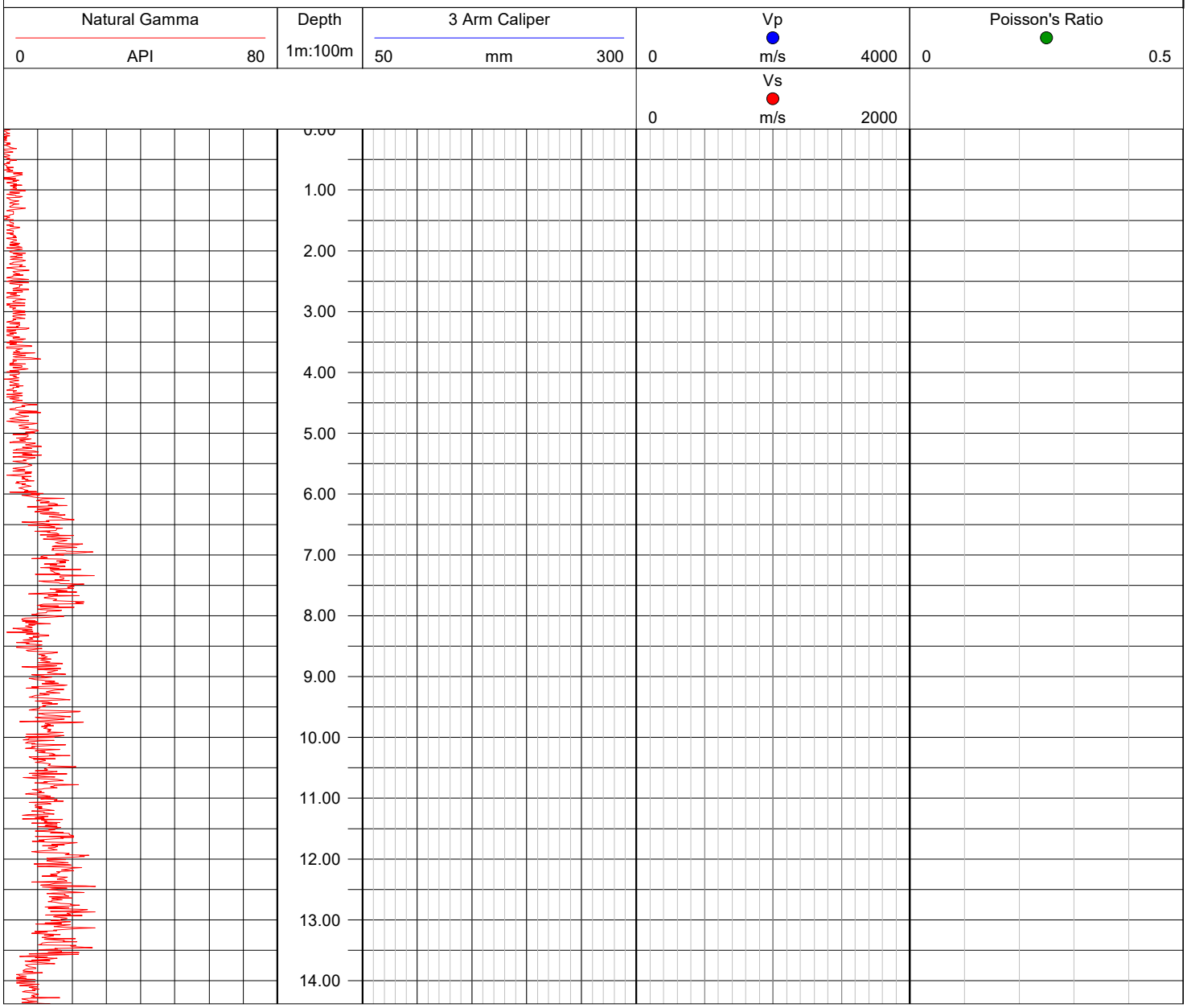
Client: Sure Partners Limited	Client Representative: Nick McDonnel	Logging Date:
Borehole: BH28	Fugro Site Manager: Robert Fraser	15/06/2022
Project No.: F186642	Project Title: Arklow Bank Wind Park Geotechnical Borehole Survey 2022	Log Approved by: B. Rigler
Country: United Kingdom	Position: E: 302479.91, N: 5863159.00	Grid Reference: UTM Zone 30N Elevation: -28.70 m LAT
Borehole Depth (Drilling): 69.50 m	Recorded By: H. Spence & J. Fernandez	Processed By: H. Spence
Borehole Depth (Wireline): 69.12 m	Remarks:	
Logging Datum: Mud Level	Borehole logged in three sections. No PS Logger data available in Section 3 as borehole collapsed at 22.46 m. Natural gamma readings were taken in casing above 49.50 m.	
Logged Interval: 0.00 m - 69.12 m		
Fluid Level: 0.00 m		

BOREHOLE RECORD (DRILLING)

Bit Diameter:	From:	To:
175 mm	0.00 m	14.60 m
146 mm	14.60 m	69.50 m

CASING RECORD (DRILLING)

Type:	Size:	From:	To:
Steel (Conductor)	450 mm	- 45.01 m	2.20 m
Steel	175 mm	- 45.01 m	14.60 m
Steel (Section 3)	146 mm	- 45.01 m	16.30 m
Steel (Section 2)	146 mm	- 45.01 m	38.90 m
Steel (Section 1)	146 mm	- 45.01 m	49.50 m



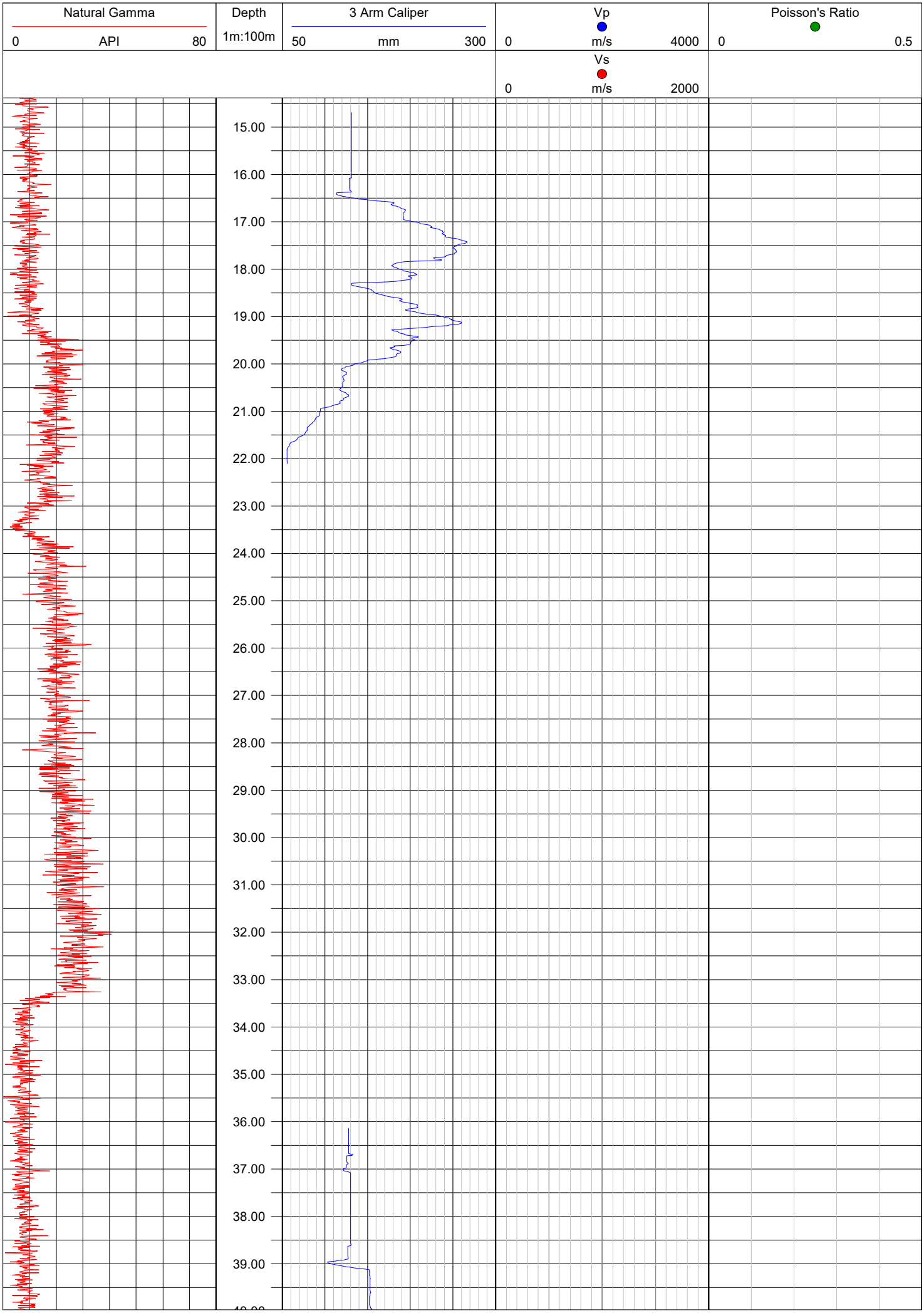

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
24.00
25.00
26.00
27.00
28.00
29.00
30.00
31.00
32.00
33.00
34.00
35.00
36.00
37.00
38.00
39.00

Plate 3.275

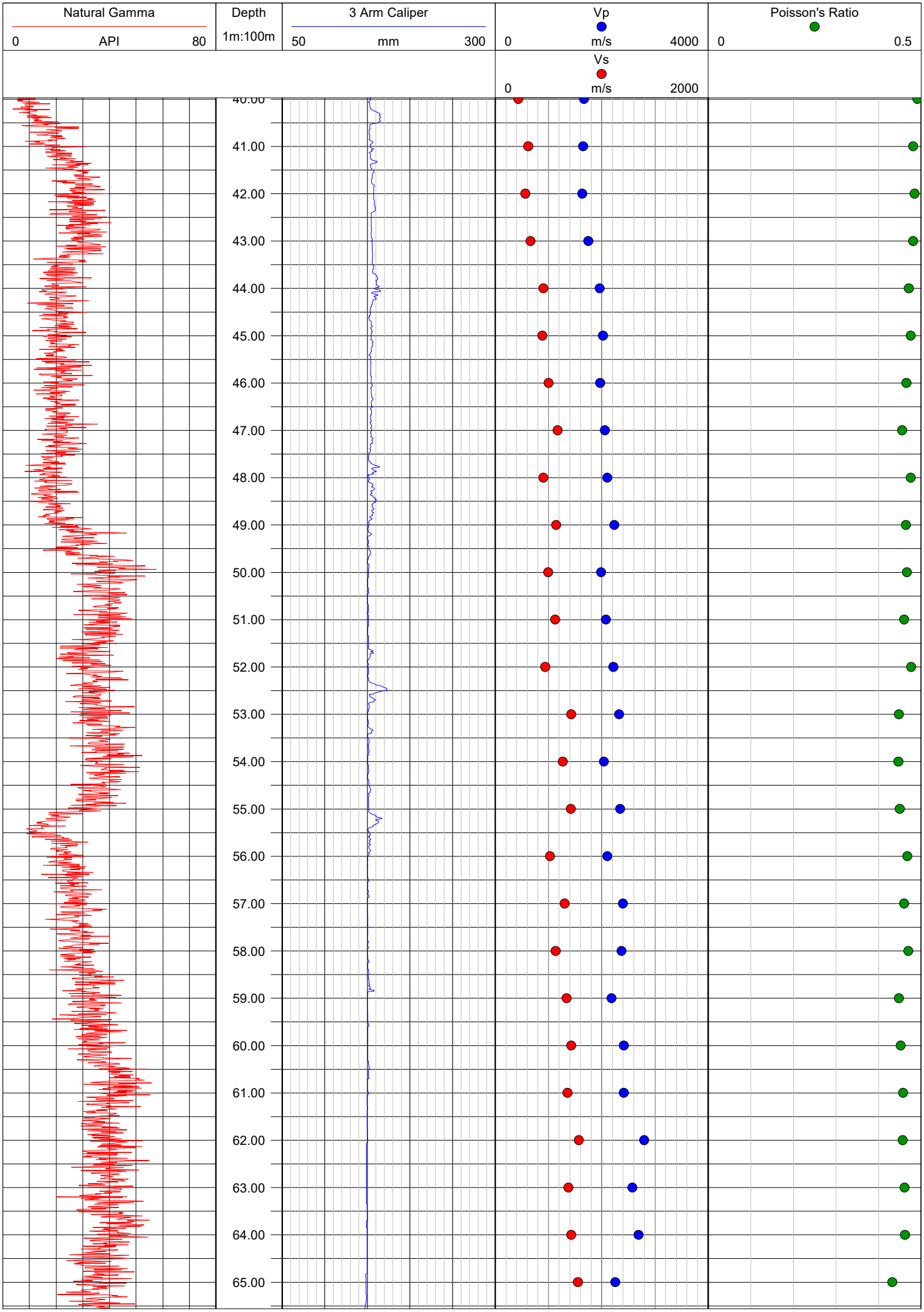
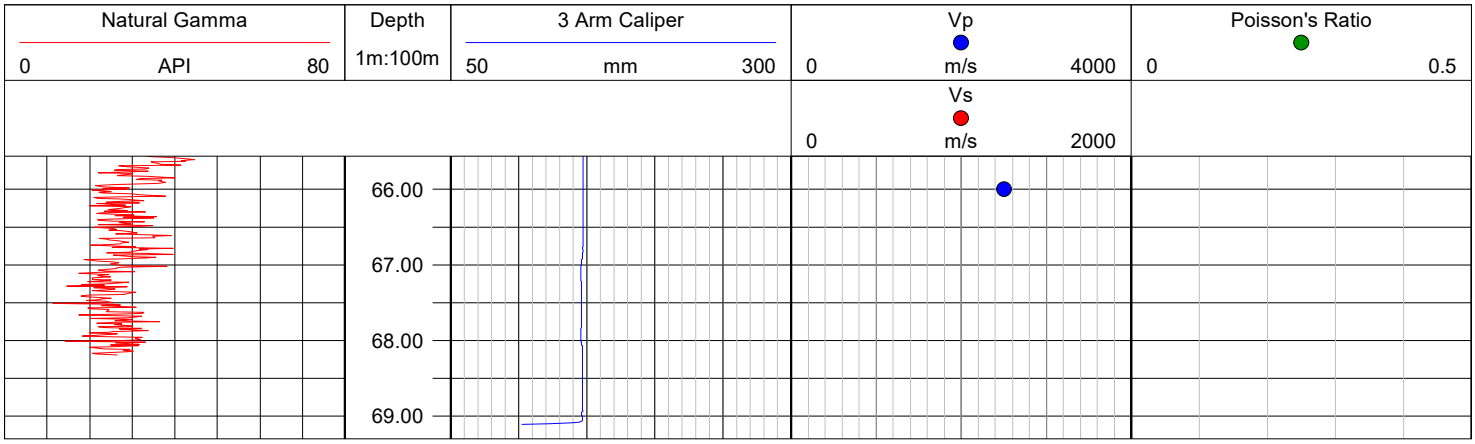

Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
41.00
42.00
43.00
44.00
45.00
46.00
47.00
48.00
49.00
50.00
51.00
52.00
53.00
54.00
55.00
56.00
57.00
58.00
59.00
60.00
61.00
62.00
63.00
64.00
65.00

Plate 3.276


Natural Gamma
0
API
80
Depth
1m:100m
3 Arm Caliper
50
mm
300
Vp
0
m/s
4000
Vs
0
m/s
2000
Poisson's Ratio
0
0.5
66.00
67.00
68.00
69.00

4. Sampling Data

Title	Plate No.
Sample Movement Records	4.1 to 4.39
Dynamic Sampling and Rotary Coring Photographs	4.40 to 4.1108

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Friday 2022-06-03
Transmittal No	F-9E1APB-PH70
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH26	28.50	28.75	B	63	F-3UO9PB-6TOA	
BH26	28.75	298.00	B	64	F-MUO9PB-GZFP	
BH26	21.30	21.50	B	39	F-DDR8PB-0YRE	
BH26	27.30	27.45	B	62	F-ZNJ9PB-87AK	
BH26	25.50	25.70	B	59	F-LNI9PB-H13U	
BH26	23.65	23.80	B	50	F-VJ49PB-7TRC	
BH26	24.38	24.50	B	54	F-3O69PB-XHSP	
BH26	23.80	24.10	B	52	F-IT59PB-BQTF	
BH26	22.60	22.80	B	47	F-0T19PB-JTWK	
BH26	23.50	23.65	B	49	F-CU19PB-1YIK	
BH26	23.50	23.80	B	51	F-DM59PB-2QQR	
BH26	22.80	23.00	B	48	F-PT19PB-5IL8	
BH26	17.70	17.90	B	22	F-M3H8PB-8UE7	
BH26	22.10	22.40	B	45	F-LTX8PB-48D5	
BH26	27.00	27.10	B	60	F-6KJ9PB-YSYS	
BH26	11.00	11.23	B	10	F-2H28PB-0B88	
BH26	16.90	17.10	B	18	F-XCD8PB-CJTO	
BH26	11.23	11.45	B	11	F-RH28PB-IW82	
BH26	9.75	10.00	B	8	F-OPW7PB-2BND	
BH26	16.50	16.70	B	16	F-I9D8PB-1FCR	
BH26	5.50	5.72	B	5	F-TFI7PB-0776	
BH26	10.00	10.25	B	9	F-SPW7PB-C0X7	
BH26	14.09	14.40	B	15	F-L678PB-SSL5	
BH26	13.50	13.68	B	12	F-M478PB-09X6	
BH26	5.72	5.94	B	6	F-4GK7PB-TNGM	
BH26	9.50	9.75	B	7	F-TNW7PB-FBIQ	
BH26	0.00	0.01	B	1	F-L4J6PB-Q8E1	
BH26	3.70	3.85	B	3	F-3P97PB-3VOD	
BH26	3.50	3.70	B	2	F-ZN97PB-GJ6E	
BH26	5.00	5.23	B	4	F-K1G7PB-SAQT	
BH26	36.60	36.80	B	82	F-8QHAPB-QI3D	
BH26	36.00	36.20	B	79	F-5OHAPB-W3PQ	
BH26	34.25	34.50	B	73	F-JX8APB-LE78	
BH26	34.00	34.25	B	72	F-NW8APB-MZUH	
BH26	35.00	35.25	B	75	F-FNBAPB-2QW9	
BH26	34.50	34.73	B	74	F-YX8APB-ZLBX	
BH26	35.25	35.60	B	76	F-KPBAPB-AE67	
BH26	32.70	32.90	B	70	F-N34APB-U8TQ	
BH26	32.90	33.05	B	71	F-Z34APB-NQK7	
BH26	32.50	32.70	B	69	F-134APB-YKRG	
BH26	31.00	31.20	B	65	F-45V9PB-MPTD	
BH26	31.20	31.40	B	66	F-G6V9PB-G2ER	
BH26	31.60	31.85	B	68	F-27V9PB-DYQ2	
BH26	31.40	31.60	B	67	F-S6V9PB-ZYWW	
BH26	16.70	16.90	B	17	F-KCD8PB-8B1R	
BH26	20.00	20.15	B	32	F-DFO8PB-SLBW	
BH26	18.50	18.63	B	26	F-GTH8PB-HWPF	
BH26	17.30	17.42	B	20	F-6ED8PB-EDL5	
BH26	20.15	20.30	B	33	F-5GO8PB-IWW7	
BH26	17.50	17.70	B	21	F-Z2H8PB-9CE6	
BH26	19.35	19.50	B	31	F-FVJ8PB-4LYW	
BH26	13.88	14.09	B	14	F-5678PB-Y5S3	
TOTALS	B [89] | D [12]					

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Plate 4.1

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Friday 2022-06-03
Transmittal No	F-9E1APB-PH70
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks	
BH26	18.78	18.88	B	27	F-QRH8PB-85TR		
BH26	21.50	21.70	B	40	F-NDR8PB-MAND		
BH26	20.50	20.65	B	36	F-H1P8PB-0FPB		
BH26	24.50	24.75	B	55	F-74A9PB-VXCR		
BH26	24.75	25.00	B	56	F-25A9PB-WC41		
BH26	25.00	25.25	B	57	F-H5A9PB-YYAQ		
BH26	25.25	25.50	B	58	F-H7A9PB-1BAB		
BH26	37.00	37.30	B	83	F-DLJAPB-8UD4		
BH26	38.00	38.30	B	86	F-LNNAPB-NX9L		
BH26	38.30	38.50	B	88	F-ZYTAPB-VLFW		
BH26	37.30	37.60	B	84	F-WLJAPB-CJF8		
BH26	38.00	38.30	B	87	F-68OAPB-IUBV		
BH26	40.40	40.50	B	93	F-BQZAPB-13B6		
BH26	56.17	56.28	B	153	F-ZZ0CPB-G0CD		
BH26	52.58	52.68	B	136	F-TXUBPB-4SHV		
BH26	53.66	53.74	B	142	F-PQYBPB-8NS6		
BH26	53.52	53.66	B	141	F-62YBPB-H65M		
BH26	42.73	42.80	B	104	F-9V5BPB-RLDA		
BH26	54.71	54.80	B	148	F-CHYBPB-62KF		
BH26	42.34	42.49	B	102	F-PJ5BPB-E9VI		
BH26	18.10	18.20	D	24	F-F6H8PB-KHUO		
BH26	18.88	18.95	D	28	F-1UJ8PB-6FRP		
BH26	35.80	35.90	D	78	F-GQBAPB-8ZVD		
BH26	37.60	37.70	D	85	F-8MJAPB-JC50		
BH26	17.10	17.30	D	19	F-ADD8PB-ZZOW		
BH26	21.00	21.10	D	37	F-UCR8PB-5Y0A		
BH26	45.90	45.98	D	117	F-APGBPB-ZFXZ		
BH26	22.50	22.60	D	46	F-RS19PB-KOKA		
BH26	21.95	22.00	D	43	F-G1T8PB-JJ6B		
BH26	21.70	21.75	D	41	F-X0T8PB-EG7V		
BH26	39.50	39.60	D	89	F-REZAPB-LX5V		
BH26	22.00	22.10	D	44	F-YDV8PB-PKVI		
BH26	48.52	48.60	B	123	F-LCLBPB-FMDU		
BH26	43.72	43.87	B	107	F-6CBBPB-8MY4		
BH26	44.17	44.30	B	109	F-8EBBPB-KMWA		
BH26	45.70	45.80	B	116	F-M6EBPB-023J		
BH26	39.60	39.76	B	90	F-RMZAPB-IZND		
BH26	44.60	44.73	B	111	F-40EBPB-0285		
BH26	48.60	48.66	B	124	F-HDLBPB-4W7Y		
BH26	47.91	47.98	B	121	F-U6LBPB-UI9K		
BH26	47.12	47.30	B	120	F-YRGBPB-SSG8		
BH26	41.07	41.17	B	98	F-LO1BPB-EJ5B		
BH26	50.30	50.44	B	130	F-20TBPB-TJ7Z		
BH26	49.12	49.25	B	126	F-8LQBPB-2SDG		
BH26	53.25	53.30	B	139	F-HIVBPB-H61H		
BH26	40.76	40.82	B	96	F-NM1BPB-67HN		
BH26	51.04	51.20	B	132	F-72TBPB-0UYL		
BH26	54.22	54.35	B	146	F-EFYBPB-5VAQ		
BH26	51.80	51.92	B	134	F-FAVBPB-LQ4E		
TOTALS	B [89] | D [12]						

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Plate 4.2

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	Frank Scotti
Day & Date	Sunday 2022-06-05
Transmittal No	F-7UWDPB-XL1U
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH26	13.68	13.88	C	13	F-9578PB-AR1B	BH26-C
BH26	17.90	18.10	C	23	F-D5H8PB-P372	BH26-C
BH26	18.63	18.78	C	26	F-GSH8PB-YCCZ	BH26-B
BH26	18.95	19.15	C	29	F-1VJ8PB-Z1HV	BH26-C
BH26	19.15	19.35	C	30	F-AVJ8PB-XUJI	BH26-B
BH26	20.30	20.50	C	35	F-RGO8PB-IOCW	BH26-B
BH26	21.10	21.30	C	38	F-9DR8PB-BH2I	BH26-C
BH26	21.75	21.95	C	42	F-B1T8PB-KSW9	BH26-B
BH26	24.10	24.38	C	53	F-YL69PB-299D	BH26-E
BH26	27.10	27.30	C	61	F-VLJ9PB-ZGHV	BH26-B
BH26	35.60	35.80	C	77	F-9QBAPB-2LCW	BH26-C
BH26	36.20	36.40	C	80	F-TOHAPB-I64Z	BH26-C
BH26	36.40	36.60	C	81	F-TPHAPB-4FAZ	BH26-B
BH26	40.82	41.05	C	97	F-VN1BPB-FHIE	BH26-E
BH26	44.73	44.93	C	112	F-O0EBPB-M0SG	BH26-D
BH26	44.93	45.16	C	113	F-Q2EBPB-URJ9	BH26-D
BH26	46.18	46.39	C	118	F-WPGBPB-2DO3	BH26-E
BH26	47.98	48.34	C	122	F-SBLBPB-B08C	BH26-A
BH26	49.94	50.30	C	129	F-GOQBPB-EBBH	BH26-D
BH26	50.44	51.04	C	131	F-71TBPB-6KJF	BH26-F
BH26	51.20	51.71	C	133	F-Y2TBPB-XBH2	BH26-F
BH26	51.92	52.58	C	135	F-1WUBPB-M951	BH26-A
BH26	54.04	54.22	C	144	F-MDYBPB-59D0	BH26-A
BH26	54.40	54.71	C	147	F-6GYBPB-F507	BH26-E
BH26	54.80	55.10	C	149	F-HR0CPB-B9D2	BH26-D
TOTALS	C [25]					

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Plate 4.3

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Tuesday 2022-06-07
Transmittal No	F-ZWVGPB-BOG2
Schedule Attached	N
Contaminated	N
Remarks	Folding Stillage with bulk bags full of small bags

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	0.00	0.15	B	1	F-BHBFPB-QUUE	BH01 BagA
BH01	0.15	0.35	B	2	F-ZHBFPB-A982	BH01 BagA
BH01	1.00	1.20	B	3	F-KNFFPB-G20N	BH01 BagA
BH01	1.20	1.40	B	4	F-COFFPB-6EIL	BH01 BagA
BH01	1.40	1.70	B	5	F-OOFFPB-P8M7	BH01 BagA
BH01	2.00	2.10	B	6	F-VLHFPB-D1M2	BH01 BagA
BH01	2.50	2.54	B	7	F-84JFPB-6CE0	BH01 BagA
BH01	3.50	3.87	B	8	F-L2SFPB-FETU	BH01 BagA
BH01	4.50	4.55	B	9	F-ACTFPB-JOV6	BH01 BagA
BH01	5.00	5.45	B	10	F-7HWFPB-Y0X5	BH01 BagA
BH01	5.50	5.75	B	11	F-YSYFPB-WZ2Y	BH01 BagA
BH01	5.75	6.00	B	12	F-GTYFPB-JU4Y	BH01 BagA
BH01	6.00	6.25	B	13	F-HUYFPB-7Q0Z	BH01 BagA
BH01	6.50	6.65	B	14	F-0X0GPB-5CUO	BH01 BagA
BH01	7.00	7.20	B	15	F-B03GPB-8R8Y	BH01 BagA
BH01	7.20	7.40	B	16	F-Q03GPB-U8N2	BH01 BagA
BH01	7.40	7.60	B	17	F-213GPB-964I	BH01 BagA
BH01	7.60	7.80	B	18	F-C13GPB-IBMP	BH01 BagA
BH01	8.00	8.20	B	19	F-1R4GPB-BHAE	BH01 BagC
BH01	8.20	8.40	B	20	F-HR4GPB-ZOIB	BH01 BagC
BH01	8.40	8.65	B	21	F-QR4GPB-7GTP	BH01 BagC
BH01	9.00	9.25	B	22	F-JADGPB-DTP7	BH01 BagC
BH01	9.25	9.50	B	23	F-VADGPB-U7Y6	BH01 BagC
BH01	9.50	9.75	B	24	F-U1EGPB-SYAO	BH01 BagB
BH01	9.75	10.00	B	25	F-82EGPB-BZOD	BH01 BagC
BH01	10.00	10.20	B	26	F-BKGGPB-QMFV	BH01 BagB
BH01	10.20	10.40	B	27	F-NKGGPB-3BOO	BH01 BagB
BH01	10.40	10.60	B	28	F-1LGGPB-1FPJ	BH01 BagB
BH01	10.60	10.80	B	29	F-DLGGPB-9WQE	BH01 BagB
BH01	11.00	11.20	B	30	F-CTIGPB-FYPF	BH01 BagB
BH01	11.20	11.40	B	31	F-UTIGPB-GWOB	BH01 BagB
BH01	11.40	11.60	B	32	F-6UIGPB-DGWC	BH01 BagB
BH01	11.60	11.80	B	33	F-HUIGPB-6L2Z	BH01 BagB
BH01	12.00	12.25	B	34	F-C1KGPB-Z4KL	BH01 BagB
BH01	12.25	12.50	B	35	F-U1KGPB-0XL2	BH01 BagB
BH01	12.50	12.60	D	36	F-92KGPB-505E	BH01 BagW
BH01	12.60	12.85	B	37	F-S2KGPB-IEXV	BH01 BagB
BH01	13.00	13.25	B	38	F-HBLGPB-8W9D	BH01 BagB
BH01	13.25	13.50	B	39	F-XBLGPB-A9WT	BH01 BagB
BH01	13.50	13.85	B	40	F-GUOGPB-Y4IN	BH01 BagB
BH01	14.00	14.40	B	41	F-9JTGPB-EBHG	BH01 BagB
BH01	14.50	14.95	B	42	F-5HVGPB-CPK4	BH01 BagC
BH01	15.50	15.70	B	43	F-9NZGPB-B5EH	BH01 BagC
BH01	16.00	16.12	B	44	F-4O1HPB-CMAG	BH01 BagC
BH01	16.12	16.35	B	45	F-RO1HPB-R9TY	BH01 BagC
BH01	16.50	16.75	B	46	F-227HPB-J14A	BH01 BagC
BH01	16.75	17.00	B	47	F-W27HPB-COOQ	BH01 BagC
BH01	17.00	17.20	B	48	F-837HPB-7RNV	BH01 BagC
BH01	17.50	17.70	B	49	F-KZAHPB-BULG	BH01 BagC
BH01	18.00	18.25	B	50	F-YCCHPB-N0KS	BH01 BagC
BH01	18.25	18.45	B	51	F-C3DHPB-MPBL	BH01 BagC
BH01	18.50	18.70	B	52	F-O7EHPB-ZIOD	BH01 BagC
BH01	18.70	18.90	B	53	F-58EHPB-5W7O	BH01 BagC
BH01	19.00	19.25	B	54	F-CJFHPB-B8BI	BH01 BagF

TOTALS B [184] | D [51]

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Plate 4.4

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Tuesday 2022-06-07
Transmittal No	F-ZWVGPB-BOG2
Schedule Attached	N
Contaminated	N
Remarks	Folding Stillage with bulk bags full of small bags

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	19.25	19.50	B	55	F-QJFHPB-VB9I	BH01 BagF
BH01	20.00	20.25	B	56	F-EZHHPB-M6VL	BH01 BagF
BH01	20.25	20.45	B	57	F-YZHHPB-E1FT	BH01 BagF
BH01	21.00	21.15	B	58	F-PJJHPB-5V9R	BH01 BagF
BH01	21.15	21.25	B	59	F-3LJHPB-PHEC	BH01 BagF
BH01	21.25	21.45	B	60	F-TLJHPB-X5E4	BH01 BagT
BH01	21.45	21.50	D	61	F-EMJHPB-K5JP	BH01 BagW
BH01	21.50	21.75	B	62	F-4ULHPB-BB82	BH01 BagT
BH01	22.00	22.18	B	64	F-TUMHPB-R25G	BH01 BagT
BH01	22.18	22.30	B	65	F-FVMHPB-UP7X	BH01 BagT
BH01	22.50	22.70	B	66	F-P9OHPB-3U79	BH01 BagT
BH01	23.30	23.45	B	70	F-1COHPB-N6A2	BH01 BagT
BH01	23.50	23.70	B	71	F-C2RHPB-TDA2	BH01 BagT
BH01	23.70	23.90	B	72	F-X2RHPB-9X0N	BH01 BagH
BH01	23.90	24.00	D	73	F-F3RHPB-BYH8	BH01 BagW
BH01	24.00	24.15	B	74	F-0XRHPB-YG0Q	BH01 BagT
BH01	24.35	24.50	B	76	F-XXRHPB-CD7J	BH01 BagT
BH01	24.50	24.60	D	77	F-GITHPB-IVEM	BH01 BagW
BH01	24.60	24.80	B	78	F-9JTHPB-4OSO	BH01 BagG
BH01	24.80	24.90	D	79	F-XJTHPB-F44Q	BH01 BagW
BH01	25.10	25.20	D	81	F-0LTHPB-FCJW	BH01 BagW
BH01	25.20	25.40	B	82	F-BUUHPB-IBRG	BH01 BagT
BH01	25.40	25.50	D	83	F-XUUHPB-47ID	BH01 BagW
BH01	25.50	25.70	B	84	F-5QWHPB-4EPF	BH01 BagT
BH01	26.10	26.20	D	87	F-OSWHPB-5STT	BH01 BagW
BH01	26.20	26.30	D	88	F-PQXHPB-C95T	BH01 BagW
BH01	26.30	26.40	D	89	F-5RXHPB-9AF0	BH01 BagW
BH01	26.40	26.50	D	90	F-LRXHPB-UB07	BH01 BagW
BH01	26.50	26.60	D	91	F-HYYHPB-3XHW	BH01 BagW
BH01	26.60	26.80	B	92	F-5ZYHPB-6EJ0	BH01 BagG
BH01	26.80	27.00	B	93	F-LZYHPB-FPLT	BH01 BagT
BH01	27.00	27.20	B	94	F-KUZHPB-LL72	BH01 BagT
BH01	27.40	27.50	D	96	F-RVZHPB-IY4U	BH01 BagW
BH01	27.50	27.60	D	97	F-361IPB-2O4T	BH01 BagW
BH01	27.80	28.00	B	99	F-971IPB-QCBL	BH01 BagU
BH01	28.00	28.10	D	100	F-C42IPB-VMFQ	BH01 BagW
BH01	28.10	28.25	B	101	F-P42IPB-9TEN	BH01 BagU
BH01	28.25	28.40	B	102	F-752IPB-OC8N	BH01 BagU
BH01	28.40	28.50	D	103	F-M52IPB-3D6Y	BH01 BagW
BH01	28.50	28.60	D	104	F-U55IPB-JBO4	BH01 BagW
BH01	28.80	29.00	B	106	F-675IPB-AP0P	BH01 BagU
BH01	29.00	29.20	B	107	F-FU6IPB-4Q29	BH01 BagU
BH01	29.20	29.40	B	108	F-VU6IPB-9L66	BH01 BagU
BH01	29.40	29.50	D	109	F-CV6IPB-G1GO	BH01 BagW
BH01	29.50	29.60	D	110	F-E18IPB-KH5P	BH01 BagE
BH01	29.60	29.80	B	111	F-96BIPB-GGQM	BH01 BagU
BH01	30.30	30.50	B	114	F-98BIPB-SXGJ	BH01 BagQ
BH01	30.50	30.70	B	115	F-ULCIPB-SOIY	BH01 BagU
BH01	30.95	31.20	B	117	F-RMCIPB-60HI	BH01 BagG
BH01	31.20	31.40	B	118	F-POCIPB-V0JB	BH01 BagP
BH01	31.40	31.50	D	119	F-7PCIPB-H41T	BH01 BagE
BH01	31.50	31.70	B	120	F-7IEIPB-ZE6I	BH01 BagU
BH01	32.30	32.50	B	123	F-VJEIPB-LWWV	BH01 BagU
BH01	32.50	32.70	B	124	F-JGFIPB-28FH	BH01 BagH
TOTALS	B [184] | D [51]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Tuesday 2022-06-07
Transmittal No	F-ZWVGPB-BOG2
Schedule Attached	N
Contaminated	N
Remarks	Folding Stillage with bulk bags full of small bags

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	32.70	32.90	B	125	F-WGFIPB-4SKN	BH01 BagH
BH01	32.90	33.00	D	126	F-BHFIPB-NHRO	BH01 BagE
BH01	33.00	33.10	D	127	F-9HGIPB-VMJE	BH01 BagE
BH01	33.35	33.40	D	129	F-CIGIPB-CCO8	BH01 BagE
BH01	34.00	34.25	B	130	F-BJHIPB-NYXY	BH01 BagH
BH01	34.25	34.50	B	131	F-UJHIPB-4NC9	BH01 BagH
BH01	34.50	34.70	B	132	F-J2JIPB-OKQR	BH01 BagH
BH01	34.70	34.90	B	133	F-33JIPB-YODN	BH01 BagH
BH01	35.00	35.25	B	134	F-9GKIPB-2YEB	BH01 BagH
BH01	35.25	35.45	B	135	F-5HKIPB-6PNY	BH01 BagH
BH01	35.50	35.70	B	136	F-7KMIPB-DHDY	BH01 BagH
BH01	35.70	35.90	B	137	F-NLMIPB-PT4Q	BH01 BagH
BH01	36.00	36.25	B	138	F-72RIPB-J7U6	BH01 BagG
BH01	36.25	36.50	B	139	F-O2RIPB-VMIZ	BH01 BagG
BH01	36.50	36.80	B	140	F-WQUIPB-5HZB	BH01 BagG
BH01	37.00	37.13	B	141	F-ZO3JPB-VRFT	BH01 BagG
BH01	37.13	37.25	B	142	F-VP3JPB-MUJD	BH01 BagG
BH01	37.25	37.45	B	143	F-8Q3JPB-XD1Y	BH01 BagG
BH01	37.45	37.50	D	144	F-KQ3JPB-AYKM	BH01 BagE
BH01	37.50	37.70	B	145	F-MG5JPB-9DJV	BH01 BagG
BH01	37.90	38.10	B	147	F-PH5JPB-U7SG	BH01 BagD
BH01	38.30	38.50	B	149	F-XK5JPB-PC2L	BH01 BagG
BH01	38.50	38.80	B	150	F-7IFJPB-2KBV	BH01 BagD
BH01	39.00	39.10	D	151	F-NJ1KPB-9QS5	BH01 BagE
BH01	39.30	39.50	B	153	F-4L1KPB-1WPS	BH01 BagD
BH01	39.50	39.60	D	154	F-OL1KPB-Y4VV	BH01 BagE
BH01	39.60	39.70	D	155	F-RU2KPB-JNZF	BH01 BagE
BH01	39.70	39.80	D	156	F-J85KPB-22YI	BH01 BagE
BH01	40.00	40.10	D	158	F-BA5KPB-VZJP	BH01 BagE
BH01	40.20	40.40	B	159	F-I17KPB-1OLO	BH01 BagD
BH01	40.60	40.70	D	161	F-N27KPB-CVFJ	BH01 BagE
BH01	40.70	40.80	D	162	F-A29KPB-PDRK	BH01 BagE
BH01	40.80	41.00	B	163	F-T29KPB-G72F	BH01 BagD
BH01	41.00	41.20	B	164	F-V39KPB-LWS6	BH01 BagL
BH01	41.50	41.75	B	166	F-BTBKPB-NW12	BH01 BagD
BH01	41.75	42.00	B	167	F-WTBKPB-C0Q9	BH01 BagD
BH01	42.00	42.25	B	168	F-36QKPB-J6NF	BH01 BagF
BH01	42.25	42.50	B	169	F-U6QKPB-1127	BH01 BagF
BH01	42.50	42.75	B	170	F-97QKPB-NESU	BH01 BagF
BH01	42.75	42.90	B	171	F-K7QKPB-LOHN	BH01 BagF
BH01	43.50	43.75	B	172	F-AO1LPB-W434	BH01 BagK
BH01	43.75	44.00	B	173	F-XO1LPB-WEWW	BH01 BagK
BH01	44.00	44.25	B	174	F-7P1LPB-5SAF	BH01 BagK
BH01	44.25	44.50	B	175	F-JP1LPB-UC6O	BH01 BagK
BH01	44.50	44.75	B	176	F-F73LPB-MH1A	BH01 BagK
BH01	44.75	45.00	B	177	F-V73LPB-KMDK	BH01 BagK
BH01	45.00	45.20	B	178	F-783LPB-ULJD	BH01 BagK
BH01	45.20	45.50	B	179	F-793LPB-I38Z	BH01 BagK
BH01	45.50	45.70	B	180	F-HC4LPB-FD68	BH01 BagM
BH01	46.35	46.50	B	185	F-PJ6LPB-M739	BH01 BagL
BH01	46.40	46.50	B	184	F-FH4LPB-8373	BH01 BagL
BH01	46.50	46.70	B	186	F-IK6LPB-QJ9A	BH01 BagM
BH01	46.70	46.90	B	187	F-TK6LPB-VIE1	BH01 BagL
BH01	46.90	47.12	B	188	F-8L6LPB-KB0H	BH01 BagL
TOTALS	B [184] | D [51]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Tuesday 2022-06-07
Transmittal No	F-ZWVGPB-BOG2
Schedule Attached	N
Contaminated	N
Remarks	Folding Stillage with bulk bags full of small bags

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	47.50	47.80	B	190	F-WN7LPB-4WZT	BH01 BagL
BH01	47.80	47.95	D	191	F-BS7LPB-B5T7	BH01 BagW
BH01	48.30	48.60	B	193	F-WT7LPB-V4C8	BH01 BagS
BH01	48.90	49.00	B	195	F-JW7LPB-C29S	BH01 BagL
BH01	49.00	49.30	B	196	F-QG9LPB-C9NG	BH01 BagL
BH01	50.20	50.50	B	200	F-BI9LPB-P22M	BH01 BagK
BH01	50.50	50.80	B	201	F-B9CLPB-C05G	BH01 BagQ
BH01	50.80	51.00	B	202	F-HACLPB-YR7A	BH01 BagR
BH01	51.00	51.30	B	203	F-YBCLPB-HDN1	BH01 BagR
BH01	52.00	52.10	D	204	F-2WFLPB-N7H2	BH01 BagV
BH01	52.60	52.85	B	207	F-0YFLPB-5M10	BH01 BagQ
BH01	52.85	52.95	D	208	F-MYFLPB-YVNA	BH01 BagV
BH01	53.00	53.20	B	209	F-XOHLPB-0MFC	BH01 BagQ
BH01	53.95	54.35	B	213	F-URHLPB-RU4C	BH01 BagQ
BH01	54.35	54.50	D	214	F-WRHLPB-GQIG	BH01 BagV
BH01	54.50	54.70	B	215	F-9WILPB-XHAC	BH01 BagQ
BH01	55.60	55.70	D	219	F-9YILPB-VQNA	BH01 BagV
BH01	55.70	56.00	B	220	F-OYILPB-2456	BH01 BagP
BH01	56.00	56.10	D	221	F-KTJLPB-K184	BH01 BagV
BH01	56.90	57.30	B	224	F-0WJLPB-W53H	BH01 BagP
BH01	57.30	57.40	D	225	F-NWJLPB-I785	BH01 BagV
BH01	57.50	57.60	D	226	F-Y1LLPB-X18M	BH01 BagV
BH01	58.20	58.50	B	229	F-J3LLPB-C4RP	BH01 BagP
BH01	58.50	58.60	D	230	F-YIMLPB-Z7UE	BH01 BagV
BH01	58.90	59.20	B	232	F-1KMLPB-RDCQ	BH01 BagU
BH01	59.20	59.40	B	233	F-PKMLPB-N6RV	BH01 BagP
BH01	59.40	59.50	D	234	F-3LMLPB-VZ9J	BH01 BagV
BH01	59.50	59.60	D	235	F-MBOLPB-SM8W	BH01 BagV
BH01	59.60	59.80	B	236	F-YBOLPB-U38W	BH01 BagP
BH01	59.80	60.20	B	237	F-9COLPB-KKAS	BH01 BagO
BH01	60.20	60.60	B	238	F-LCOLPB-DEIB	BH01 BagO
BH01	60.60	60.80	B	239	F-MDOLPB-CTL6	BH01 BagO
BH01	60.80	60.90	D	240	F-XDOLPB-4FUI	BH01 BagV
BH01	61.00	61.30	B	241	F-3JQLPB-IQ2V	BH01 BagN
BH01	61.30	61.50	B	242	F-KJQLPB-FIXC	BH01 BagM
BH01	61.50	61.80	B	243	F-YJQLPB-U8WC	BH01 BagM
BH01	61.80	62.10	B	244	F-QKQLPB-YYKG	BH01 BagM
BH01	62.40	62.50	D	246	F-TKQLPB-3JD9	BH01 BagV
BH01	62.50	62.60	D	247	F-2URLPB-OGJ2	BH01 BagV
BH01	62.90	63.30	B	249	F-0XRLPB-RQD4	BH01 BagM
BH01	63.30	63.70	B	250	F-PXRLPB-0CG2	BH01 BagO
BH01	63.70	64.00	B	251	F-6ZRLPB-NXY4	BH01 BagO
BH01	64.00	64.10	D	252	F-PIULPB-H5DD	BH01 BagV
BH01	64.10	64.50	B	253	F-2JULPB-84O5	BH01 BagN
BH01	64.50	64.90	B	254	F-UJULPB-8NFY	BH01 BagN
BH01	64.90	65.30	B	255	F-BKULPB-DT7Z	BH01 BagN
BH01	65.30	65.50	B	256	F-UKULPB-ZVZQ	BH01 BagN
BH01	65.50	65.60	D	257	F-C9WLPB-UJL8	BH01 BagV
BH01	65.82	66.26	B	259	F-DAWLPB-I5J5	BH01 BagR
BH01	66.51	66.90	B	261	F-6CWLPB-35T8	BH01 BagR
BH01	66.90	67.00	D	262	F-9DWLPB-F843	BH01 BagV
BH01	67.00	67.10	D	263	F-VTXLPB-BFQ7	BH01 BagV
BH01	67.10	67.85	B	285	F-KMIMPB-JV33	BH01 BagJ
BH01	67.85	68.15	B	264	F-FVZLPB-4H3R	BH01 BagS

TOTALS B [184] | D [51]

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Plate 4.7

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Tuesday 2022-06-07
Transmittal No	F-ZWVGPB-BOG2
Schedule Attached	N
Contaminated	N
Remarks	Folding Stillage with bulk bags full of small bags

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	68.15	68.50	B	265	F-DWZLPB-X7AX	BH01 BagR
BH01	68.50	68.70	B	266	F-UWZLPB-J4TS	BH01 BagS
BH01	68.70	69.05	B	267	F-CT0MPB-OHM2	BH01 BagS
BH01	69.05	69.50	B	268	F-CX0MPB-49D4	BH01 BagS
BH01	69.50	69.70	B	269	F-M11MPB-1OWT	BH01 BagS
BH01	69.70	69.90	B	270	F-V61MPB-1QBL	BH01 BagS
BH01	69.90	70.20	B	271	F-671MPB-EIX5	BH01 BagJ
BH01	70.20	70.50	B	272	F-GR5MPB-P911	BH01 BagJ
BH01	70.50	70.90	B	273	F-Y86MPB-1R8D	BH01 BagJ
BH01	70.90	71.30	B	274	F-I96MPB-XUZY	BH01 BagJ
BH01	71.30	71.40	D	275	F-W96MPB-C1KX	BH01 BagV
BH01	71.50	71.80	B	276	F-2V7MPB-L1Z1	BH01 BagI
BH01	71.80	72.15	B	277	F-PV7MPB-2L5G	BH01 BagI
BH01	72.15	72.60	B	278	F-A19MPB-K9Q7	BH01 BagI
BH01	72.60	72.70	D	279	F-D69MPB-VOI1	BH01 BagV
BH01	73.00	73.45	B	280	F-UVCMPB-7O2F	BH01 BagI
BH01	74.00	74.25	B	281	F-W8GMPB-GL0C	BH01 BagI
BH01	74.25	74.50	B	282	F-CAGMPB-1Z77	BH01 BagI
BH01	74.80	75.00	B	284	F-BBGMPB-5EZC	BH01 BagI

TOTALS B [184] | D [51]

Gaia.Forms (3.5.3872.a78796) - SampleMovement - PDF generated on 2022-07-28 15:59:44 by b.marsden

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Friday 2022-06-10
Transmittal No	F-20SMPB-RNDN
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH01	21.75	21.98	C	63	F-KVLHPB-I3LB	BH01 Box B
BH01	22.70	22.90	C	67	F-KAOHPB-NGZU	BH01 Box B
BH01	22.90	23.10	C	68	F-BBOHPB-UZKQ	BH01 Box C
BH01	23.10	23.30	C	69	F-NBOHPB-X5XG	BH01 Box C
BH01	24.15	24.35	C	75	F-FXRHPB-Y91V	BH01 Box C
BH01	24.90	25.10	C	80	F-EKTHPB-K4ZQ	BH01 Box B
BH01	25.70	25.90	C	85	F-MQWHPB-5RJE	BH01 Box A
BH01	25.90	26.10	C	86	F-5SWHPB-JDJM	BH01 Box B
BH01	27.20	27.40	C	95	F-AVZHPB-TWRP	BH01 Box C
BH01	27.60	27.80	C	98	F-S61IPB-ZPKU	BH01 Box F
BH01	28.60	28.80	C	105	F-K65IPB-SNUI	BH01 Box A
BH01	29.80	30.05	C	112	F-47BIPB-IMAF	BH01 Box C
BH01	30.05	30.30	C	113	F-O7BIPB-N7S8	BH01 Box J
BH01	30.70	30.95	C	116	F-8MCIPB-9YEH	BH01 Box D
BH01	31.70	32.00	C	121	F-OIEIPB-FNL2	BH01 Box D
BH01	32.00	32.30	C	122	F-CJEIPB-TYDJ	BH01 Box D
BH01	33.10	33.35	C	128	F-VHGIPB-H0IM	BH01 Box D
BH01	37.70	37.90	C	146	F-AH5JPB-F08R	BH01 Box A
BH01	38.10	38.30	C	148	F-2I5JPB-FF5P	BH01 Box G
BH01	39.10	39.30	C	152	F-7K1KPB-5WVW	BH01 Box B
BH01	39.80	40.00	C	157	F-595KPB-7C8Y	BH01 Box B
BH01	40.40	40.60	C	160	F-527KPB-73MX	BH01 Box A
BH01	41.20	41.40	C	165	F-D49KPB-SAXT	BH01 Box A
BH01	45.70	45.90	C	181	F-2D4LPB-XMD4	BH01 Box G
BH01	45.90	46.25	C	182	F-SD4LPB-AQA8	BH01 Box F
BH01	46.25	46.40	C	183	F-NG4LPB-RMCA	BH01 Box I
BH01	47.12	47.47	C	189	F-EM6LPB-6YR0	BH01 Box E
BH01	47.95	48.30	C	192	F-ET7LPB-885E	BH01 Box F
BH01	48.60	48.90	C	194	F-4W7LPB-9WHD	BH01 Box K
BH01	49.30	49.60	C	197	F-4H9LPB-MV4A	BH01 Box E
BH01	49.60	49.90	C	198	F-HH9LPB-C7ZP	BH01 Box J
BH01	49.90	50.20	C	199	F-VH9LPB-79XL	BH01 Box H
BH01	52.10	52.35	C	205	F-NWFLPB-HDLC	BH01 Box J
BH01	52.35	52.60	C	206	F-5XFLPB-4V2O	BH01 Box J
BH01	53.20	53.45	C	210	F-4QHLPB-37HU	BH01 Box G
BH01	53.45	53.70	C	211	F-0RHLPB-OTSY	BH01 Box F
BH01	53.70	53.95	C	212	F-JRHLPB-JY2Z	BH01 Box G
BH01	54.70	55.00	C	216	F-QWILPB-Q7BL	BH01 Box E
BH01	55.00	55.30	C	217	F-9XILPB-PD00	BH01 Box E
BH01	55.30	55.60	C	218	F-NXILPB-R5Z9	BH01 Box K
BH01	56.10	56.50	C	222	F-FUJLPB-RBTA	BH01 Box I
BH01	56.50	56.90	C	223	F-GVJLPB-4YEM	BH01 Box H
BH01	57.60	57.90	C	227	F-F2LLPB-VUGP	BH01 Box H
BH01	57.90	58.20	C	228	F-W2LLPB-27ET	BH01 Box I
BH01	58.60	58.90	C	231	F-9JMLPB-KQWS	BH01 Box K
BH01	62.10	62.40	C	245	F-SKQLPB-IZ76	BH01 Box I
BH01	62.60	62.90	C	248	F-DURLPB-D3ED	BH01 Box G
BH01	65.60	65.82	C	258	F-S9WLPB-KGG6	BH01 Box H
BH01	66.26	66.51	C	260	F-MBWLPB-L8RI	BH01 Box J
BH01	74.50	74.80	C	283	F-TAGMPB-PYH0	BH01 Box K
TOTALS	C [50]					

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Plate 4.9

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Wednesday 2022-06-15
Transmittal No	F-96AWPB-N723
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	1.00	1.20	B	1	F-84QQPB-3KGS	Bag I
BH28	2.00	2.25	B	2	F-QKUQPB-11H9	Bag I
BH28	2.50	2.70	B	4	F-ZD2RPB-Y5G0	Bag I
BH28	2.50	2.55	B	3	F-Y7WQPB-BXQO	Bag I
BH28	2.70	2.90	B	5	F-LE2RPB-0M02	Bag I
BH28	3.00	3.20	B	6	F-VB3RPB-EYQM	Bag I
BH28	3.20	3.40	B	7	F-HC3RPB-RP1H	Bag I
BH28	3.50	3.80	B	8	F-WL5RPB-O5IB	Bag I
BH28	4.00	4.25	B	9	F-WJ6RPB-KZBV	Bag I
BH28	4.25	4.50	B	10	F-AK6RPB-48B0	Bag I
BH28	4.50	4.80	B	11	F-FQ8RPB-IXVS	Bag I
BH28	5.50	5.70	B	13	F-4JCRPB-XZCW	Bag I
BH28	5.70	5.90	B	14	F-NJCRPB-U1O4	Bag I
BH28	6.50	6.70	B	15	F-CEIRPB-UU0B	Bag I
BH28	6.90	7.10	B	17	F-LGIRPB-EE3Z	Bag I
BH28	7.10	7.30	B	18	F-DFJRPB-TKVS	Bag I
BH28	7.50	7.60	D	20	F-NGJRPB-3YFX	Bag M
BH28	7.60	7.80	B	21	F-Q9KRPB-N0JP	Bag H
BH28	8.00	8.10	D	23	F-NAKRPB-A61A	Bag M
BH28	8.10	8.25	B	24	F-W9LRPB-700I	Bag H
BH28	8.50	8.70	B	25	F-6ZMRPB-DPDS	Bag H
BH28	8.70	8.85	B	26	F-12NRPB-Q26C	Bag H
BH28	8.85	8.95	B	27	F-83NRPB-3JMU	Bag H
BH28	9.00	9.25	B	28	F-8SNRPB-H71V	Bag H
BH28	9.25	9.50	B	29	F-QSNRPB-E3NZ	Bag H
BH28	9.50	9.60	D	30	F-JNORPB-GVCT	Bag M
BH28	9.80	10.00	B	32	F-AOORPB-JLLA	Bag H
BH28	10.00	10.10	D	33	F-FHPRPB-013D	Bag M
BH28	10.10	10.25	B	34	F-THPRPB-KN7K	Bag H
BH28	10.25	10.40	B	35	F-0JPRPB-T6M9	Bag H
BH28	10.60	10.80	B	39	F-8JQRPB-C02I	Bag K
BH28	10.80	10.90	D	40	F-WJQRPB-DKU6	Bag M
BH28	11.00	11.10	D	41	F-95RRPB-DJTH	Bag M
BH28	11.10	11.25	B	42	F-W5RRPB-YBTF	Bag H
BH28	11.25	11.40	B	43	F-B6RRPB-3OBR	Bag H
BH28	11.40	11.50	D	44	F-U6RRPB-V259	Bag M
BH28	11.50	11.70	B	45	F-YDSRPB-82TB	Bag K
BH28	11.70	11.90	B	46	F-BESRPB-HMID	Bag K
BH28	11.90	12.00	D	47	F-HFSRPB-PGXZ	Bag M
BH28	12.00	12.10	D	48	F-X2TRPB-YL00	Bag M
BH28	12.10	12.30	B	49	F-D3TRPB-T069	Bag K
BH28	12.30	12.50	B	50	F-L4TRPB-D4BN	Bag K
BH28	12.50	12.65	B	51	F-SXTRPB-SMYG	Bag K
BH28	12.85	12.95	D	53	F-2ZTRPB-VT9A	Bag M
BH28	13.00	13.10	D	55	F-OPURPB-QIPR	Bag M
BH28	13.10	13.25	B	56	F-PQURPB-1FSH	Bag K
BH28	13.25	13.45	B	64	F-1RURPB-DUHH	Bag K
BH28	13.45	13.55	D	58	F-KRURPB-NAYU	Bag M
BH28	13.50	13.60	D	59	F-LGXRPB-VVV4	Bag M
BH28	13.60	13.90	B	60	F-D7YRPB-R5IU	Bag K
BH28	13.90	14.00	B	61	F-M7YRPB-N1JL	Bag K
BH28	14.00	14.27	B	63	F-PB0SPB-CQAA	Bag K
TOTALS	B [135] | D [49]					

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Plate 4.10

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Wednesday 2022-06-15
Transmittal No	F-96AWPB-N723
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	14.00	14.05	D	62	F-MKZRPB-7O45	Bag M
BH28	14.50	14.90	B	65	F-I43SPB-BF8X	Bag K
BH28	15.00	15.25	B	66	F-E84SPB-CTAY	Bag K
BH28	15.25	15.40	B	67	F-T84SPB-5GSK	Bag K
BH28	15.50	15.60	B	68	F-896SPB-5EDZ	Bag K
BH28	15.60	15.85	B	69	F-K27SPB-X4JK	Bag K
BH28	16.00	16.20	B	70	F-IK8SPB-0V30	Bag K
BH28	16.20	16.40	B	71	F-WK8SPB-W6AP	Bag K
BH28	16.50	16.95	B	72	F-UFCSPB-QB5X	Bag J
BH28	17.00	17.30	B	73	F-JJDSPB-0OJG	Bag J
BH28	17.50	17.95	B	74	F-78FSPB-NYSX	Bag J
BH28	18.00	18.45	B	75	F-CGHSPB-VKP7	Bag J
BH28	18.50	18.52	B	76	F-4RISPB-8ZGT	Bag J
BH28	19.00	19.20	B	77	F-UCKSPB-A487	Bag J
BH28	19.50	19.90	B	78	F-4IMSPB-6P9F	Bag J
BH28	20.00	20.10	B	79	F-KYOSPB-B815	Bag J
BH28	20.10	20.35	B	80	F-1ZOSPB-JK8U	Bag J
BH28	20.50	20.60	B	81	F-2OQSPB-BVKG	Bag J
BH28	20.80	20.90	B	83	F-5PQSPB-CLOF	Bag J
BH28	21.00	21.10	B	84	F-QRRSPB-6WRW	Bag J
BH28	21.30	21.43	B	86	F-DTRSPB-3XQA	Bag J
BH28	21.70	21.90	B	87	F-AHVSPB-E34F	Bag J
BH28	21.90	21.95	D	88	F-BIVSPB-WMEB	Bag N
BH28	22.10	22.30	B	89	F-HVWSPB-CVVD	Bag J
BH28	22.30	22.40	D	90	F-2WWSPB-FZYC	Bag N
BH28	22.50	22.75	B	91	F-3EXSPB-S9VK	Bag J
BH28	22.90	23.00	D	93	F-6GXSPB-G5F2	Bag N
BH28	23.50	23.70	B	94	F-O9ZSPB-5MRD	Bag J
BH28	23.70	23.90	B	95	F-WAZSPB-492Q	Bag J
BH28	24.00	24.36	B	96	F-B60TPB-SX2P	Bag L
BH28	24.36	24.50	B	97	F-470TPB-7D3A	Bag L
BH28	24.50	24.59	D	98	F-9W0TPB-0EHR	Bag N
BH28	24.78	25.00	B	100	F-AX0TPB-269K	Bag L
BH28	25.00	25.10	D	101	F-BQ1TPB-TPYR	Bag N
BH28	25.10	25.26	B	102	F-VQ1TPB-7C5P	Bag L
BH28	25.60	25.70	D	104	F-CV2TPB-W7JU	Bag N
BH28	26.50	26.60	D	107	F-Y94TPB-SXBY	Bag N
BH28	26.80	26.90	D	109	F-ZA4TPB-YBIV	Bag N
BH28	27.00	27.25	B	110	F-3F5TPB-8D6J	Bag L
BH28	27.25	27.35	D	111	F-TF5TPB-5BUA	Bag N
BH28	28.00	28.10	D	113	F-639TPB-SMTV	Bag N
BH28	28.10	28.31	B	114	F-939TPB-BV3J	Bag L
BH28	28.50	28.60	D	116	F-KNATPB-6A5E	Bag N
BH28	29.00	29.10	D	118	F-0EBTPB-MIEC	Bag N
BH28	29.50	29.60	D	120	F-A9DTPB-T9KU	Bag N
BH28	30.40	30.50	D	124	F-ABDTPB-H0CU	Bag N
BH28	30.50	30.60	D	125	F-IAETPB-5GZ2	Bag N
BH28	30.60	30.85	B	126	F-WAETPB-2TAA	Bag E
BH28	31.40	31.50	D	129	F-HDETPB-I2XS	Bag N
BH28	31.50	31.60	D	130	F-T3GTPB-4SP8	Bag D
BH28	32.10	32.30	B	133	F-35GTPB-I36D	Bag L
BH28	32.30	32.50	B	134	F-ZKHTPB-9HRF	Bag L
TOTALS	B [135] | D [49]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Wednesday 2022-06-15
Transmittal No	F-96AWPB-N723
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	33.40	33.50	D	138	F-ZMHTPB-2KPD	Bag D
BH28	33.50	33.75	B	139	F-QOITPB-QREA	Bag L
BH28	33.75	34.00	B	140	F-JPITPB-7MVY	Bag L
BH28	34.00	34.25	B	141	F-3NJTPB-KBXU	Bag L
BH28	35.00	35.25	B	142	F-66MTPB-LC80	Bag L
BH28	35.50	35.70	B	143	F-D9NTPB-BHO8	Bag L
BH28	35.70	35.90	B	144	F-DANTPB-MH9B	Bag L
BH28	36.00	36.25	B	145	F-5KOTPB-N5ET	Bag L
BH28	36.25	36.50	B	146	F-MKOTPB-LHPY	Bag L
BH28	36.50	36.73	B	147	F-21STPB-DSMI	Bag E
BH28	36.73	36.95	B	148	F-T1STPB-3G8G	Bag E
BH28	37.00	37.35	B	149	F-X7UTPB-06NN	Bag E
BH28	37.50	37.85	B	150	F-FTVTPB-EAVX	Bag E
BH28	38.00	38.25	B	151	F-IG2UPB-DM2K	Bag E
BH28	38.25	38.50	B	152	F-YG2UPB-VHR9	Bag E
BH28	38.50	38.75	B	153	F-Q43UPB-H2M1	Bag E
BH28	38.75	39.00	B	154	F-353UPB-81D3	Bag E
BH28	39.00	39.20	B	155	F-JH4UPB-MYHS	Bag E
BH28	39.20	39.40	B	156	F-XH4UPB-PPXU	Bag E
BH28	39.50	39.80	B	157	F-7Y7UPB-987G	Bag E
BH28	39.80	40.05	B	158	F-LY7UPB-TMWD	Bag E
BH28	40.00	40.21	B	159	F-5Z8UPB-AHGY	Bag E
BH28	40.21	40.43	B	160	F-JZ8UPB-F43W	Bag E
BH28	40.43	40.45	D	161	F-ZZ8UPB-1D00	Bag D
BH28	40.50	40.70	B	162	F-E1AUPB-U67Z	Bag E
BH28	40.70	41.00	B	163	F-R1AUPB-TK1F	Bag F
BH28	41.00	41.25	B	164	F-C0BUPB-S27N	Bag F
BH28	41.40	41.50	B	166	F-K1BUPB-9AFV	Bag F
BH28	41.50	41.60	B	167	F-EICUPB-58RR	Bag E
BH28	41.90	42.00	B	170	F-AKCUPB-OW02	Bag F
BH28	42.00	42.05	B	171	F-7MDUPB-08M9	Bag E
BH28	42.35	42.50	B	174	F-ENDUPB-TGMQ	Bag F
BH28	42.50	42.70	B	175	F-35FUPB-X5VL	Bag F
BH28	43.05	43.10	D	178	F-77FUPB-BVYT	Bag D
BH28	43.10	43.30	B	179	F-S7FUPB-78M0	Bag F
BH28	43.30	43.40	B	180	F-J8FUPB-O6AO	Bag F
BH28	43.50	43.60	B	181	F-GMGUPB-NKIS	Bag F
BH28	44.30	44.40	D	185	F-DPGUPB-U7D0	Bag D
BH28	44.50	44.90	B	186	F-0QHUPB-WEVE	Bag F
BH28	44.90	45.40	B	187	F-WLJUPB-UGZL	Bag F
BH28	45.40	45.50	D	188	F-IMJUPB-TM2R	Bag D
BH28	46.45	46.50	D	190	F-MUKUPB-YLAF	Bag D
BH28	46.50	46.57	B	191	F-ZVMUPB-X48A	Bag F
BH28	46.96	47.18	B	194	F-CYMUPB-S9R8	Bag F
BH28	47.18	47.43	B	195	F-B9NUPB-O3XO	Bag B
BH28	47.43	47.50	D	196	F-FANUPB-G1MC	Bag D
BH28	47.50	47.60	D	197	F-PBPUPB-YMOU	Bag D
BH28	47.60	47.90	B	198	F-YCPUPB-FSM9	Bag G
BH28	48.50	48.90	B	199	F-WHRUPB-XX3S	Bag G
BH28	48.90	49.30	B	200	F-NIRUPB-6LXF	Bag G
BH28	49.50	49.60	D	201	F-W9UUPB-N60Q	Bag D
BH28	50.10	50.23	B	204	F-XIUUPB-NLYV	Bag G
TOTALS	B [135] | D [49]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Wednesday 2022-06-15
Transmittal No	F-96AWPB-N723
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	50.40	50.50	D	206	F-WJUUPB-QXDS	Bag D
BH28	50.50	50.60	D	207	F-6KVUPB-GWJV	Bag D
BH28	51.40	51.50	D	211	F-0NVUPB-N2GP	Bag D
BH28	51.50	51.64	B	212	F-PBXUPB-LRLC	Bag G
BH28	51.64	51.90	B	213	F-RCXUPB-Y79B	Bag G
BH28	51.90	52.08	B	214	F-9DXUPB-93OQ	Bag G
BH28	52.65	52.73	D	216	F-AEXUPB-13FE	Bag D
BH28	53.00	53.10	D	219	F-WNYUPB-YY7N	Bag D
BH28	53.48	53.65	B	221	F-4UYUPB-A7XY	Bag C
BH28	54.40	54.50	D	226	F-G6ZUPB-2GRA	Bag D
BH28	54.50	54.60	D	227	F-OA0VPB-CMCA	Bag D
BH28	54.94	55.11	B	229	F-SE0VPB-0L9U	Bag C
BH28	55.38	55.48	D	231	F-II0VPB-9MC9	Bag D
BH28	55.48	55.60	B	232	F-DJ0VPB-722M	Bag C
BH28	56.00	56.39	B	233	F-1M3VPB-NN0G	Bag C
BH28	56.70	56.75	B	235	F-IN3VPB-FML4	Bag A
BH28	57.00	57.11	B	236	F-LI4VPB-EJ6S	Bag C
BH28	58.26	58.68	B	241	F-587VPB-JQM8	Bag B
BH28	58.68	58.88	B	242	F-987VPB-0TIB	Bag B
BH28	58.88	59.00	B	243	F-E87VPB-ZFFJ	Bag B
BH28	59.00	59.12	B	244	F-CP8VPB-UJIP	Bag C
BH28	59.12	59.22	B	245	F-LR8VPB-FJ8U	Bag A
BH28	59.52	59.67	B	248	F-BX8VPB-H5PX	Bag A
BH28	60.50	60.62	B	251	F-QTBVPB-UHZN	Bag A
BH28	60.88	60.90	D	253	F-XECVPB-LI1K	Bag D
BH28	61.89	61.93	B	256	F-XWCVPB-Q0TU	Bag A
BH28	62.00	62.20	B	259	F-AGFVPB-R00S	Bag A
BH28	64.29	64.44	B	266	F-FPIVPB-VTTQ	Bag A

TOTALS B [135] | D [49]

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Sample Movement

Project	Arklow Bank Wind Farm		
Contract No	F186642		
Site Contact	K Routledge	Sent To	Fugro Consett
Day & Date	Wednesday 2022-06-15	Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Transmittal No	F-UM1WPB-CCTU	Contact Name	John Ashworth
Schedule Attached	N	Contact Tel No	01207 581120
Contaminated	N	Special Requirements	N
Remarks	Core subsamples in core boxes.		

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	6.70	6.90	C	16	F-PEIRPB-ZZK5	BH28 BOX A
BH28	7.30	7.50	C	19	F-WFJRPB-A0JH	BH28 BOX C
BH28	7.80	8.00	C	22	F-8AKRPB-TLHJ	BH28 BOX B
BH28	9.60	9.80	C	31	F-VNORPB-XJOM	BH28 BOX C
BH28	12.65	12.85	C	52	F-OYTRPB-U489	BH28 BOX C
BH28	20.60	20.80	C	82	F-OOQSPB-UXCZ	BH28 BOX I
BH28	21.10	21.30	C	85	F-YSRSPB-QGFL	BH28 BOX A
BH28	22.75	22.90	C	92	F-RFXSPB-0U9F	BH28 BOX D
BH28	24.59	24.78	C	99	F-LW0TPB-I2TT	BH28 BOX A
BH28	25.26	25.50	C	103	F-0U1TPB-3H85	BH28 BOX A
BH28	25.70	25.90	C	105	F-1W2TPB-65DM	BH28 BOX D
BH28	26.10	26.40	C	106	F-NI3TPB-QYE2	BH28 BOX B
BH28	26.60	26.80	C	108	F-HA4TPB-0IX3	BH28 BOX D
BH28	27.50	27.75	C	112	F-CM6TPB-IYNX	BH28 BOX C
BH28	28.31	28.50	C	115	F-E39TPB-R2W6	BH28 BOX B
BH28	28.60	28.85	C	117	F-1OATPB-AGVU	BH28 BOX I
BH28	29.10	29.40	C	119	F-LEBTPB-RVXC	BH28 BOX B
BH28	29.60	29.85	C	121	F-U9DTPB-9E5D	BH28 BOX A
BH28	29.85	30.10	C	122	F-AADTPB-O2S3	BH28 BOX G
BH28	30.10	30.40	C	123	F-UADTPB-8Z35	BH28 BOX E
BH28	30.85	31.10	C	127	F-TBETPB-7G3G	BH28 BOX D
BH28	31.10	31.40	C	128	F-2DETPB-YRPI	BH28 BOX B
BH28	31.60	31.85	C	131	F-74GTPB-OSMN	BH28 BOX E
BH28	31.85	32.10	C	132	F-O4GTPB-E9VR	BH28 BOX C
BH28	32.50	32.80	C	135	F-NLHTPB-3V58	BH28 BOX D
BH28	32.80	33.10	C	136	F-2MHTPB-YC4G	BH28 BOX E
BH28	33.10	33.40	C	137	F-HMHTPB-9LNE	BH28 BOX E
BH28	41.25	41.40	C	165	F-31BUPB-P7AN	BH28 BOX A
BH28	41.60	41.78	C	168	F-VICUPB-LEOH	BH28 BOX L
BH28	41.78	41.90	C	169	F-PJCUPB-VLRC	BH28 BOX L
BH28	42.05	42.20	C	172	F-MMDUPB-KHL7	BH28 BOX H
BH28	42.20	42.35	C	173	F-1NDUPB-9S97	BH28 BOX I
BH28	42.70	42.90	C	176	F-O5FUPB-FGDF	BH28 BOX L
BH28	42.90	43.05	C	177	F-A6FUPB-WKK6	BH28 BOX I
BH28	43.60	43.85	C	182	F-YMGUPB-4GNF	BH28 BOX J
BH28	43.85	44.10	C	183	F-4OGUPB-Y0EJ	BH28 BOX G
BH28	44.10	44.30	C	184	F-QOGUPB-1ENK	BH28 BOX J
BH28	46.10	46.45	C	189	F-8SKUPB-V6YV	BH28 BOX F
BH28	46.57	46.77	C	192	F-DWMUPB-GEST	BH28 BOX J
BH28	46.77	46.96	C	193	F-GXMUPB-L25G	BH28 BOX I
BH28	49.60	49.85	C	202	F-YGUUPB-GLYL	BH28 BOX L
BH28	49.85	50.10	C	203	F-THUUPB-EQ6U	BH28 BOX L
BH28	50.23	50.40	C	205	F-GJUUPB-IVCU	BH28 BOX P
BH28	50.60	50.90	C	208	F-MKVUPB-6Z23	BH28 BOX N
BH28	50.90	51.20	C	209	F-ZKVUPB-5I1A	BH28 BOX O
BH28	51.20	51.40	C	210	F-CLVUPB-0VWD	BH28 BOX N
BH28	52.08	52.36	C	215	F-QDXUPB-T7AJ	BH28 BOX L
BH28	52.36	52.65	C	218	F-KUXUPB-KOUN	BH28 BOX G
BH28	52.73	53.00	C	217	F-UEXUPB-N3O5	BH28 BOX M
BH28	53.10	53.48	C	220	F-FTYUPB-HO7O	BH28 BOX N
BH28	53.65	53.88	C	222	F-PUYUPB-QQU2	BH28 BOX O
BH28	53.88	54.10	C	223	F-OVYUPB-TAHS	BH28 BOX J
TOTALS	C [79]					

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Plate 4.14

Sample Movement

Project	Arklow Bank Wind Farm		
Contract No	F186642		
Site Contact	K Routledge	Sent To	Fugro Consett
Day & Date	Wednesday 2022-06-15	Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Transmittal No	F-UM1WPB-CCTU	Contact Name	John Ashworth
Schedule Attached	N	Contact Tel No	01207 581120
Contaminated	N	Special Requirements	N
Remarks	Core subsamples in core boxes.		

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH28	54.10	54.25	C	224	F-93ZUPB-KCBK	BH28 BOX K
BH28	54.25	54.40	C	225	F-C3ZUPB-N11H	BH28 BOX I
BH28	54.60	54.94	C	228	F-YB0VPB-W094	BH28 BOX F
BH28	55.11	55.38	C	230	F-6H0VPB-6GOX	BH28 BOX J
BH28	56.39	56.69	C	234	F-7N3VPB-MPLT	BH28 BOX K
BH28	57.11	57.41	C	237	F-PM4VPB-1CSZ	BH28 BOX F
BH28	57.43	57.78	C	238	F-YM4VPB-2GD7	BH28 BOX K
BH28	57.80	57.95	C	239	F-D15VPB-D48G	BH28 BOX H
BH28	58.04	58.26	C	240	F-7Z6VPB-4I2A	BH28 BOX H
BH28	59.24	59.38	C	246	F-IS8VPB-92J7	BH28 BOX Q
BH28	59.39	59.50	C	247	F-5V8VPB-9S2I	BH28 BOX O
BH28	59.67	60.12	C	249	F-SY8VPB-KBKN	BH28 BOX K
BH28	60.13	60.50	C	250	F-F09VPB-XXR8	BH28 BOX M
BH28	60.62	60.87	C	252	F-5ECVPB-1UCT	BH28 BOX F
BH28	60.90	61.27	C	254	F-8NCVPB-981G	BH28 BOX G
BH28	61.31	61.89	C	255	F-9VCVPB-7FZ7	BH28 BOX H
BH28	61.93	62.00	C	258	F-S6DVPB-ZVSH	BH28 BOX P
BH28	61.93	62.00	C	257	F-L4DVPB-QHZJ	BH28 BOX P
BH28	62.24	62.51	C	260	F-62GVPB-3W5E	BH28 BOX O
BH28	62.52	63.11	C	261	F-T2GVPB-G9WY	BH28 BOX Q
BH28	63.12	63.50	C	262	F-X4GVPB-34NC	BH28 BOX N
BH28	63.50	63.84	C	263	F-BIIVPB-93GH	BH28 BOX M
BH28	63.85	64.07	C	264	F-GMIVPB-XJIT	BH28 BOX P
BH28	64.09	64.27	C	265	F-RNIVPB-N5WJ	BH28 BOX P
BH28	64.47	64.78	C	267	F-1SIVPB-QJS9	BH28 BOX M
BH28	64.78	64.87	C	268	F-KTIVPB-78DB	BH28 BOX P
BH28	64.87	65.00	C	269	F-WUIVPB-9LRG	BH28 BOX O
TOTALS	C [79]					

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Plate 4.15

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Monday 2022-06-20
Transmittal No	F-29Z4QB-LAES
Schedule Attached	N
Contaminated	N
Remarks	Stillage with large bags full of small bags.

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH09	0.00	0.02	D	1	F-2B60QB-3VQL	BH09 Bag E
BH09	1.00	1.35	B	2	F-7HB0QB-UN9V	BH09 Bag J
BH09	2.50	2.55	D	3	F-Q2I0QB-EAJ7	BH09 Bag E
BH09	4.00	4.15	B	4	F-1XK0QB-H64X	BH09 Bag J
BH09	5.00	5.35	B	5	F-XBM0QB-ZMIN	BH09 Bag J
BH09	5.35	5.40	D	6	F-FCM0QB-G68K	BH09 Bag E
BH09	5.50	5.70	B	7	F-9XO0QB-BD41	BH09 Bag J
BH09	5.70	5.90	B	8	F-QXO0QB-Q58C	BH09 Bag J
BH09	6.50	6.70	B	9	F-ZXR0QB-S1QR	BH09 Bag J
BH09	6.70	6.90	B	10	F-GYR0QB-EAO8	BH09 Bag J
BH09	8.00	8.35	B	11	F-9LU0QB-JYBF	BH09 Bag J
BH09	9.00	9.30	B	12	F-ERV0QB-ZKR0	BH09 Bag J
BH09	9.50	9.70	B	13	F-EIW0QB-3FBN	BH09 Bag J
BH09	9.70	9.90	B	14	F-LNW0QB-240W	BH09 Bag J
BH09	10.50	10.70	B	15	F-WDZ0QB-N69G	BH09 Bag J
BH09	10.70	10.95	B	16	F-IEZ0QB-I859	BH09 Bag J
BH09	12.00	12.10	D	17	F-UF21QB-27FG	BH09 Bag E
BH09	12.10	12.30	B	18	F-HG21QB-GDJO	BH09 Bag J
BH09	12.30	12.50	B	19	F-ZG21QB-XA3I	BH09 Bag J
BH09	12.50	12.70	B	20	F-EH21QB-VSKQ	BH09 Bag H
BH09	12.70	12.90	B	21	F-UH21QB-L4XA	BH09 Bag J
BH09	13.00	13.10	D	22	F-O441QB-TL9N	BH09 Bag E
BH09	13.33	14.40	D	29	F-XO81QB-LJUE	BH09 Bag E
BH09	13.50	13.60	D	25	F-6641QB-S1DS	BH09 Bag E
BH09	13.60	13.90	B	26	F-8Y51QB-5BJQ	BH09 Bag H
BH09	14.00	14.12	B	27	F-3N81QB-WNPS	BH09 Bag H
BH09	14.50	14.62	B	30	F-PS91QB-BUGG	BH09 Bag H
BH09	14.80	14.96	B	32	F-KU91QB-8ANP	BH09 Bag H
BH09	14.96	15.00	D	33	F-0V91QB-KSPT	BH09 Bag E
BH09	16.50	16.55	D	34	F-AZD1QB-ESLA	BH09 Bag E
BH09	16.75	16.80	D	36	F-D1E1QB-VHMJ	BH09 Bag E
BH09	17.00	17.40	B	37	F-CNE1QB-S9MH	BH09 Bag H
BH09	17.40	17.50	D	38	F-BOE1QB-DCZX	BH09 Bag E
BH09	17.50	17.59	D	39	F-A0G1QB-LXUD	BH09 Bag E
BH09	17.82	17.95	B	41	F-54G1QB-Z078	BH09 Bag H
BH09	18.50	19.02	B	42	F-IQM1QB-S7GT	BH09 Bag H
BH09	19.50	19.56	D	43	F-98O1QB-XKT4	BH09 Bag E
BH09	20.16	20.36	B	47	F-QAO1QB-SR8H	BH09 Bag F
BH09	20.36	20.40	D	48	F-4BO1QB-Y7CN	BH09 Bag E
BH09	20.50	20.54	D	49	F-GAP1QB-OR6V	BH09 Bag E
BH09	20.76	20.88	B	51	F-8BP1QB-TTKS	BH09 Bag H
BH09	20.95	21.50	B	52	F-YCQ1QB-IVGA	BH09 Bag H
BH09	22.50	23.00	B	53	F-D6T1QB-CE82	BH09 Bag I
BH09	23.00	23.10	B	54	F-TTU1QB-2JXU	BH09 Bag I
BH09	23.25	23.30	D	56	F-LUU1QB-ZYVP	BH09 Bag E
BH09	23.30	24.00	B	57	F-GQV1QB-86GP	BH09 Bag H
BH09	24.00	24.15	B	58	F-C8X1QB-4P5R	BH09 Bag I
BH09	24.27	24.32	D	60	F-U9X1QB-LJPX	BH09 Bag E
BH09	24.32	24.48	B	61	F-FAX1QB-AX5J	BH09 Bag I
BH09	24.48	25.00	B	62	F-BDY1QB-Z9K4	BH09 Bag I
BH09	25.50	25.85	B	63	F-NF02QB-TB6A	BH09 Bag I
BH09	25.85	26.00	B	64	F-4G02QB-XPKV	BH09 Bag I
TOTALS	B [94] | D [33]					

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Plate 4.16

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Monday 2022-06-20
Transmittal No	F-29Z4QB-LAES
Schedule Attached	N
Contaminated	N
Remarks	Stillage with large bags full of small bags.

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH09	26.00	26.40	B	65	F-XH02QB-YUKC	BH09 Bag I
BH09	26.50	26.80	B	66	F-7842QB-EQ6M	BH09 Bag I
BH09	27.00	27.40	B	67	F-5862QB-9HZR	BH09 Bag F
BH09	27.40	27.50	B	68	F-R862QB-E285	BH09 Bag F
BH09	27.50	28.00	B	69	F-DE72QB-AIQ2	BH09 Bag F
BH09	28.00	28.10	D	70	F-0F72QB-TCQY	Bag A
BH09	28.40	28.50	B	71	F-R792QB-LBVS	BH09 Bag F
BH09	28.50	29.00	B	72	F-J992QB-IVTD	BH09 Bag F
BH09	29.00	29.45	B	73	F-94C2QB-Q9XR	BH09 Bag F
BH09	30.00	30.20	B	74	F-MEG2QB-YDIJ	BH09 Bag F
BH09	30.20	30.40	B	75	F-2FG2QB-QI9H	BH09 Bag F
BH09	31.50	31.90	B	76	F-IVM2QB-ASQR	BH09 Bag F
BH09	31.90	31.95	D	77	F-9WM2QB-210E	Bag A
BH09	32.00	32.30	B	78	F-ZRO2QB-YI1L	BH09 Bag F
BH09	32.50	32.80	B	79	F-OFR2QB-3MQ3	BH09 Bag F
BH09	33.00	33.10	B	80	F-V3U2QB-VD3D	BH09 Bag F
BH09	34.50	34.75	B	81	F-XS33QB-NL14	BH09 Bag F
BH09	35.00	35.15	B	82	F-LR53QB-5H6W	BH09 Bag F
BH09	35.20	35.40	B	83	F-DP73QB-06BA	BH09 Bag F
BH09	35.40	35.53	B	84	F-6Q73QB-28NS	BH09 Bag G
BH09	35.88	36.00	B	86	F-7R73QB-VFE8	BH09 Bag G
BH09	36.00	36.13	B	87	F-5AB3QB-7BNC	BH09 Bag G
BH09	36.13	36.18	D	88	F-SAB3QB-NFOC	Bag A
BH09	36.42	36.63	B	92	F-2FB3QB-6RJU	BH09 Bag G
BH09	36.63	36.75	B	93	F-TFB3QB-ZXHR	BH09 Bag G
BH09	36.75	36.84	B	94	F-EGB3QB-NLI8	BH09 Bag G
BH09	36.84	37.25	B	95	F-5HB3QB-6TWU	BH09 Bag G
BH09	38.05	38.16	B	100	F-8RC3QB-1M1G	BH09 Bag G
BH09	38.38	38.40	D	102	F-WSC3QB-YXOT	Bag A
BH09	38.40	38.55	B	103	F-DVD3QB-DMIX	BH09 Bag G
BH09	39.19	39.32	B	107	F-10E3QB-VH8I	BH09 Bag G
BH09	39.32	39.44	B	108	F-I2E3QB-YR6J	BH09 Bag G
BH09	39.44	39.50	D	109	F-R3E3QB-RG31	Bag A
BH09	40.00	40.22	B	113	F-3ZG3QB-ENX7	Bag D
BH09	40.46	40.50	D	115	F-F0H3QB-BCTH	Bag A
BH09	40.92	41.13	B	117	F-UTI3QB-FZ68	Bag D
BH09	41.13	41.27	B	118	F-KUI3QB-NPIA	Bag C
BH09	41.27	41.33	D	119	F-4WI3QB-7PXW	Bag A
BH09	41.33	41.45	B	120	F-XWI3QB-LOLS	Bag D
BH09	41.45	41.50	B	121	F-JYI3QB-5G4B	Bag D
BH09	42.27	42.50	B	125	F-H1K3QB-56CG	Bag B
BH09	42.50	42.57	D	126	F-R9L3QB-X33P	Bag A
BH09	42.57	42.74	B	127	F-CAL3QB-5M0N	Bag D
BH09	42.74	42.87	B	128	F-YAL3QB-XNSM	Bag B
BH09	43.40	43.45	D	131	F-2DL3QB-S9AY	Bag A
BH09	43.45	43.50	D	132	F-5QM3QB-ZCK1	Bag A
BH09	44.06	44.14	B	136	F-CSM3QB-DE67	Bag D
BH09	44.14	44.33	B	137	F-WSM3QB-YJZA	Bag B
BH09	44.33	44.43	B	138	F-NTM3QB-X2EO	Bag D
BH09	44.43	44.50	B	139	F-4UM3QB-TN2M	Bag C
BH09	44.50	44.67	B	140	F-G7O3QB-T5PS	Bag C
BH09	45.32	45.45	B	143	F-BAO3QB-69VN	Bag B
TOTALS	B [94] | D [33]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Monday 2022-06-20
Transmittal No	F-29Z4QB-LAES
Schedule Attached	N
Contaminated	N
Remarks	Stillage with large bags full of small bags.

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH09	45.50	45.58	D	144	F-3BP3QB-DKH8	Bag A
BH09	45.97	46.07	B	147	F-9IP3QB-Q30G	Bag B
BH09	46.44	46.50	D	149	F-MKP3QB-PD5Z	Bag A
BH09	47.00	47.11	B	152	F-48R3QB-4ST5	Bag B
BH09	47.40	47.50	B	155	F-BBR3QB-0NYZ	Bag D
BH09	47.50	47.56	D	156	F-YJS3QB-EHJE	Bag A
BH09	47.85	47.96	B	158	F-YLS3QB-ENDA	Bag B
BH09	48.11	48.22	B	161	F-4PS3QB-K080	Bag C
BH09	48.50	48.66	B	163	F-9JT3QB-NHJ4	Bag D
BH09	49.22	49.30	B	166	F-7NT3QB-NNR3	Bag D
BH09	49.30	49.42	B	167	F-VNT3QB-A3X6	Bag B
BH09	49.42	49.50	B	168	F-GOT3QB-S38K	Bag D
BH09	49.50	49.62	B	169	F-HFU3QB-9JX2	Bag D
BH09	49.89	50.02	B	171	F-VGU3QB-38TL	Bag C
BH09	50.37	50.50	B	174	F-FIU3QB-84QC	Bag C
BH09	50.50	50.54	D	175	F-CIV3QB-M05J	Bag A
BH09	50.54	50.67	B	176	F-AJV3QB-9YKF	Bag C
BH09	51.23	51.31	D	180	F-NMV3QB-ACDP	Bag A
BH09	51.31	51.44	B	181	F-4NV3QB-WHA5	Bag C
BH09	51.44	51.50	D	182	F-SNV3QB-TI64	Bag A
BH09	51.50	51.58	B	183	F-BUY3QB-SKF9	Bag C
BH09	51.58	51.66	B	184	F-TVY3QB-1ZM5	Bag C
BH09	52.44	52.50	B	189	F-K1Z3QB-MFNR	Bag B
TOTALS	B [94] | D [33]					

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Plate 4.18

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Monday 2022-06-20
Transmittal No	F-8GN4QB-J9X9
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH09	13.10	13.30	C	23	F-A541QB-1T48	BH09 BOX G
BH09	13.30	13.50	C	24	F-R541QB-08QB	BH09 BOX G
BH09	14.12	14.33	C	28	F-ZN81QB-1I1U	BH09 BOX G
BH09	14.62	14.80	C	31	F-UT91QB-XREM	BH09 BOX G
BH09	16.55	16.75	C	35	F-N0E1QB-K6D5	BH09 BOX H
BH09	17.59	17.82	C	40	F-43G1QB-XXIL	BH09 BOX H
BH09	19.56	19.76	C	44	F-59O1QB-HAKF	BH09 BOX H
BH09	19.76	19.96	C	45	F-U9O1QB-5UUY	BH09 BOX C
BH09	19.96	20.16	C	46	F-8AO1QB-O5B8	BH09 BOX G
BH09	20.54	20.76	C	50	F-VAP1QB-ADRK	BH09 BOX G
BH09	23.10	23.25	C	55	F-4UU1QB-OZG1	BH09 BOX F
BH09	24.15	24.27	C	59	F-E9X1QB-3A4V	BH09 BOX C
BH09	35.53	35.88	C	85	F-NQ73QB-L4QH	BH09 BOX B
BH09	36.18	36.35	C	89	F-EBB3QB-FWUP	BH09 BOX K
BH09	36.34	36.39	C	90	F-MCB3QB-RLLK	BH09 BOX E
BH09	36.37	36.42	C	91	F-5EB3QB-U3ES	BH09 BOX G
BH09	37.50	37.61	C	96	F-TNC3QB-UU9K	BH09 BOX I
BH09	37.61	37.70	C	97	F-5PC3QB-IZU6	BH09 BOX H
BH09	37.70	37.90	C	98	F-WPC3QB-EY10	BH09 BOX K
BH09	37.90	38.05	C	99	F-KQC3QB-I5NR	BH09 BOX J
BH09	38.16	38.38	C	101	F-ZRC3QB-RSDP	BH09 BOX J
BH09	38.55	38.64	C	104	F-BWD3QB-ORQZ	BH09 BOX I
BH09	38.64	38.81	C	105	F-CXD3QB-UT97	BH09 BOX F
BH09	38.82	39.18	C	106	F-AYD3QB-XDG0	BH09 BOX D
BH09	39.50	39.74	C	110	F-BXG3QB-HJMK	BH09 BOX E
BH09	39.74	39.88	C	111	F-TXG3QB-A0SR	BH09 BOX K
BH09	39.88	40.00	C	112	F-FYG3QB-F3BR	BH09 BOX J
BH09	40.24	40.44	C	114	F-PZG3QB-CUJD	BH09 BOX A
BH09	40.50	40.92	C	116	F-TSI3QB-P5VM	BH09 BOX B
BH09	41.50	41.92	C	122	F-XYJ3QB-UZ6X	BH09 BOX C
BH09	41.92	42.11	C	123	F-20K3QB-XPP5	BH09 BOX I
BH09	42.11	42.27	C	124	F-S0K3QB-P5V4	BH09 BOX F
BH09	42.87	43.12	C	129	F-KBL3QB-Q1B8	BH09 BOX I
BH09	43.12	43.40	C	130	F-JCL3QB-1JSG	BH09 BOX A
BH09	43.52	43.78	C	133	F-OQM3QB-TSQE	BH09 BOX C
BH09	43.52	43.78	C	134	F-40N3QB-EWOO	BH09 BOX F
BH09	43.80	44.06	C	135	F-MRM3QB-C4U1	BH09 BOX D
BH09	44.69	45.08	C	141	F-C8O3QB-1YU4	BH09 BOX A
BH09	45.10	45.32	C	142	F-N9O3QB-WDAL	BH09 BOX J
BH09	45.58	45.82	C	145	F-SFP3QB-900X	BH09 BOX F
BH09	45.82	45.97	C	146	F-TGP3QB-YW76	BH09 BOX K
BH09	46.09	46.44	C	148	F-QJP3QB-G687	BH09 BOX D
BH09	46.50	46.72	C	150	F-I6R3QB-SF8T	BH09 BOX E
BH09	46.74	46.98	C	151	F-37R3QB-FFFS	BH09 BOX B
BH09	47.11	47.24	C	153	F-W8R3QB-ROES	BH09 BOX K
BH09	47.24	47.40	C	154	F-Z9R3QB-DU50	BH09 BOX F
BH09	47.58	47.83	C	157	F-2LS3QB-MH46	BH09 BOX E
BH09	47.96	48.05	C	159	F-UMS3QB-V611	BH09 BOX J
BH09	48.05	48.11	C	160	F-TNS3QB-RG2W	BH09 BOX K
BH09	48.22	48.50	C	162	F-OPS3QB-GK6X	BH09 BOX E
BH09	48.66	48.95	C	164	F-BLT3QB-H9EX	BH09 BOX B
BH09	48.97	49.20	C	165	F-3MT3QB-V05N	BH09 BOX E
TOTALS	C [62]					

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Plate 4.19

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Monday 2022-06-20
Transmittal No	F-8GN4QB-J9X9
Schedule Attached	N
Contaminated	N
Remarks	

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH09	49.64	49.87	C	170	F-5GU3QB-A6IW	BH09 BOX D
BH09	50.02	50.20	C	172	F-KHU3QB-S36Q	BH09 BOX J
BH09	50.20	50.37	C	173	F-0IU3QB-AF8W	BH09 BOX K
BH09	50.67	50.86	C	177	F-CKV3QB-TZOC	BH09 BOX C
BH09	50.86	51.02	C	178	F-ELV3QB-33DG	BH09 BOX I
BH09	51.02	51.23	C	179	F-4MV3QB-4V01	BH09 BOX J
BH09	51.66	51.95	C	185	F-HWY3QB-ODRS	BH09 BOX A
BH09	51.95	52.12	C	186	F-CXY3QB-FUN6	BH09 BOX K
BH09	52.12	52.25	C	187	F-3ZY3QB-1RRD	BH09 BOX F
BH09	52.25	52.44	C	188	F-E0Z3QB-4O2A	BH09 BOX I

TOTALS C [62]

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Thursday 2022-06-23
Transmittal No	F-6COAQB-KMZR
Schedule Attached	N
Contaminated	N
Remarks	Bulk bags with small bags in a folding stillage

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH12	1.50	1.75	B	1	F-GHT6QB-NEMB	BH12 BAG E
BH12	2.00	2.30	B	2	F-9GU6QB-TJJI	BH12 BAG E
BH12	3.00	3.50	B	3	F-W867QB-N3E5	BH12 BAG E
BH12	4.50	5.10	B	4	F-EU77QB-8UCW	BH12 BAG E
BH12	5.50	5.75	B	5	F-NS87QB-U431	BH12 BAG E
BH12	5.75	6.00	B	6	F-3V87QB-QS03	BH12 BAG E
BH12	6.00	6.25	B	7	F-IA97QB-I5MM	BH12 BAG E
BH12	6.25	6.50	B	8	F-2B97QB-CVHA	BH12 BAG E
BH12	7.00	8.00	B	9	F-ZCB7QB-RGYV	BH12 BAG E
BH12	8.50	9.50	B	10	F-TPH7QB-A4IY	BH12 BAG E
BH12	9.50	10.00	B	11	F-ZEI7QB-DM49	BH12 BAG E
BH12	10.00	10.30	B	12	F-IOI7QB-C6Q1	BH12 BAG E
BH12	10.30	10.50	B	13	F-O0J7QB-5KWJ	BH12 BAG C
BH12	11.00	11.30	B	14	F-BXK7QB-JF0I	BH12 BAG C
BH12	12.50	12.95	B	15	F-6XQ7QB-GSTD	BH12 BAG C
BH12	13.50	13.75	B	16	F-SHS7QB-D253	BH12 BAG C
BH12	13.75	13.92	B	17	F-PIS7QB-NERP	BH12 BAG C
BH12	14.00	14.20	B	19	F-TPT7QB-OQRB	BH12 BAG C
BH12	14.00	14.10	B	18	F-KYS7QB-L5N4	BH12 BAG C
BH12	14.20	14.50	B	20	F-JST7QB-ELGR	BH12 BAG C
BH12	15.00	15.30	B	21	F-DPW7QB-YXZ5	BH12 BAG C
BH12	16.50	16.65	B	22	F-KSZ7QB-WXBU	BH12 BAG C
BH12	17.50	17.75	B	23	F-RL38QB-40HK	BH12 BAG C
BH12	17.75	17.98	B	24	F-OM38QB-SRWA	BH12 BAG C
BH12	19.00	19.05	B	25	F-GX48QB-1NEQ	BH12 BAG C
BH12	19.05	19.30	B	26	F-X688QB-S6Y5	BH12 BAG C
BH12	21.00	21.55	B	27	F-XBC8QB-XFCT	BH12 BAG C
BH12	21.50	21.65	B	28	F-ISE8QB-OO3V	BH12 BAG C
BH12	21.86	21.95	D	30	F-WUE8QB-2Z6P	BH12 BAG D
BH12	22.00	22.05	D	31	F-QAG8QB-3WLL	BH12 BAG D
BH12	22.36	22.40	D	34	F-2HG8QB-7PYR	BH12 BAG D
BH12	22.40	22.50	B	35	F-NMG8QB-ZU8H	BH12 BAG B
BH12	23.00	23.05	B	36	F-M1I8QB-KH6F	BH12 BAG B
BH12	23.05	23.30	B	37	F-E3I8QB-WM8Q	BH12 BAG B
BH12	24.50	24.67	B	38	F-H6O8QB-CH71	BH12 BAG B
BH12	24.67	25.12	B	39	F-Y9O8QB-GPNW	BH12 BAG B
BH12	25.50	25.60	B	40	F-I2P8QB-LDHU	BH12 BAG B
BH12	26.00	26.19	B	43	F-ADQ8QB-RP4L	BH12 BAG B
BH12	26.50	26.59	B	45	F-79R8QB-VLJC	BH12 BAG B
BH12	26.59	26.76	B	46	F-S9R8QB-A8BH	BH12 BAG G
BH12	27.00	27.27	B	48	F-VJS8QB-CEE5	BH12 BAG B
BH12	27.36	27.40	D	50	F-TMS8QB-YLNP	BH12 BAG D
BH12	28.00	28.43	B	51	F-8SU8QB-1YAR	BH12 BAG B
BH12	29.00	29.20	B	52	F-XSV8QB-K16F	BH12 BAG B
BH12	29.40	29.44	D	55	F-6VV8QB-WNW5	BH12 BAG D
BH12	29.50	29.60	B	56	F-INW8QB-06J0	BH12 BAG B
BH12	29.80	29.84	D	58	F-DPW8QB-BZ3Q	BH12 BAG D
BH12	30.00	30.20	B	59	F-YZX8QB-4439	BH12 BAG B
BH12	30.20	30.40	B	61	F-Q0Y8QB-YTBB	BH12 BAG H
BH12	30.50	30.60	B	62	F-KJY8QB-YKX1	BH12 BAG B
BH12	30.80	30.85	D	64	F-4LY8QB-FW9U	BH12 BAG D
BH12	31.50	32.05	B	65	F-P539QB-2WJR	BH12 BAG A
TOTALS	B [92] | D [15]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Thursday 2022-06-23
Transmittal No	F-6COAQB-KMZR
Schedule Attached	N
Contaminated	N
Remarks	Bulk bags with small bags in a folding stillage

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH12	32.50	32.65	D	66	F-NO49QB-2XFL	BH12 BAG D
BH12	32.65	32.75	D	67	F-QK49QB-1M97	BH12 BAG D
BH12	33.00	33.20	B	68	F-XC59QB-XFBK	BH12 BAG A
BH12	33.20	33.30	B	69	F-6K59QB-CPJ2	BH12 BAG A
BH12	33.50	33.85	B	70	F-W179QB-CL6G	BH12 BAG A
BH12	34.50	34.86	B	71	F-MRA9QB-8I3Q	BH12 BAG A
BH12	34.86	34.97	B	72	F-6SA9QB-W0XE	BH12 BAG A
BH12	35.20	35.40	B	73	F-08C9QB-Q9N7	BH12 BAG A
BH12	35.60	35.70	D	75	F-4KC9QB-K380	BH12 BAG D
BH12	35.90	36.00	D	77	F-CLC9QB-FDJP	BH12 BAG D
BH12	36.00	36.20	B	78	F-YCE9QB-D6IH	BH12 BAG A
BH12	36.40	36.50	B	80	F-MFE9QB-IIB2	BH12 BAG A
BH12	36.50	36.70	B	81	F-93F9QB-Z1UO	BH12 BAG A
BH12	36.70	36.90	B	82	F-04F9QB-R3Y1	BH12 BAG H
BH12	36.90	37.00	B	83	F-Q4F9QB-I7H8	BH12 BAG A
BH12	37.00	37.04	D	85	F-ZII9QB-C5CW	BH12 BAG D
BH12	37.34	37.50	B	89	F-PSI9QB-Q6HI	BH12 BAG A
BH12	38.50	38.92	B	90	F-2GL9QB-SNT1	BH12 BAG A
BH12	39.00	39.07	B	91	F-AZM9QB-S602	BH12 BAG A
BH12	39.50	39.72	B	94	F-UYN9QB-P94K	BH12 BAG G
BH12	40.00	40.09	B	96	F-9BP9QB-7SLS	BH12 BAG H
BH12	40.09	40.29	B	99	F-6CP9QB-1BXL	BH12 BAG H
BH12	40.41	40.45	B	100	F-HGP9QB-EFG6	BH12 BAG G
BH12	40.50	40.54	B	101	F-JIQ9QB-59EX	BH12 BAG H
BH12	40.94	41.00	B	104	F-GKQ9QB-1XS6	BH12 BAG G
BH12	41.00	41.05	D	105	F-Y5V9QB-HXT0	BH12 BAG D
BH12	41.05	41.85	B	106	F-E7V9QB-K816	Standalone Bulk Sample
BH12	41.85	42.45	B	107	F-18V9QB-I3PY	Standalone Bulk Sample
BH12	42.45	42.50	D	108	F-Q8V9QB-9DS9	BH12 BAG D
BH12	42.50	42.59	B	110	F-D0Z9QB-78X8	BH12 BAG G
BH12	43.26	43.31	B	112	F-V5Z9QB-HGKO	BH12 BAG D
BH12	43.67	43.80	B	114	F-NHZ9QB-LGMW	BH12 BAG G
BH12	43.80	43.91	B	115	F-TJZ9QB-88EU	BH12 BAG H
BH12	43.91	44.00	B	116	F-SKZ9QB-96PM	BH12 BAG F
BH12	44.00	44.16	B	117	F-VS2AQB-2KN3	BH12 BAG F
BH12	45.40	45.50	B	121	F-323AQB-J1A6	BH12 BAG F
BH12	45.50	45.62	B	122	F-0V6AQB-1AOC	BH12 BAG H
BH12	46.33	46.37	B	124	F-9Y6AQB-T3YH	BH12 BAG G
BH12	46.78	46.88	B	128	F-G47AQB-4OFE	BH12 BAG G
BH12	46.88	46.94	D	129	F-697AQB-JCB8	BH12 BAG D
BH12	46.94	46.97	B	131	F-GQ8AQB-VARZ	BH12 BAG G
BH12	48.02	48.21	B	133	F-K7AAQB-NU0B	BH12 BAG F
BH12	48.51	48.64	B	135	F-W9AAQB-VY3Y	BH12 BAG H
BH12	49.19	49.28	B	137	F-DZBAQB-2TFH	BH12 BAG F
BH12	50.05	50.09	B	139	F-O1CAQB-KD1H	BH12 BAG F
BH12	50.61	50.67	B	142	F-XSKAQB-N4PR	BH12 BAG H
BH12	50.80	50.83	B	143	F-QTKAQB-28CW	BH12 BAG F
BH12	50.83	50.93	B	144	F-U0LAQB-FMX8	BH12 BAG F
BH12	50.93	51.00	B	145	F-J1LAQB-13WA	BH12 BAG G
BH12	51.05	51.19	B	146	F-P9OAQB-JY3X	BH12 BAG H
BH12	51.67	51.75	B	150	F-0KOAQB-AZZY	BH12 BAG H
BH12	51.91	52.15	B	152	F-0NOAQB-CPZX	BH12 BAG G
TOTALS	B [92] | D [15]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	K Routledge
Day & Date	Thursday 2022-06-23
Transmittal No	F-6COAQB-KMZR
Schedule Attached	N
Contaminated	N
Remarks	Bulk bags with small bags in a folding stillage

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH12	52.15	52.34	B	154	F-PNOAQB-GTFL	BH12 BAG H
BH12	52.52	52.63	B	156	F-80SAQB-HF01	BH12 BAG H
BH12	53.45	53.50	B	161	F-M5SAQB-3Y6V	BH12 BAG F

TOTALS B [92] | D [15]

Gaia.Forms (3.5.3872.a78796) - SampleMovement - PDF generated on 2022-07-28 16:08:56 by b.marsden

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	Karl Routledge
Day & Date	Thursday 2022-06-23
Transmittal No	F-Y7KBQB-8TOR
Schedule Attached	N
Contaminated	N
Remarks	Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH12	21.65	21.86	C	29	F-4TE8QB-C2EF	BH12 Box A
BH12	22.05	22.15	C	32	F-FDG8QB-N3CW	BH12 Box A
BH12	22.15	22.36	C	33	F-8FG8QB-THAR	BH12 Box A
BH12	25.60	25.80	C	41	F-A3P8QB-3FZ6	BH12 Box A
BH12	25.80	26.00	C	42	F-R3P8QB-ECOM	BH12 Box A
BH12	26.19	26.39	C	44	F-95Q8QB-3MF8	BH12 Box A
BH12	26.76	26.96	C	47	F-CCR8QB-226M	BH12 Box A
BH12	27.27	27.36	C	49	F-IKS8QB-IZ1K	BH12 Box B
BH12	29.20	29.40	C	53	F-PUV8QB-OGYH	BH12 Box B
BH12	29.60	29.80	C	57	F-7OW8QB-GTWC	BH12 Box B
BH12	30.60	30.80	C	63	F-6KY8QB-WQXW	BH12 Box B
BH12	35.40	35.60	C	74	F-3JC9QB-LB7B	BH12 Box B
BH12	35.70	35.90	C	76	F-SKC9QB-4C4H	BH12 Box B
BH12	36.20	36.40	C	79	F-LEE9QB-P2IJ	BH12 Box B
BH12	37.04	37.24	C	86	F-NKI9QB-DMBJ	BH12 Box C
BH12	37.24	37.34	C	88	F-MLI9QB-G70J	BH12 Box C
BH12	39.07	39.27	C	92	F-40N9QB-HGPB	BH12 Box C
BH12	39.27	39.48	C	93	F-X0N9QB-EH76	BH12 Box C
BH12	39.72	39.92	C	95	F-E0O9QB-QM5V	BH12 Box C
BH12	40.29	40.41	C	98	F-UCP9QB-LG8U	BH12 Box C
BH12	40.54	40.74	C	102	F-BJQ9QB-XZ4Y	BH12 Box C
BH12	40.74	40.94	C	103	F-YJQ9QB-0UTG	BH12 Box D
BH12	42.59	42.89	C	109	F-7ZY9QB-TYFG	BH12 Box D
BH12	42.93	43.26	C	111	F-E1Z9QB-NMS7	BH12 Box D
BH12	43.31	43.67	C	113	F-59Z9QB-N2CH	BH12 Box D
BH12	44.16	44.42	C	118	F-WT2AQB-ICY9	BH12 Box E
BH12	44.42	44.92	C	119	F-NW2AQB-ZLCX	BH12 Box E
BH12	44.92	45.40	C	120	F-IY2AQB-GUP2	BH12 Box E
BH12	45.62	46.33	C	123	F-QW6AQB-CI7Z	BH12 Box F
BH12	46.37	46.52	C	125	F-S07AQB-X55X	BH12 Box F
BH12	46.52	46.69	C	126	F-R17AQB-SG5B	BH12 Box F
BH12	46.69	46.78	C	127	F-537AQB-32H0	BH12 Box F
BH12	46.97	47.22	C	130	F-FA7AQB-VILR	BH12 Box G
BH12	47.22	48.02	C	132	F-N3AAQB-4ZGW	BH12 Box G
BH12	48.21	48.51	C	134	F-A8AAQB-PS92	BH12 Box G
BH12	48.64	49.19	C	136	F-0UBAQB-TN8N	BH12 Box H
BH12	49.28	50.05	C	138	F-01CAQB-SPLE	BH12 Box H
BH12	50.09	50.45	C	140	F-0RKAQB-P573	BH12 Box I
BH12	50.45	50.61	C	141	F-8SKAQB-MLD9	BH12 Box I
BH12	51.19	51.26	C	147	F-JEOAQB-8MQB	BH12 Box I
BH12	51.26	51.45	C	148	F-FFOAQB-QRCP	BH12 Box I
BH12	51.45	51.65	C	149	F-QHOAQB-RZC7	BH12 Box I
BH12	51.75	51.91	C	151	F-ZKOAQB-4OEJ	BH12 Box I
BH12	52.34	52.50	C	155	F-1POAQB-8WJN	BH12 Box J
BH12	52.63	52.93	C	157	F-D1SAQB-DE0A	BH12 Box J
BH12	52.93	53.06	C	158	F-M2SAQB-VM5F	BH12 Box J
BH12	53.06	53.32	C	159	F-L4SAQB-APX2	BH12 Box J
BH12	53.32	53.43	C	160	F-4OVAQB-JKKJ	BH12 Box J
TOTALS	C [48]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/ MN
Day & Date	Friday 2022-07-01
Transmittal No	F-1GEPQB-BOWS
Schedule Attached	Y
Contaminated	N
Remarks	B and D samples from BH10. Samples storaged in stillage with the samples from BH12

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	Y/N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH10	0.00	0.02	B	1	F-3FNMQB-C2R4	BAG A
BH10	1.00	1.10	B	2	F-I5RMQB-4OBS	BAG A
BH10	1.50	1.74	B	3	F-HVSMQB-DXHG	BAG A
BH10	2.00	2.35	B	4	F-20UMQB-SSC0	BAG A
BH10	2.50	2.80	B	5	F-7GXMQB-9R3U	BAG A
BH10	3.50	3.70	B	6	F-DJ4NQB-W70D	BAG A
BH10	5.00	5.12	B	7	F-44BNQB-92S2	BAG A
BH10	6.00	6.20	B	8	F-91GNQB-K853	BAG A
BH10	6.50	6.70	B	9	F-3FGNQB-O6IF	BAG A
BH10	7.50	7.70	B	10	F-ZVJNQB-9K2G	BAG A
BH10	7.70	8.30	B	11	F-KWJNQB-NYM3	BAG A
BH10	9.00	9.45	B	12	F-YLMNQB-OZTF	BAG A
BH10	9.45	9.70	B	13	F-TMMNQB-HOID	BAG A
BH10	10.00	10.20	B	14	F-6SNNQB-VA04	BAG A
BH10	10.20	10.30	B	15	F-ITNNQB-2EU2	BAG A
BH10	10.70	11.00	B	17	F-HMONQB-SERL	BAG A
BH10	11.50	12.00	B	18	F-B7VNQB-AWQP	BAG A
BH10	12.00	12.45	B	19	F-18VNQB-PM7Y	BAG B
BH10	13.00	13.50	B	20	F-8QXNQB-KXOA	BAG B
BH10	13.50	13.95	B	21	F-RQXNQB-8CKV	BAG B
BH10	14.00	14.12	B	22	F-5LYNQB-QR7E	BAG B
BH10	15.00	15.10	B	25	F-080OQB-PIAA	BAG B
BH10	15.10	15.30	B	26	F-L80OQB-785L	BAG H
BH10	15.50	15.70	B	28	F-C51OQB-32K4	BAG B
BH10	16.50	17.00	B	30	F-WA3OQB-PCE1	BAG B
BH10	17.00	17.50	B	31	F-OB3OQB-6DFW	BAG B
BH10	17.50	17.80	B	32	F-EA4OQB-JVZP	BAG B
BH10	18.00	18.20	B	34	F-KB5OQB-ME20	BAG B
BH10	18.20	18.35	B	35	F-BC5OQB-7YYX	BAG E
BH10	19.00	19.25	B	37	F-EA8OQB-S864	BAG B
BH10	19.50	20.25	B	40	F-V9EOQB-S812	Large B sample
BH10	19.61	19.66	D	38	F-M6EOQB-53OD	BAG F
BH10	20.25	21.00	B	41	F-KAEOQB-TZ8A	Large B sample
BH10	20.40	20.45	D	39	F-L8EOQB-494U	BAG F
BH10	21.25	21.51	B	43	F-Z8FOQB-IUAQ	BAG I
BH10	21.51	21.68	B	44	F-0AFOQB-EGY8	BAG E
BH10	22.30	22.50	B	47	F-DSFOQB-4VXD	BAG E
BH10	22.70	22.98	B	48	F-T3HOQB-977Y	BAG E
BH10	23.74	24.00	B	52	F-8IHOQB-QVMB	BAG E
BH10	24.00	24.17	B	53	F-KXKOQB-SYZN	BAG E
BH10	24.42	24.47	D	55	F-Q5LOQB-4QDY	BAG F
BH10	24.47	24.57	B	56	F-N6LOQB-EA5Y	BAG D
BH10	24.57	24.91	B	57	F-L8LOQB-K41A	BAG I
BH10	25.31	25.50	B	59	F-6ILOQB-CUIZ	BAG E
BH10	25.50	26.30	B	60	F-GZNOQB-2TLT	Large B sample
BH10	26.64	26.79	B	63	F-96OOQB-EST6	BAG D
BH10	27.00	27.09	B	64	F-8MSOQB-H5PF	BAG C
BH10	27.09	27.22	B	65	F-UOSOQB-VBPL	BAG C
BH10	27.22	27.30	B	66	F-KPSOQB-UCOF	BAG C
BH10	27.30	27.37	B	67	F-HQSOQB-5GBG	BAG C
BH10	28.90	29.00	B	68	F-VZUOQB-DTDB	BAG C
BH10	29.00	29.10	B	69	F-AXVOQB-5KP4	BAG C
TOTALS	B [109] | D [13]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/ MN
Day & Date	Friday 2022-07-01
Transmittal No	F-1GEPQB-BOWS
Schedule Attached	Y
Contaminated	N
Remarks	B and D samples from BH10. Samples storaged in stillage with the samples from BH12

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	Y/N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH10	29.10	29.20	B	70	F-3TWOQB-4Z2A	BAG C
BH10	29.50	29.55	D	71	F-250PQB-3NVT	BAG F
BH10	29.55	29.60	B	72	F-OA0PQB-IM06	BAG C
BH10	29.60	30.44	B	73	F-LB0PQB-524Q	Large B sample
BH10	30.44	30.64	B	74	F-ON3PQB-30ZV	BAG C
BH10	30.95	31.00	B	77	F-VP3PQB-EI1X	BAG C
BH10	31.74	32.01	B	78	F-TO5PQB-GKBW	BAG C
BH10	32.01	32.06	D	79	F-TS5PQB-8EH6	BAG F
BH10	32.06	32.45	B	80	F-9U5PQB-HVXI	Large B sample
BH10	32.45	32.50	B	81	F-2X5PQB-F4AB	BAG F
BH10	32.60	33.10	B	82	F-YKAPQB-OM75	Large B sample
BH10	33.10	33.60	B	83	F-6EBPQB-R8IO	Large B sample
BH10	33.60	34.00	B	84	F-T3DPQB-ISEP	Large B sample
BH10	34.00	34.50	B	85	F-D4DPQB-SIYU	Large B sample
BH10	35.00	35.75	B	86	F-5SGPQB-AVCM	Large B sample
BH10	35.75	36.50	B	87	F-3TGPQB-ZWWK	Large B sample
BH10	37.00	37.50	B	88	F-ICIPQB-30J7	BAG D
BH10	37.50	37.75	B	89	F-9GIPQB-FWWC	BAG D
BH10	38.15	38.35	B	91	F-ETJPQB-4JNS	BAG D
BH10	38.50	38.55	D	92	F-DSKPQB-FULG	BAG F
BH10	39.50	39.70	B	93	F-7LPPQB-PH6Y	BAG D
BH10	40.10	40.45	B	95	F-8RRPQB-R4LV	Large B sample
BH10	41.15	41.40	B	96	F-WBTPQB-BXLH	BAG C
BH10	41.92	42.22	B	98	F-DZUPQB-LMGM	BAG D
BH10	42.50	43.00	B	100	F-XLXPQB-8J65	Large B sample
BH10	43.00	43.10	D	101	F-MMXPQB-AGUL	BAG F
BH10	43.10	43.50	B	102	F-ANXPQB-TKVS	Large B sample
BH10	43.60	44.00	B	103	F-BJZPQB-57K9	Large B sample
BH10	44.18	44.50	B	105	F-QKZPQB-X5J8	Large B sample
BH10	44.50	44.57	B	106	F-YZ0QQB-KPV3	BAG D
BH10	44.85	45.00	B	108	F-211QQB-YZG8	BAG C
BH10	45.00	45.20	B	109	F-R32QQB-XGKV	BAG D
BH10	45.80	46.00	B	112	F-P52QQB-16JH	BAG D
BH10	46.40	46.50	B	114	F-C72QQB-0YKL	BAG C
BH10	46.80	46.90	B	115	F-H83QQB-KRJ9	BAG G
BH10	47.10	47.40	B	117	F-ZE3QQB-QCCL	BAG I
BH10	47.60	48.00	B	119	F-OG3QQB-HUW4	Large B sample
BH10	48.49	48.70	B	120	F-KV6QQB-YH1U	BAG H
BH10	48.70	49.10	B	121	F-1Y6QQB-0BMG	BAG G
BH10	49.10	49.50	B	122	F-8Z6QQB-5D8Y	BAG H
BH10	49.50	50.30	B	123	F-VI8QQB-WYAB	Large B sample
BH10	50.30	50.50	B	124	F-ZJ8QQB-GEWD	BAG G
BH10	50.50	50.80	B	125	F-3M8QQB-MJNP	BAG G
BH10	50.80	50.85	D	126	F-1N8QQB-UXEZ	BAG F
BH10	50.85	51.00	B	127	F-LN8QQB-FWM5	BAG G
BH10	51.65	51.78	B	130	F-6ABQQB-BD1C	BAG E
BH10	52.20	52.25	B	133	F-KFBQQB-XJHE	BAG E
BH10	52.25	52.35	B	134	F-IGBQQB-TB02	BAG H
BH10	52.35	52.50	B	135	F-UNBQQB-XN18	BAG G
BH10	52.50	53.25	B	137	F-7CFQQB-B7LR	Large B sample
BH10	53.66	53.75	B	139	F-2IIQQB-IBLH	BAG H
BH10	54.30	54.69	B	143	F-9WIQQB-CTL1	BAG G
TOTALS	B [109] | D [13]					

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/ MN
Day & Date	Friday 2022-07-01
Transmittal No	F-1GEPQB-BOWS
Schedule Attached	Y
Contaminated	N
Remarks	B and D samples from BH10. Samples storaged in stillage with the samples from BH12

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	Y/N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH10	54.69	54.75	B	144	F-5XIQQB-G8SS	BAG H
BH10	54.93	55.09	B	146	F-GONQQB-H8WI	BAG H
BH10	56.60	56.74	B	151	F-JOSQQB-YDWP	BAG H
BH10	56.74	56.80	B	152	F-UQSQQB-PJ00	BAG H
BH10	56.80	56.90	B	153	F-TRSQQB-G6IQ	BAG H
BH10	57.40	57.59	B	156	F-LXSQQB-CUZY	BAG E
BH10	57.80	58.18	B	158	F-BSYQQB-PPTX	Large B sample
BH10	58.18	58.29	B	159	F-CTYQQB-MXI3	BAG H
BH10	58.29	58.39	B	160	F-UUYQQB-C7S6	BAG H
BH10	58.75	58.79	D	163	F-C1ZQQB-DTR7	BAG F
BH10	58.96	59.00	D	166	F-Z4ZQQB-EXOB	BAG F
BH10	59.00	59.12	D	167	F-U24RQB-DZBR	BAG F
BH10	59.33	59.47	B	168	F-OI4RQB-CL3O	BAG H
BH10	59.64	59.67	D	170	F-CL4RQB-YGMJ	BAG F
BH10	59.67	59.88	B	171	F-2M4RQB-NH4Y	BAG H
BH10	60.99	61.15	B	174	F-JL0SQB-JGSJ	BAG I
BH10	61.40	61.45	D	179	F-TC1SQB-TQJD	BAG F
BH10	61.98	62.07	B	177	F-DY0SQB-GN83	BAG I

TOTALS B [109] | D [13]

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	Richard Tidmarsh
Day & Date	Saturday 2022-07-02
Transmittal No	F-RC3SQB-BFTQ
Schedule Attached	Y
Contaminated	N
Remarks	Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH10	10.50	10.70	C	16	F-8IONQB-V984	BH10 BOX J
BH10	14.12	14.29	C	23	F-YLYNQB-5DDV	BH10 BOX J
BH10	14.32	14.52	C	24	F-QMYNQB-PZLD	BH10 BOX K
BH10	15.30	15.50	C	27	F-I90OQB-XTO9	BH10 BOX J
BH10	15.70	15.90	C	29	F-Y51OQB-PKUI	BH10 BOX J
BH10	17.80	18.00	C	33	F-JB4OQB-1T82	BH10 BOX J
BH10	18.50	18.67	C	36	F-1H6OQB-2YB3	BH10 BOX J
BH10	21.00	21.25	C	42	F-Z7FOQB-TIIA	BH10 BOX E
BH10	21.68	22.10	C	45	F-6RFOQB-1C3B	BH10 BOX F
BH10	22.10	22.30	C	46	F-VRFOQB-OVKY	BH10 BOX H
BH10	22.98	23.23	C	49	F-T3HOQB-977Y	BH10 BOX G
BH10	23.23	23.50	C	50	F-UEHOQB-XV43	BH10 BOX E
BH10	23.50	23.74	C	51	F-GGHOQB-P19A	BH10 BOX F
BH10	24.17	24.42	C	54	F-L2LOQB-BWTF	BH10 BOX G
BH10	24.91	25.31	C	58	F-ZALOQB-MCTI	BH10 BOX G
BH10	26.30	26.51	C	61	F-A0OOQB-8955	BH10 BOX G
BH10	26.51	26.64	C	62	F-33OOQB-VA1D	BH10 BOX I
BH10	30.64	30.88	C	75	F-NO3PQB-KP0E	BH10 BOX E
BH10	30.88	30.95	C	76	F-EP3PQB-YLZL	BH10 BOX A
BH10	38.00	38.15	C	90	F-FSJPQB-EOJG	BH10 BOX J
BH10	39.80	40.00	C	94	F-3MPPQB-CMQP	BH10 BOX D
BH10	41.75	41.92	C	97	F-OYUPQB-969W	BH10 BOX G
BH10	42.22	42.34	C	99	F-YZUPQB-5FOR	BH10 BOX F
BH10	44.00	44.18	C	104	F-6KZPQB-2N56	BH10 BOX H
BH10	44.57	44.85	C	107	F-H01QQB-1KTW	BH10 BOX H
BH10	45.20	45.40	C	110	F-B42QQB-30OO	BH10 BOX C
BH10	45.40	45.80	C	111	F-252QQB-BGQE	BH10 BOX A
BH10	46.00	46.40	C	113	F-M62QQB-9IT3	BH10 BOX E
BH10	46.90	47.10	C	116	F-FB3QQB-RYU6	BH10 BOX B
BH10	47.40	47.60	C	118	F-WF3QQB-3A2X	BH10 BOX I
BH10	51.19	51.35	C	128	F-28BQQB-1FN2	BH10 BOX I
BH10	51.35	51.65	C	129	F-J9BQQB-PO8G	BH10 BOX I
BH10	51.78	51.96	C	131	F-5CBQQB-4DO4	BH10 BOX F
BH10	51.96	52.20	C	132	F-7EBQQB-0RG2	BH10 BOX B
BH10	53.25	53.43	C	136	F-OBFQQB-R2XG	BH10 BOX A
BH10	53.46	53.66	C	138	F-2HIQQB-5G18	BH10 BOX H
BH10	53.75	53.90	C	140	F-KJIQQB-89YO	BH10 BOX B
BH10	53.93	54.09	C	141	F-5PIQQB-Y89E	BH10 BOX F
BH10	54.09	54.25	C	142	F-1RIQQB-O6IN	BH10 BOX F
BH10	54.75	54.90	C	145	F-FYIQQB-5PXG	BH10 BOX D
BH10	55.09	55.45	C	147	F-ZZNQQB-QJTN	BH10 BOX A
BH10	55.45	56.20	C	148	F-P1OQQB-ODS7	BH10 BOX K
BH10	56.20	56.37	C	149	F-JDSQQB-VEI3	BH10 BOX B
BH10	56.37	56.60	C	150	F-BNSQQB-Y72Z	BH10 BOX B
BH10	56.90	57.10	C	154	F-NUSQQB-MQ0P	BH10 BOX H
BH10	57.10	57.40	C	155	F-8WSQQB-BRN4	BH10 BOX A
BH10	57.61	57.80	C	157	F-QQYQQB-0D51	BH10 BOX H
BH10	58.41	58.58	C	161	F-MYYQQB-IS7H	BH10 BOX C
BH10	58.60	58.75	C	162	F-VZYQQB-U2L4	BH10 BOX D
BH10	58.79	58.96	C	164	F-H2ZQQB-KYN3	BH10 BOX E
BH10	59.47	59.64	C	169	F-BK4RQB-7XC4	BH10 BOX B
BH10	59.88	60.30	C	172	F-JN4RQB-S0NV	BH10 BOX D
TOTALS	C [56]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	Richard Tidmarsh
Day & Date	Saturday 2022-07-02
Transmittal No	F-RC3SQB-BFTQ
Schedule Attached	Y
Contaminated	N
Remarks	Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH10	60.53	60.99	C	173	F-LI0SQB-AFOE	BH10 BOX C
BH10	61.15	61.40	C	175	F-FP0SQB-HF58	BH10 BOX D
BH10	61.45	61.98	C	176	F-JX0SQB-YWXG	BH10 BOX C
BH10	62.07	62.53	C	178	F-601SQB-B3FX	BH10 BOX I

TOTALS C [56]

Gaia.Forms (3.5.3872.a78796) - SampleMovement - PDF generated on 2022-07-28 16:13:01 by b.marsden

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	MN/RF
Day & Date	Tuesday 2022-07-05
Transmittal No	F-FUSXQB-VRQ8
Schedule Attached	Y
Contaminated	N
Remarks	BH 13 Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH13	12.10	12.37	C	18	F-B1JUQB-T34T	BOX K
BH13	12.37	12.64	C	19	F-P2JUQB-6O2A	BOX K
BH13	12.64	12.90	C	20	F-F5JUQB-6313	BOX I
BH13	13.33	13.50	C	24	F-SYKUQB-LN1A	BOX K
BH13	13.85	14.00	C	26	F-W2MUQB-BQ6Y	BOX K
BH13	15.60	15.80	C	30	F-W5UUQB-Y4J8	BOX K
BH13	16.16	16.40	C	33	F-LXUUQB-MS2U	BOX I
BH13	16.60	16.80	C	35	F-6YVUQB-TI6G	BOX H
BH13	17.05	17.25	C	38	F-S1XUQB-Q4B3	BOX J
BH13	17.25	17.45	C	39	F-E2XUQB-RWED	BOX G
BH13	19.20	19.40	C	43	F-841VQB-RM3G	BOX G
BH13	20.00	20.20	C	46	F-XD2VQB-26RI	BOX I
BH13	20.20	20.40	C	47	F-PE2VQB-HY22	BOX J
BH13	20.60	20.80	C	49	F-803VQB-88RO	BOX J
BH13	20.80	21.00	C	50	F-T03VQB-HOMW	BOX J
BH13	26.10	26.30	C	61	F-JTGVQB-SDXA	BOX I
BH13	26.30	26.45	C	62	F-8UGVQB-DBA2	BOX I
BH13	26.70	26.90	C	64	F-5THVQB-8CR3	BOX H
BH13	26.90	27.00	C	65	F-WTHVQB-EYI6	BOX I
BH13	27.05	27.15	C	67	F-LMIVQB-HCPC	BOX G
BH13	27.15	27.33	C	68	F-ONIVQB-WTMC	BOX J
BH13	31.00	31.17	C	74	F-2UVVQB-4AZC	BOX J
BH13	31.19	31.37	C	75	F-DYVVQB-0VS1	BOX K
BH13	31.35	31.47	C	77	F-ISXVQB-MCXE	BOX C
BH13	31.51	31.59	C	79	F-7YXVQB-Y8NH	BOX C
BH13	31.59	31.82	C	80	F-GZXVQB-1BOQ	BOX B
BH13	32.02	32.22	C	84	F-BE0WQB-HXOM	BOX C
BH13	32.22	32.39	C	85	F-5K0WQB-YWG1	BOX E
BH13	32.62	32.94	C	87	F-Q11WQB-UKYW	BOX E
BH13	33.91	34.15	C	94	F-YS7WQB-VNWU	BOX B
BH13	34.23	34.50	C	96	F-XW7WQB-RB2B	BOX B
BH13	34.52	34.68	C	97	F-PWBWQB-T1QF	BOX D
BH13	34.68	34.85	C	98	F-1ZBWQB-S65J	BOX D
BH13	34.85	34.97	C	99	F-20CWQB-JJWM	BOX A
BH13	35.21	35.43	C	103	F-O2CWQB-5B5U	BOX A
BH13	35.66	35.98	C	108	F-ANFWQB-VZLB	BOX C
BH13	35.98	36.16	C	109	F-RPFWQB-Q9EB	BOX C
BH13	36.51	36.79	C	113	F-LUFWQB-0B1P	BOX A
BH13	36.94	37.07	C	115	F-TWFWQB-3FRP	BOX A
BH13	38.20	38.39	C	118	F-DYIWQB-WUV0	BOX D
BH13	38.35	38.50	C	119	F-7ZIWQB-7BUO	BOX D
BH13	39.13	39.43	C	122	F-YZPWQB-YWXM	BOX B
BH13	39.59	39.90	C	124	F-P1QWQB-PW4X	BOX C
BH13	40.00	40.85	C	126	F-TATWQB-EDK6	BOX H
BH13	41.00	41.50	C	128	F-5NTWQB-8T8T	BOX A
BH13	41.50	43.00	C	129	F-9FVWQB-GARX	BOX L
BH13	43.00	43.70	C	130	F-0SXWQB-N51N	BOX F
BH13	43.70	44.25	C	131	F-KSXWQB-K63O	BOX F
BH13	44.58	45.26	C	134	F-HB0XQB-782L	BOX L
BH13	45.50	46.00	C	136	F-X92XQB-EVDZ	BOX E
BH13	46.00	46.37	C	137	F-NS4XQB-ZF3E	BOX E
BH13	46.37	47.27	C	138	F-DT4XQB-479L	BOX G
TOTALS	C [56]					

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Plate 4.30

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	MN/RF
Day & Date	Tuesday 2022-07-05
Transmittal No	F-FUSXQB-VRQ8
Schedule Attached	Y
Contaminated	N
Remarks	BH 13 Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH13	47.27	47.50	C	139	F-5U4XQB-BF67	BOX D
BH13	47.50	48.04	C	140	F-K38XQB-9VK3	BOX L
BH13	48.30	48.50	C	144	F-TA8XQB-039O	BOX B
BH13	48.70	48.93	C	146	F-MC8XQB-8W6Z	BOX D

TOTALS C [56]

Gaia.Forms (3.5.3872.a78796) - SampleMovement - PDF generated on 2022-07-28 16:14:36 by b.marsden

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/MN
Day & Date	Tuesday 2022-07-05
Transmittal No	F-HNFXQB-1VCB
Schedule Attached	N
Contaminated	N
Remarks	B and D samples BH13 located in far left container

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH13	0.00	0.05	D	1	F-35GTQB-9FER	BAG F
BH13	0.80	0.95	B	2	F-N7MTQB-CVZW	BAG E
BH13	1.30	1.45	B	3	F-CANTQB-37FA	BAG E
BH13	1.70	1.95	B	4	F-Y4OTQB-D9C6	BAG E
BH13	2.10	2.45	B	5	F-EAPTQB-0RLT	BAG E
BH13	3.00	3.88	B	6	F-A70UQB-XF71	Large B sample
BH13	4.00	4.30	B	7	F-YV2UQB-MEZJ	BAG E
BH13	4.30	4.50	B	8	F-NW2UQB-H58I	BAG E
BH13	4.50	4.68	B	9	F-QH3UQB-2QF9	BAG E
BH13	5.50	6.30	B	10	F-P16UQB-16LX	BAG E
BH13	7.00	7.70	B	11	F-DLAUQB-QM94	Large B sample
BH13	8.00	8.50	B	12	F-2JBUQB-0JD0	BAG E
BH13	8.50	9.00	B	13	F-MCCUQB-27RG	BAG E
BH13	9.50	9.70	B	14	F-7XEUQB-CSK8	BAG C
BH13	9.70	10.20	B	15	F-OXEUQB-V0LX	BAG B
BH13	11.00	11.70	B	16	F-HAHUQB-WGEX	BAG I
BH13	12.00	12.10	B	17	F-J0JUQB-ZW8M	BAG D
BH13	12.90	13.00	B	21	F-36JUQB-1ZH9	BAG D
BH13	13.00	13.14	B	22	F-QWKUQB-ER6A	BAG D
BH13	13.14	13.33	B	23	F-3YKUQB-56D1	BAG D
BH13	13.50	13.85	B	25	F-B0MUQB-8B44	BAG D
BH13	14.00	14.50	B	27	F-V4SUQB-2XAO	Large B sample
BH13	15.10	15.50	B	28	F-84TUQB-PA2R	BAG D
BH13	15.50	15.60	B	29	F-95UUQB-ZIWW	BAG D
BH13	15.80	15.90	B	31	F-F6UUQB-PXGN	BAG D
BH13	16.00	16.16	B	32	F-JWUUQB-P38I	BAG D
BH13	16.50	16.60	B	34	F-2XVUQB-YWRA	BAG D
BH13	16.80	16.90	B	36	F-OYVUQB-GILV	BAG D
BH13	17.00	17.05	B	37	F-A0XUQB-4M12	BAG D
BH13	17.50	18.20	B	40	F-NE0VQB-AJ9Y	Large B sample
BH13	18.20	19.00	B	41	F-2G0VQB-PR1W	Large B sample
BH13	19.00	19.20	B	42	F-R31VQB-87S2	BAG D
BH13	19.50	19.70	B	44	F-IT1VQB-X2R7	BAG C
BH13	19.70	19.90	B	45	F-FU1VQB-CLJ3	BAG C
BH13	20.50	20.60	B	48	F-NZ2VQB-IE0A	BAG D
BH13	21.00	21.50	B	51	F-YH5VQB-TYA4	BAG C
BH13	21.50	21.60	D	52	F-GI5VQB-0U5O	BAG F
BH13	21.65	27.85	B	71	F-UUJVQB-J4E2	BAG I
BH13	21.80	22.30	B	53	F-TB9VQB-470O	Large B sample
BH13	22.30	22.50	B	54	F-EO9VQB-Z6WI	BAG C
BH13	22.50	22.65	B	55	F-DLAVQB-ZIFA	BAG C
BH13	22.90	23.00	B	56	F-4JBVQB-5QKC	BAG C
BH13	23.00	23.50	B	57	F-UJBVQB-MT7P	BAG C
BH13	24.90	25.50	B	58	F-FZFVQB-B2PO	Large B sample
BH13	25.50	26.00	B	59	F-D0GVQB-YM93	Large B sample
BH13	26.00	26.10	B	60	F-USGVQB-VNHM	BAG C
BH13	26.50	26.70	B	63	F-ARHVQB-B9OY	BAG B
BH13	27.00	27.05	D	66	F-RLIVQB-MFD2	BAG F
BH13	27.33	27.40	D	69	F-COIVQB-0THR	BAG F
BH13	27.50	21.65	B	70	F-9PJVQB-SAZA	BAG I
BH13	28.50	29.00	B	72	F-D4MVQB-DRGM	BAG I
BH13	30.00	30.15	B	73	F-BSTVQB-V5OX	BAG I
TOTALS	B [76] | D [12]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/MN
Day & Date	Tuesday 2022-07-05
Transmittal No	F-HNFXQB-1VCB
Schedule Attached	N
Contaminated	N
Remarks	B and D samples BH13 located in far left container

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH13	31.07	31.35	B	82	F-WQXVQB-LX6H	BAG B
BH13	31.47	31.51	D	78	F-IXXVQB-V0B4	BAG F
BH13	31.82	32.00	B	81	F-60YVQB-V3HR	BAG B
BH13	32.00	32.02	D	83	F-9VZVQB-T4QX	BAG F
BH13	32.13	32.20	D	89	F-C51WQB-625I	BAG F
BH13	32.39	32.62	B	86	F-F01WQB-U1RV	BAG B
BH13	32.94	32.13	B	88	F-V31WQB-NIBO	BAG I
BH13	33.00	33.50	B	90	F-7G7WQB-GFDW	Large B sample
BH13	33.50	33.59	B	91	F-YI7WQB-47LQ	BAG A
BH13	33.59	33.77	B	92	F-6K7WQB-9EM1	BAG A
BH13	33.77	33.91	B	93	F-XL7WQB-J1J5	BAG A
BH13	34.15	34.23	B	95	F-2W7WQB-CLXJ	BAG A
BH13	34.97	35.02	D	100	F-U0CWQB-G0MF	BAG F
BH13	35.02	35.06	D	101	F-D1CWQB-XXDL	BAG F
BH13	35.06	35.21	B	106	F-Z1CWQB-Z6TJ	BAG A
BH13	35.43	35.58	B	105	F-B3CWQB-IT5T	BAG G
BH13	35.62	35.76	B	107	F-MFFWQB-4AX7	BAG A
BH13	36.20	36.26	D	110	F-QRFWQB-ZHMT	BAG F
BH13	36.28	36.45	B	111	F-QSFWQB-YGCN	BAG H
BH13	36.45	36.51	D	112	F-VTFWQB-879H	BAG F
BH13	36.88	36.94	B	114	F-IVFWQB-E3H6	BAG G
BH13	37.07	37.21	B	116	F-FUIWQB-O0QZ	BAG G
BH13	37.22	38.20	B	117	F-LWIWQB-KHSW	Large B sample
BH13	38.50	38.76	B	120	F-1YPWQB-XAYG	BAG A
BH13	38.86	39.00	B	121	F-UYPWQB-YRCK	BAG G
BH13	39.43	39.57	B	123	F-Y0QWQB-S88J	BAG G
BH13	39.90	39.94	B	125	F-A7QWQB-QC2Q	BAG B
BH13	40.85	41.00	B	127	F-7MTWQB-F0I2	BAG H
BH13	44.25	44.39	B	132	F-9TXWQB-LBBB	BAG G
BH13	44.39	44.58	B	133	F-V30XQB-6XXK	BAG H
BH13	45.26	45.50	B	135	F-492XQB-665X	Large B sample
BH13	48.04	48.10	D	141	F-348XQB-P7VB	BAG F
BH13	48.10	48.17	B	142	F-R48XQB-VNL7	BAG G
BH13	48.20	48.30	B	143	F-M58XQB-86QH	BAG B
BH13	48.57	48.70	B	145	F-KB8XQB-S4P6	BAG G
BH13	48.93	49.00	B	147	F-FH8XQB-NC9S	Large B sample
TOTALS	B [76] | D [12]					

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Plate 4.33

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/ MN
Day & Date	Friday 2022-07-08
Transmittal No	F-ZG82RB-JX2I
Schedule Attached	N
Contaminated	N
Remarks	BH20 B and D samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH20	0.00	0.50	B	1	F-8IQZQB-AHDT	Large B sample
BH20	0.50	1.00	B	2	F-TFSZQB-BOOH	Large B sample
BH20	1.00	1.50	B	3	F-8CTZQB-8YRH	Large B sample
BH20	1.50	1.90	B	4	F-R1XZQB-EJ29	Large B sample
BH20	1.90	2.20	B	5	F-E2XZQB-B980	Large B sample
BH20	2.60	2.80	B	6	F-BEF0RB-QN68	BAG A
BH20	4.10	4.30	B	7	F-ETJ0RB-4HK5	BAG A
BH20	4.60	4.75	D	8	F-JUK0RB-HYZ0	BAG I
BH20	4.75	4.85	D	9	F-BVK0RB-3TYS	BAG I
BH20	5.20	5.30	B	10	F-CZL0RB-9ITK	BAG A
BH20	5.60	5.93	B	12	F-3SN0RB-ENM5	BAG A
BH20	6.60	7.10	B	13	F-TMR0RB-XAQZ	BAG A
BH20	7.10	7.55	B	14	F-ONR0RB-WT6M	BAG A
BH20	7.60	7.65	D	15	F-8NT0RB-A4PT	BAG I
BH20	7.65	7.85	B	16	F-VOT0RB-3JZ9	BAG C
BH20	8.10	8.20	B	18	F-OKU0RB-LA0S	BAG A
BH20	8.40	8.45	D	20	F-KLU0RB-NTTG	BAG I
BH20	8.60	8.70	B	21	F-ZAV0RB-UF77	BAG A
BH20	9.10	9.20	B	24	F-D0W0RB-TZG1	BAG A
BH20	10.10	10.50	B	26	F-XTY0RB-80KN	BAG A
BH20	10.50	10.90	B	27	F-OUY0RB-9XK8	BAG A
BH20	11.10	11.20	B	28	F-IZZ0RB-EBZH	BAG C
BH20	11.20	11.36	B	29	F-L101RB-A9ZO	BAG B
BH20	11.60	11.77	B	31	F-WL01RB-M5Z9	BAG C
BH20	12.10	12.15	D	33	F-BX11RB-7EZW	BAG I
BH20	12.60	12.65	B	36	F-SK21RB-FVVB	BAG C
BH20	13.60	14.00	B	39	F-5551RB-PF03	BAG C
BH20	14.00	14.40	B	40	F-8651RB-1AUE	BAG C
BH20	14.60	14.65	B	41	F-7A61RB-Y40Z	BAG C
BH20	14.65	14.82	B	42	F-PA61RB-B224	BAG B
BH20	15.10	15.20	B	44	F-1Z61RB-VQKR	BAG C
BH20	15.60	15.67	D	47	F-1Y91RB-OX7Z	BAG I
BH20	16.10	16.30	B	49	F-Y2B1RB-PICB	BAG C
BH20	17.10	17.20	B	52	F-I6D1RB-XQIU	BAG C
BH20	17.60	17.96	B	53	F-PAE1RB-XX6Y	BAG C
BH20	18.60	19.00	B	54	F-01I1RB-U9TD	BAG C
BH20	19.60	20.00	B	55	F-SHJ1RB-E1EI	BAG C
BH20	20.10	20.50	B	56	F-QKK1RB-PKBD	BAG B
BH20	21.10	21.50	B	57	F-B6N1RB-U2ZX	BAG B
BH20	22.60	23.10	B	58	F-PBR1RB-EA2D	BAG B
BH20	23.60	24.00	B	59	F-62S1RB-E8WE	BAG B
BH20	24.10	24.50	B	60	F-VUS1RB-OMWA	BAG B
BH20	25.10	25.50	B	61	F-04W1RB-WLIQ	BAG B
BH20	26.60	27.10	B	62	F-TUY1RB-R94V	BAG B
BH20	27.60	27.96	B	63	F-3XZ1RB-AE5O	BAG G
BH20	28.10	28.50	B	64	F-J512RB-3TMA	BAG G
BH20	29.10	29.50	B	65	F-1Q32RB-JLFU	BAG G
BH20	30.60	31.00	B	66	F-7UH2RB-RLFN	BAG G
BH20	31.00	31.35	B	67	F-FVH2RB-VSKM	BAG G
BH20	31.60	31.80	B	68	F-RLI2RB-DEOR	BAG G
BH20	31.80	32.00	B	69	F-GMI2RB-54M3	BAG G
BH20	32.10	32.35	B	70	F-17J2RB-2LMK	BAG G
TOTALS	B [87] | D [6]					

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FUGRO

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/ MN
Day & Date	Friday 2022-07-08
Transmittal No	F-ZG82RB-JX2I
Schedule Attached	N
Contaminated	N
Remarks	BH20 B and D samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH20	32.35	32.60	B	71	F-19J2RB-X3MZ	BAG G
BH20	33.10	33.50	B	72	F-AZN2RB-4EAK	BAG E
BH20	33.50	33.85	B	73	F-03O2RB-MLV3	BAG E
BH20	34.60	35.00	B	74	F-E6R2RB-62JB	BAG E
BH20	35.00	35.25	B	75	F-77R2RB-5VVY	BAG E
BH20	35.60	35.80	B	76	F-L7S2RB-PIIW	BAG E
BH20	35.80	36.05	B	77	F-H8S2RB-QDJZ	BAG E
BH20	36.10	36.35	B	78	F-IRS2RB-7I8Y	BAG E
BH20	36.35	36.60	B	79	F-DSS2RB-ZVWN	BAG E
BH20	37.10	37.45	B	80	F-VIV2RB-ZGIG	BAG E
BH20	37.45	37.80	B	81	F-XJV2RB-IZZR	BAG E
BH20	38.60	38.90	B	82	F-14Y2RB-IKL3	BAG F
BH20	38.90	39.45	B	83	F-75Y2RB-LBY6	BAG G
BH20	39.60	39.85	B	84	F-I0Z2RB-PNVF	BAG F
BH20	39.85	40.10	B	85	F-H1Z2RB-LP9R	BAG F
BH20	40.10	40.35	B	86	F-AKZ2RB-VAC4	BAG F
BH20	40.35	40.60	B	87	F-ZKZ2RB-DW4B	BAG G
BH20	41.10	41.40	B	88	F-N723RB-5VBP	BAG F
BH20	41.40	41.70	B	89	F-B823RB-DEGP	BAG F
BH20	42.60	43.10	B	90	F-UU73RB-JQD5	BAG F
BH20	43.60	44.04	B	91	F-CP83RB-SGEW	BAG F
BH20	44.10	44.60	B	92	F-WA93RB-J18B	BAG F
BH20	45.10	45.50	B	93	F-2KC3RB-ZH29	BAG F
BH20	46.60	47.20	B	94	F-DBF3RB-7QL7	BAG D
BH20	47.60	48.00	B	95	F-GWF3RB-NUDM	BAG D
BH20	48.00	48.50	B	96	F-GJG3RB-GAXP	BAG D
BH20	49.10	49.50	B	97	F-R1L3RB-Z9TB	BAG D
BH20	50.60	51.00	B	98	F-UON3RB-75VU	BAG D
BH20	51.60	52.10	B	99	F-8QO3RB-C3ZF	BAG D
BH20	52.10	52.25	B	100	F-OZP3RB-WFKC	BAG D
BH20	53.10	53.70	B	101	F-UNS3RB-OSBO	BAG D
BH20	54.60	55.20	B	102	F-J1W3RB-T2IM	BAG H
BH20	55.50	55.80	B	103	F-P2X3RB-S82O	BAG H
BH20	55.80	56.18	B	104	F-L4X3RB-DRPH	BAG H
BH20	56.18	56.60	B	105	F-32Y3RB-IPXA	BAG H
BH20	57.10	57.35	B	106	F-4H34RB-8X4U	BAG H
BH20	57.35	57.65	B	107	F-3I34RB-L7X3	BAG H
BH20	58.60	59.00	B	108	F-9474RB-R6B7	BAG H
BH20	59.00	59.40	B	109	F-N574RB-A1YN	BAG H
BH20	59.60	59.80	B	110	F-WD84RB-Y8VW	BAG H
BH20	59.80	60.00	B	111	F-ZE84RB-R6IY	BAG H

TOTALS B [87] | D [6]

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Plate 4.35

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	RF/MN
Day & Date	Saturday 2022-07-09
Transmittal No	F-NYK4RB-43Q1
Schedule Attached	N
Contaminated	N
Remarks	BH20 Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	Y/N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH20	5.30	5.50	C	11	F-WZL0RB-KV0D	BOX A
BH20	7.85	8.05	C	17	F-KQT0RB-ZQEL	BOX B
BH20	8.20	8.40	C	19	F-8LU0RB-FOFU	BOX B
BH20	8.70	8.90	C	22	F-NBV0RB-8Z49	BOX B
BH20	8.90	9.10	C	23	F-5CV0RB-MBH5	BOX A
BH20	9.20	9.40	C	25	F-V0W0RB-VQEN	BOX B
BH20	11.40	11.60	C	30	F-H201RB-BS1Z	BOX C
BH20	11.77	11.97	C	32	F-DM01RB-SVZF	BOX B
BH20	12.15	12.25	C	34	F-0Y11RB-E67T	BOX A
BH20	12.29	12.50	C	35	F-OZ11RB-UJXA	BOX C
BH20	12.65	12.85	C	37	F-6L21RB-CZUK	BOX A
BH20	12.90	13.10	C	38	F-GN21RB-0RP2	BOX C
BH20	14.85	15.05	C	43	F-OB61RB-16UR	BOX C
BH20	15.20	15.35	C	45	F-PZ61RB-AOWT	BOX A
BH20	15.37	15.58	C	46	F-R071RB-0FFF	BOX A
BH20	15.67	15.92	C	51	F-OY91RB-54RJ	BOX A
BH20	16.30	16.60	C	50	F-G4B1RB-UVZA	BOX B

TOTALS C [17]

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	MN/RF
Day & Date	Wednesday 2022-07-13
Transmittal No	F-ICHBRB-2PTV
Schedule Attached	N
Contaminated	N
Remarks	BH08 Waxed core samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	Y/N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH08	17.32	17.56	C	31	F-4FR8RB-ETF7	BOX F
BH08	17.80	18.01	C	33	F-PJS8RB-8Q3W	BOX E
BH08	18.35	18.55	C	35	F-YAT8RB-9M89	BOX A
BH08	18.55	18.75	C	36	F-XBT8RB-HW0V	BOX A
BH08	18.85	19.05	C	39	F-IFU8RB-0ME1	BOX C
BH08	19.05	19.25	C	40	F-YFU8RB-1KGZ	BOX E
BH08	20.95	21.10	C	44	F-WTY8RB-LY4I	BOX E
BH08	21.40	21.60	C	47	F-SC09RB-M6WK	BOX D
BH08	21.60	21.79	C	48	F-7D09RB-7PKO	BOX B
BH08	21.94	22.08	C	50	F-VW09RB-C9R8	BOX E
BH08	22.08	22.29	C	51	F-HX09RB-2Q1A	BOX C
BH08	22.52	22.72	C	53	F-IT19RB-IW8H	BOX B
BH08	24.96	25.16	C	60	F-4I99RB-O14E	BOX A
BH08	25.16	25.30	C	61	F-OI99RB-VU2B	BOX C
BH08	25.47	25.67	C	63	F-OYA9RB-RE5M	BOX E
BH08	25.67	25.79	C	64	F-OZA9RB-4TYG	BOX F
BH08	25.85	26.05	C	66	F-EUB9RB-HXKK	BOX C
BH08	26.05	26.25	C	67	F-4VB9RB-QOP8	BOX B
BH08	28.89	29.10	C	74	F-9VJ9RB-WDXX	BOX E
BH08	29.10	29.26	C	75	F-6XJ9RB-AIKS	BOX D
BH08	31.03	31.30	C	82	F-LER9RB-P227	BOX C
BH08	31.50	31.67	C	84	F-GFS9RB-ZFQD	BOX C
BH08	31.67	31.94	C	85	F-1GS9RB-PJ2L	BOX D
BH08	31.94	32.20	C	86	F-WGS9RB-H153	BOX D
BH08	32.40	32.64	C	89	F-IRT9RB-QDJK	BOX B
BH08	32.64	32.89	C	90	F-YRT9RB-1UDY	BOX A
BH08	35.05	35.20	C	96	F-JRW9RB-W6I3	BOX B
BH08	47.90	48.07	C	121	F-D7NARB-AC6I	BOX D
BH08	48.07	48.23	C	122	F-Z7NARB-AD8Z	BOX F
BH08	51.30	51.55	C	129	F-ZHVARB-D1KU	BOX D
BH08	51.80	52.05	C	131	F-LKVARB-CGZS	BOX A
BH08	52.05	52.23	C	132	F-9LVARB-AVL7	BOX B
BH08	57.50	57.80	C	136	F-UAOBRB-V5KD	BOX F
TOTALS	C [33]					

Gaia.Forms (3.5.3872.a78796) - SampleMovement - PDF generated on 2022-07-28 16:18:48 by b.marsden

Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	MN/RF
Day & Date	Wednesday 2022-07-13
Transmittal No	F-ZY9BRB-XOUR
Schedule Attached	Y
Contaminated	N
Remarks	BH08 B and D samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH08	0.00	0.50	B	1	F-7RM7RB-36HK	Large bulk bag
BH08	0.50	1.00	B	2	F-KAN7RB-EHW7	Large bulk bag
BH08	1.00	1.50	B	3	F-1AO7RB-IA4Q	Large bulk bag
BH08	1.50	2.00	B	4	F-5VO7RB-OH2M	Large bulk bag
BH08	2.00	2.50	B	5	F-1EP7RB-4EUM	Large bulk bag
BH08	2.80	3.20	B	6	F-17Y7RB-XUEC	BAG E
BH08	4.30	4.70	B	7	F-EG08RB-T1I9	BAG E
BH08	5.30	5.50	B	8	F-A818RB-T0I1	BAG E
BH08	5.50	5.75	B	9	F-X818RB-E5RE	BAG E
BH08	5.80	6.10	B	10	F-IS18RB-PCPA	BAG E
BH08	6.10	6.30	B	11	F-4T18RB-93PZ	BAG E
BH08	6.80	7.00	B	12	F-FE48RB-W7ZH	BAG E
BH08	7.00	7.35	B	13	F-4F48RB-59RD	BAG E
BH08	8.30	8.60	B	14	F-N998RB-CV18	BAG E
BH08	9.30	9.50	B	15	F-D8A8RB-S5RD	BAG E
BH08	9.50	9.75	B	16	F-09A8RB-YMDH	BAG E
BH08	9.80	10.00	B	17	F-1PA8RB-R3CJ	BAG E
BH08	10.00	10.30	B	18	F-SPA8RB-QOWS	BAG E
BH08	10.80	11.10	B	19	F-ILD8RB-OKDT	BAG G
BH08	11.10	11.50	B	20	F-BMD8RB-5EFM	BAG G
BH08	12.30	12.70	B	21	F-VNG8RB-104K	BAG G
BH08	12.70	13.10	B	22	F-4RG8RB-95OI	BAG G
BH08	13.30	13.65	B	23	F-DWH8RB-3IMK	BAG G
BH08	13.80	14.00	B	24	F-QNI8RB-LCBM	BAG G
BH08	14.00	14.30	B	25	F-9OI8RB-P88T	BAG G
BH08	14.80	15.20	B	26	F-QDL8RB-UGRH	BAG G
BH08	15.20	15.40	B	27	F-MEL8RB-CZOS	BAG G
BH08	16.30	16.80	B	28	F-F7Q8RB-I73D	BAG B
BH08	16.80	17.05	B	29	F-S9Q8RB-Q5BX	BAG B
BH08	17.05	17.15	D	30	F-EAQ8RB-IT8L	BAG H
BH08	17.56	17.80	B	32	F-DGR8RB-1C6C	BAG F
BH08	18.30	18.35	D	34	F-FAT8RB-6MRL	BAG H
BH08	18.75	18.80	D	37	F-PCT8RB-F9TG	BAG H
BH08	18.80	18.85	D	38	F-ZEU8RB-0E4W	BAG H
BH08	19.25	19.30	D	41	F-DGU8RB-SBJR	BAG H
BH08	19.80	20.48	B	42	F-3CX8RB-4663	BAG B
BH08	20.80	20.95	B	43	F-BSY8RB-EQOW	BAG B
BH08	21.10	21.29	B	45	F-E0Z8RB-SJSS	BAG C
BH08	21.30	21.40	B	46	F-7B09RB-IQBU	BAG B
BH08	21.80	21.94	B	49	F-LV09RB-58G5	BAG B
BH08	22.30	22.52	B	52	F-MS19RB-P7B1	BAG B
BH08	22.72	22.76	D	54	F-TU19RB-SOH2	BAG H
BH08	23.30	23.86	B	55	F-8V69RB-0P4X	Large bulk bag
BH08	24.30	24.52	B	56	F-KR89RB-AMWO	BAG B
BH08	24.52	24.72	B	57	F-4S89RB-6ZQD	BAG D
BH08	24.72	24.76	D	58	F-US89RB-HY5J	BAG H
BH08	24.80	24.96	B	59	F-KF99RB-RJPS	BAG B
BH08	25.30	25.47	B	62	F-RXA9RB-H2WH	BAG B
BH08	25.80	25.85	D	65	F-NTB9RB-TD4Q	BAG H
BH08	26.25	26.30	D	68	F-NVB9RB-YODY	BAG H
BH08	26.80	27.32	B	69	F-UEG9RB-LQ1G	BAG B
BH08	27.80	27.90	B	70	F-19I9RB-JK73	BAG F
TOTALS	B [88] | D [15]					

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Sample Movement

Project	Arklow Bank Wind Farm
Contract No	F186642
Site Contact	MN/RF
Day & Date	Wednesday 2022-07-13
Transmittal No	F-ZY9BRB-XOUR
Schedule Attached	Y
Contaminated	N
Remarks	BH08 B and D samples

Sent To	Fugro Consett
Address	Unit 43, Number One Ind Est, Consett, Co. Durham,
Contact Name	John Ashworth
Contact Tel No	01207 581120
Special Requirements	N

SAMPLES

Location	Top	Base	Type	Number	Sample ID	Remarks
BH08	27.90	28.12	B	71	F-JAI9RB-28L3	BAG F
BH08	28.30	28.80	B	72	F-O9J9RB-SIFY	BAG F
BH08	28.80	28.89	D	73	F-NUJ9RB-L9YB	BAG H
BH08	29.26	29.30	D	76	F-XXJ9RB-COJ2	BAG H
BH08	29.30	29.50	B	77	F-GEM9RB-071D	BAG F
BH08	29.50	29.70	B	78	F-ZEM9RB-SIW8	BAG F
BH08	29.70	29.80	D	79	F-9HM9RB-51O8	BAG H
BH08	29.80	30.40	B	80	F-7CR9RB-CGR7	Large bulk bag
BH08	30.40	31.03	B	81	F-4ER9RB-9RMP	Large bulk bag
BH08	31.30	31.50	B	83	F-ACS9RB-S361	BAG F
BH08	32.20	32.30	B	87	F-CHS9RB-CP5V	BAG F
BH08	32.30	32.40	B	88	F-ZQT9RB-PPLT	BAG C
BH08	32.89	33.04	B	91	F-DST9RB-4TLO	BAG I
BH08	33.04	33.30	B	92	F-1TT9RB-BU9Q	BAG C
BH08	33.30	34.10	B	93	F-FGV9RB-AAIS	Large bulk bag
BH08	34.10	34.80	B	94	F-ZGV9RB-E6Q7	Large bulk bag
BH08	34.80	35.05	B	95	F-ZQW9RB-MJCZ	BAG C
BH08	35.36	35.80	B	97	F-8SW9RB-HCBM	Large bulk bag
BH08	35.80	36.30	B	98	F-06Y9RB-V5CV	BAG C
BH08	36.30	36.40	B	99	F-5OY9RB-64GN	BAG C
BH08	36.40	36.70	B	100	F-STY9RB-GHRH	BAG C
BH08	36.80	37.60	B	101	F-DJ1ARB-GELF	Large bulk bag
BH08	37.60	38.30	B	102	F-3L1ARB-6TFJ	Large bulk bag
BH08	38.30	38.70	B	103	F-AH3ARB-NBYI	BAG D
BH08	38.70	38.80	B	104	F-UH3ARB-HD1Y	BAG D
BH08	38.80	39.70	B	105	F-BI3ARB-BI6Z	Large bulk bag
BH08	39.80	40.10	B	106	F-MK4ARB-JMU4	BAG D
BH08	41.30	41.60	B	107	F-ZE6ARB-YNMA	BAG D
BH08	41.60	42.00	B	108	F-RF6ARB-Q2R4	BAG D
BH08	42.80	43.30	B	109	F-799ARB-SVJI	BAG D
BH08	43.30	43.65	B	110	F-HE9ARB-XSZJ	BAG I
BH08	43.80	43.95	B	111	F-TDCARB-7UET	BAG I
BH08	43.95	44.20	B	112	F-UGCARB-2HCX	BAG I
BH08	44.20	44.30	B	113	F-UJCARB-ASYU	BAG I
BH08	44.30	44.60	B	114	F-J9DARB-JHHJ	BAG I
BH08	44.60	44.80	B	115	F-3ADARB-65SK	BAG I
BH08	45.30	45.70	B	116	F-JXDARB-UJD8	BAG I
BH08	45.70	46.15	B	117	F-NEFARB-3LGW	BAG I
BH08	46.80	47.20	B	118	F-3FLARB-V4TZ	BAG A
BH08	47.20	47.25	D	119	F-WFLARB-1NZC	BAG J
BH08	47.80	47.90	B	120	F-U6NARB-QCFS	BAG A
BH08	48.30	48.75	B	123	F-SGOARB-W3UY	BAG A
BH08	48.75	48.80	D	124	F-LHOARB-EU80	BAG J
BH08	49.06	49.80	B	125	F-RZPARB-BXAM	Large bulk bag
BH08	50.25	50.57	B	126	F-UOTARB-51YW	BAG A
BH08	50.57	50.97	B	127	F-XPTARB-6DTL	Large bulk bag
BH08	50.97	51.30	B	128	F-XGVARB-RF7P	Large bulk bag
BH08	51.55	51.80	B	130	F-HIVARB-RC2Q	BAG A
BH08	52.23	52.30	D	133	F-1NVARB-EZ0S	BAG J
BH08	53.79	56.30	B	134	F-C08BRB-1SN8	BAG A
BH08	57.00	57.50	B	135	F-PSNBRB-EACW	Large bulk bag
TOTALS	B [88] | D [15]					

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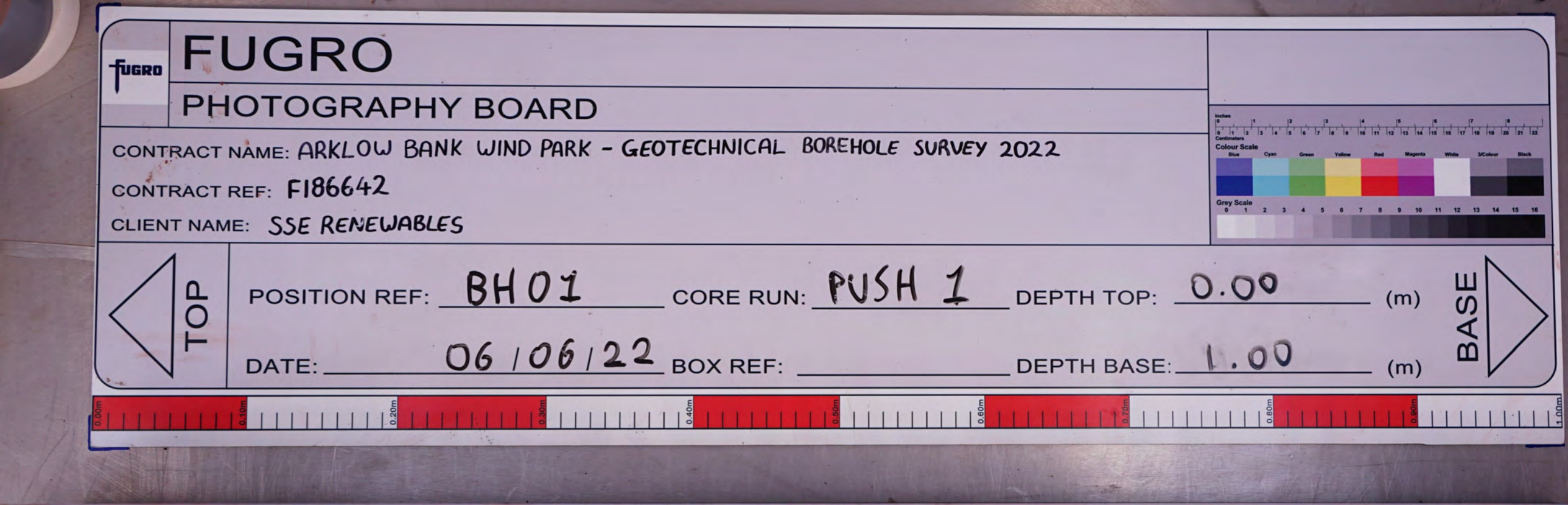
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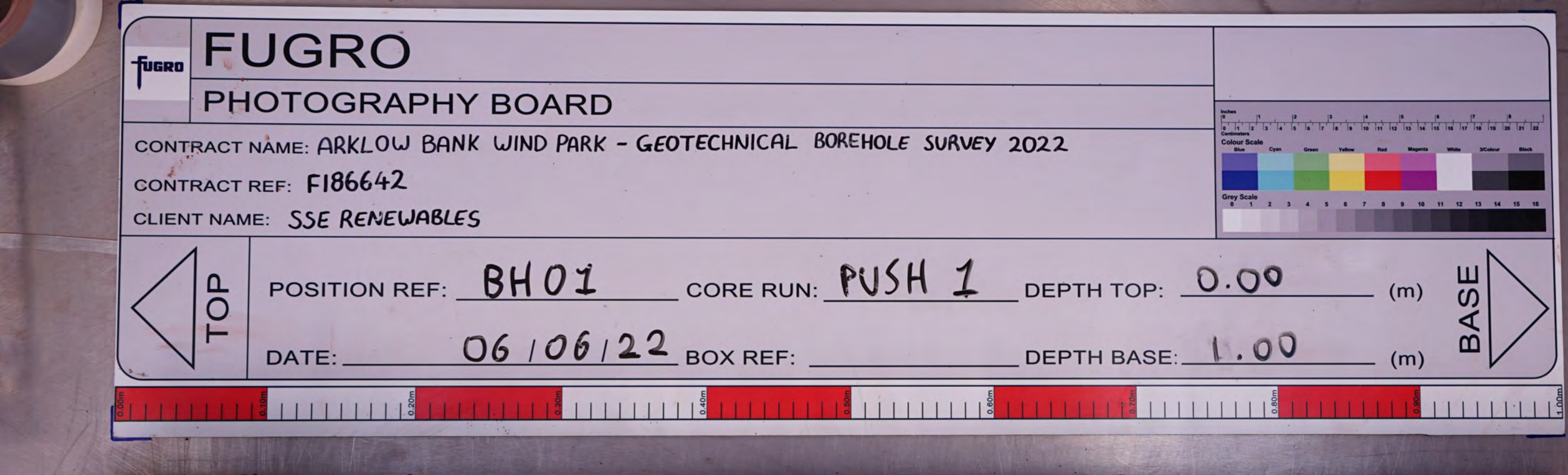
TOP
POSITION REF: BH01
CORE RUN: PUSH 1
DEPTH TOP: 0.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 1.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.40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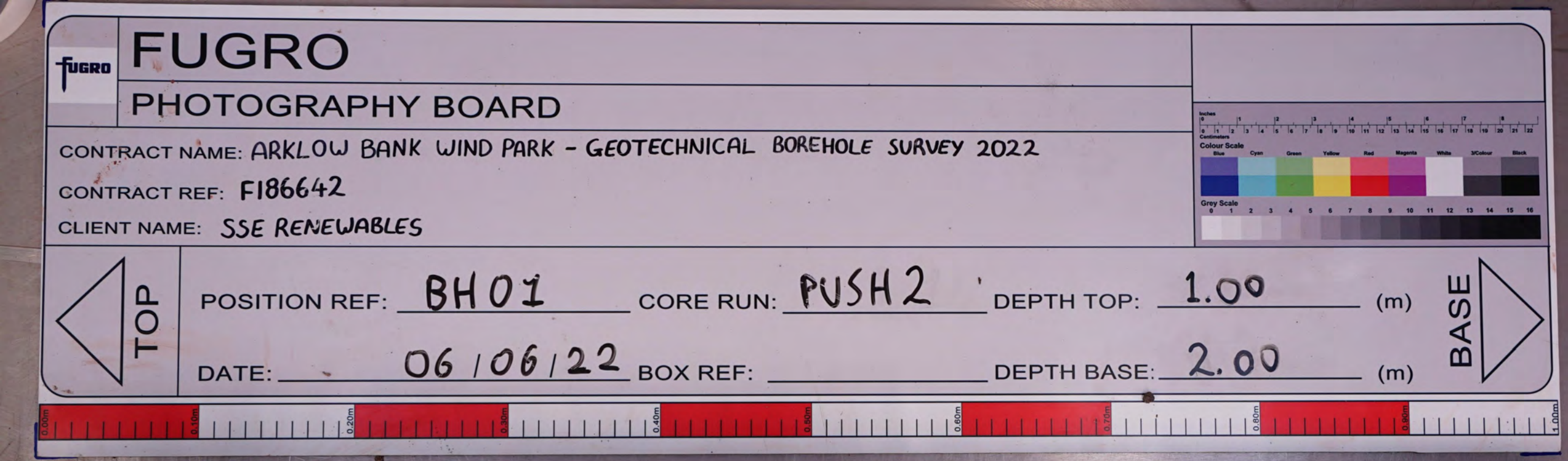
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 1
DEPTH TOP: 0.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 1.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.41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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH2
DEPTH TOP: 1.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 2.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.42


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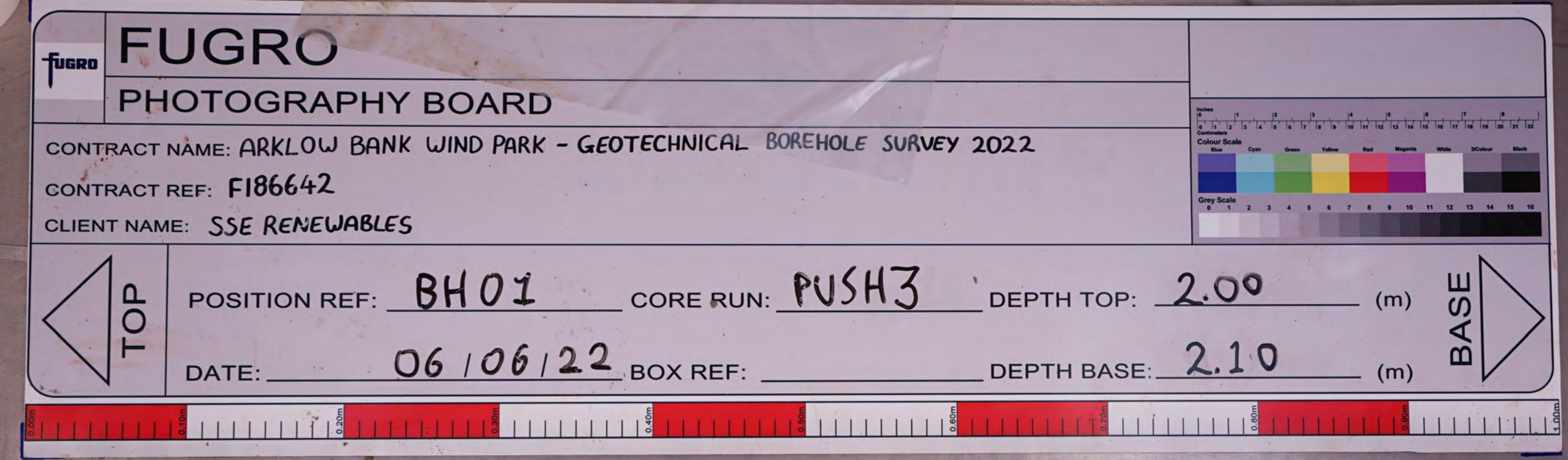
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH2
DEPTH TOP: 1.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 2.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.43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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH3
DEPTH TOP: 2.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 2.10 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.44

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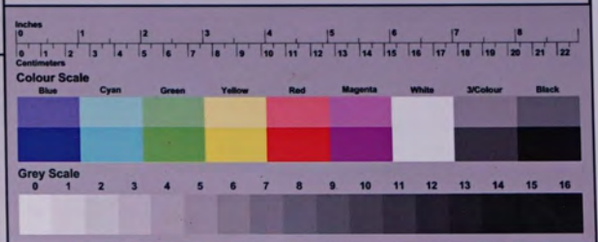
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES



TOP

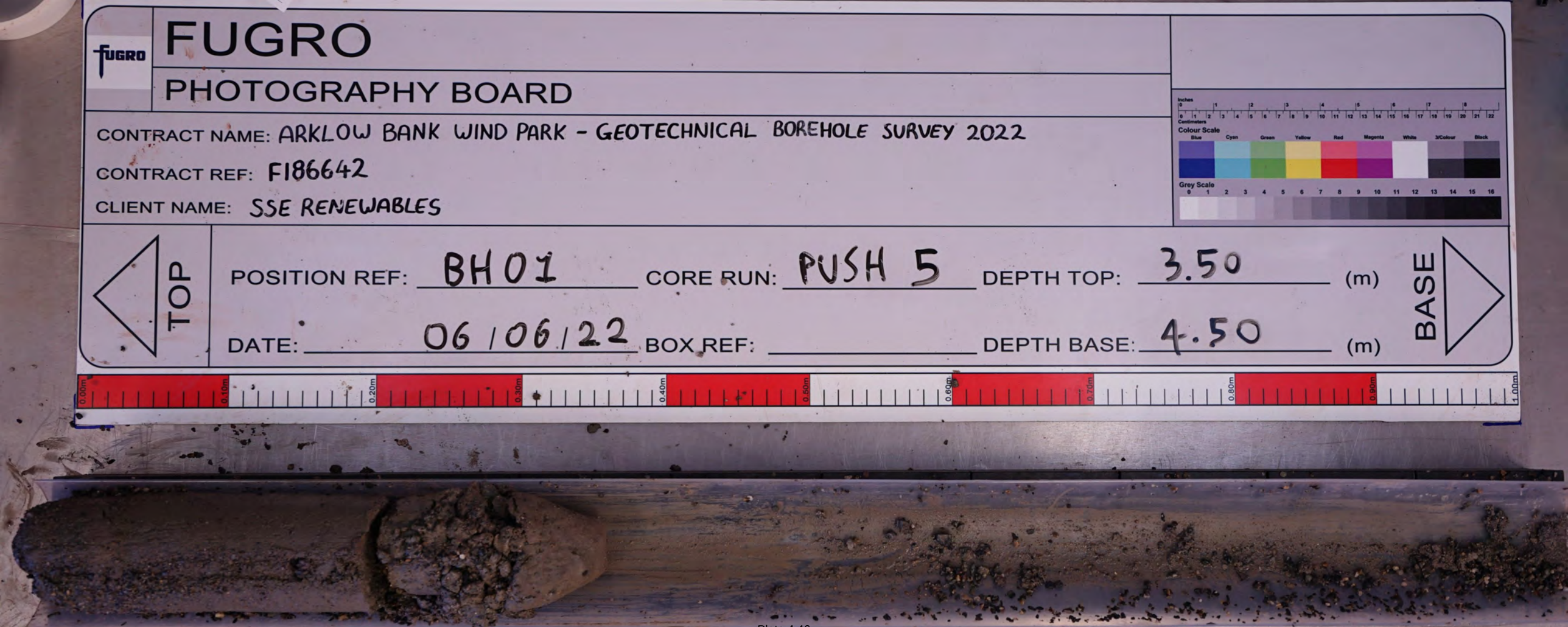
POSITION REF: BH01 CORE RUN: PUSH 4 DEPTH TOP: 2.50 (m)

DATE: 06/06/22 BOX REF: DEPTH BASE: 2.70 (m)

BASE



Plate 4.45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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 5
DEPTH TOP: 3.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.46

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

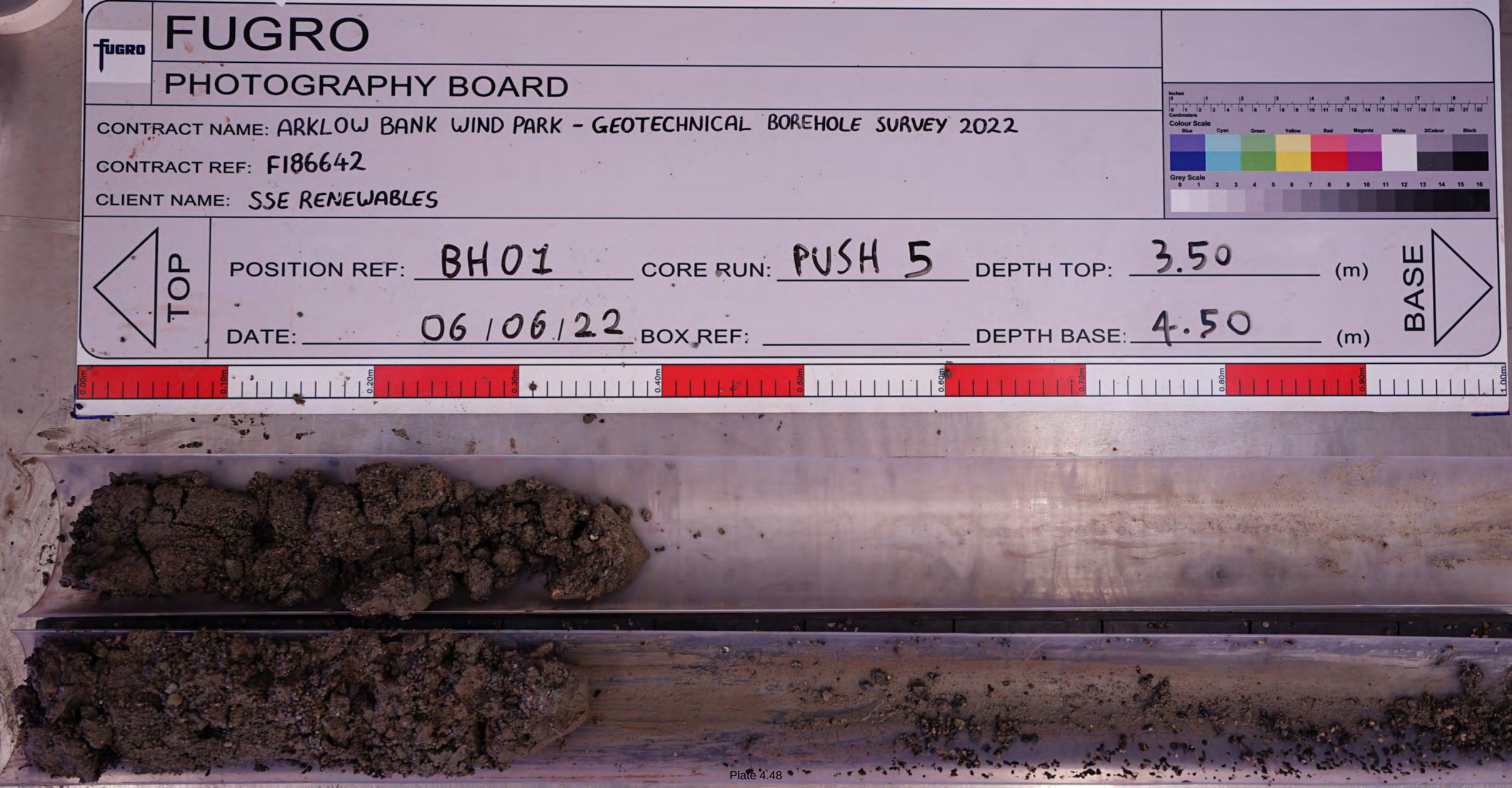
POSITION REF: BH01 CORE RUN: PUSH 5 DEPTH TOP: 3.50 (m)

DATE: 06/06/22 BOX REF: DEPTH BASE: 4.50 (m)

BASE



Plate 4.47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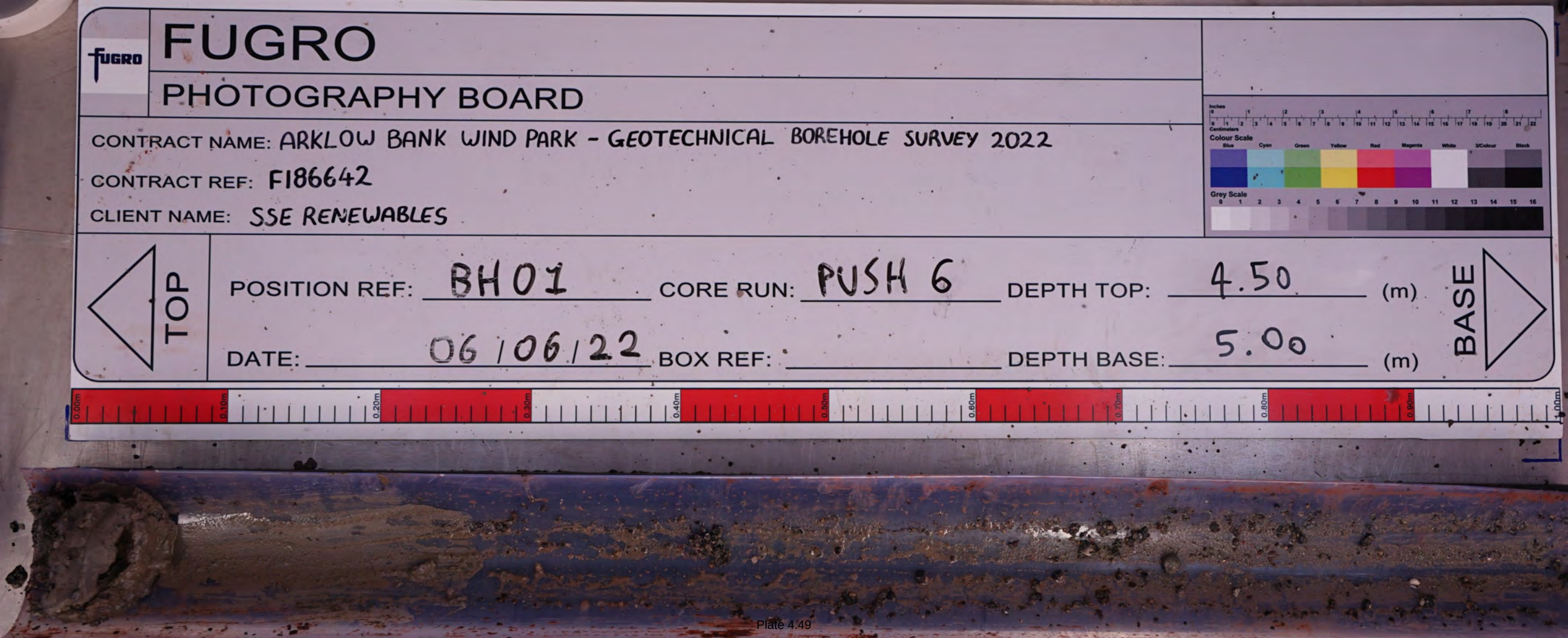
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 5
DEPTH TOP: 3.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.48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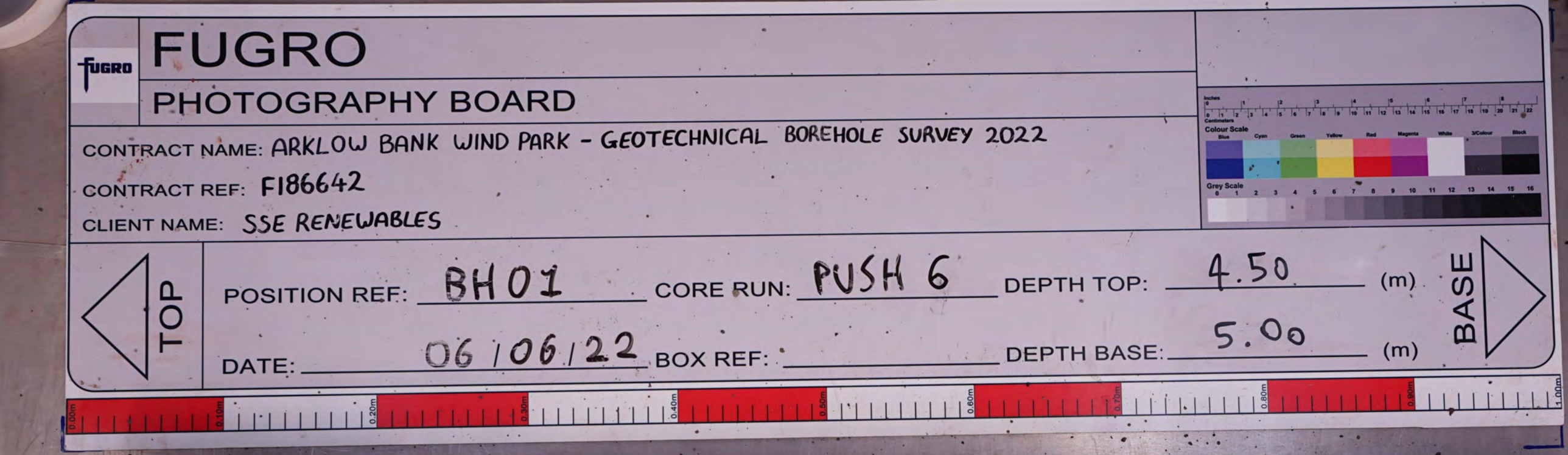
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 6
DEPTH TOP: 4.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 5.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.49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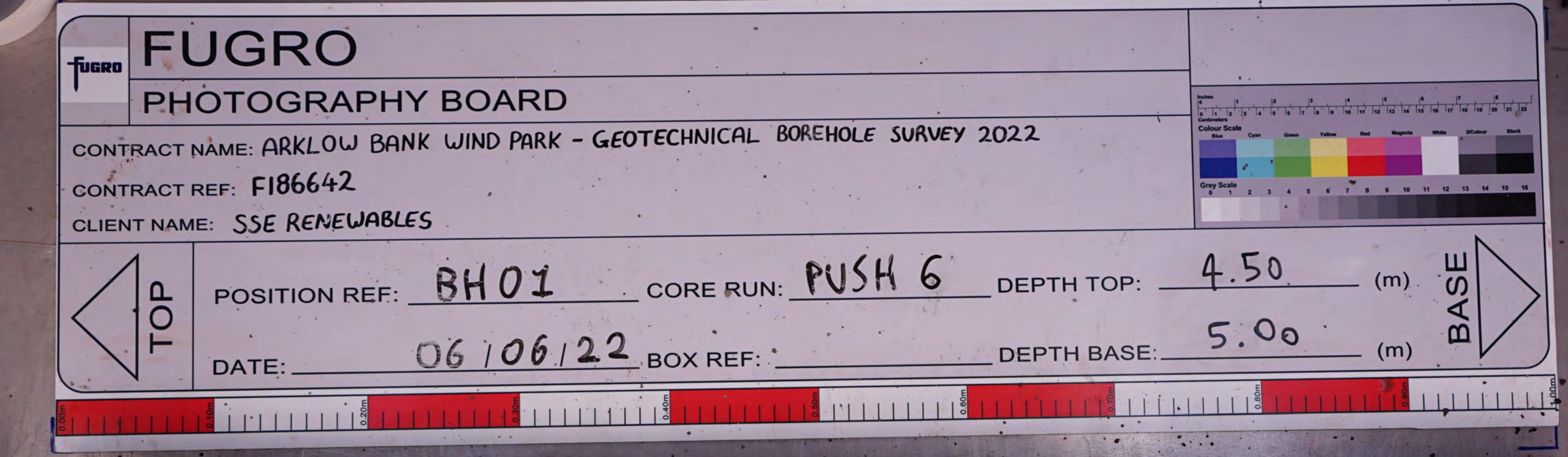
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 6
DEPTH TOP: 4.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 5.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.50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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 6
DEPTH TOP: 4.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 5.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.51

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 7 DEPTH TOP: 5.00 (m)

DATE: 06/06/22 BOX REF: DEPTH BASE: 5.50 (m)

BASE






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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 7
DEPTH TOP: 5.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 5.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
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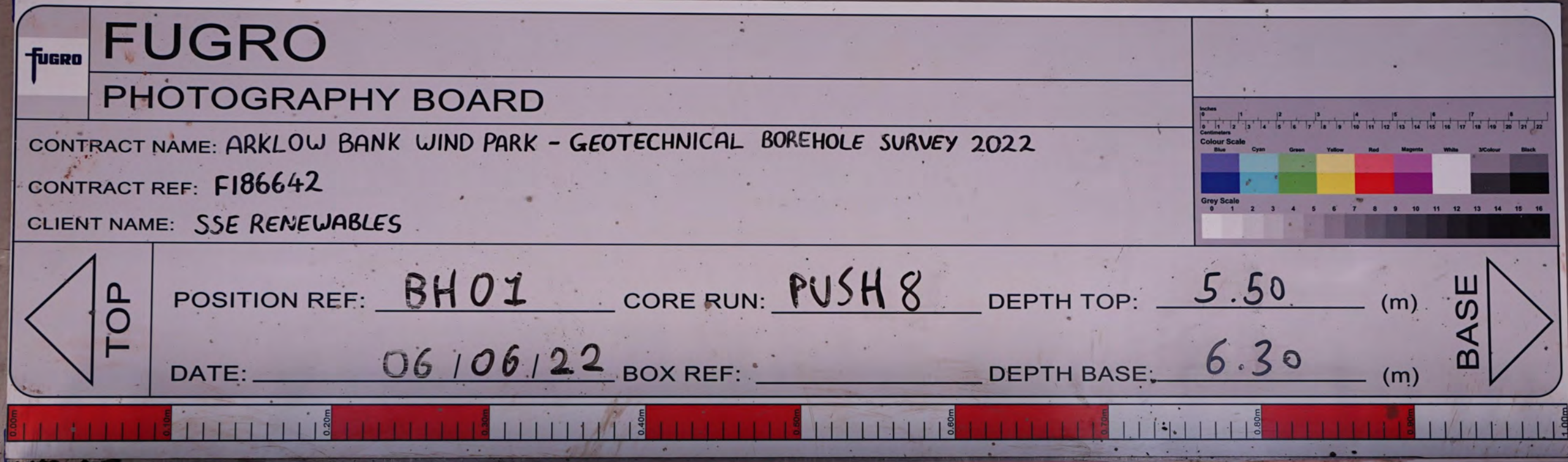
Plate 4.53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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 8
DEPTH TOP: 5.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 6.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.54

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 9 DEPTH TOP: 6.50 (m)

DATE: 06/06/22 BOX REF: DEPTH BASE: 6.70 (m)

BASE



Plate 4.55

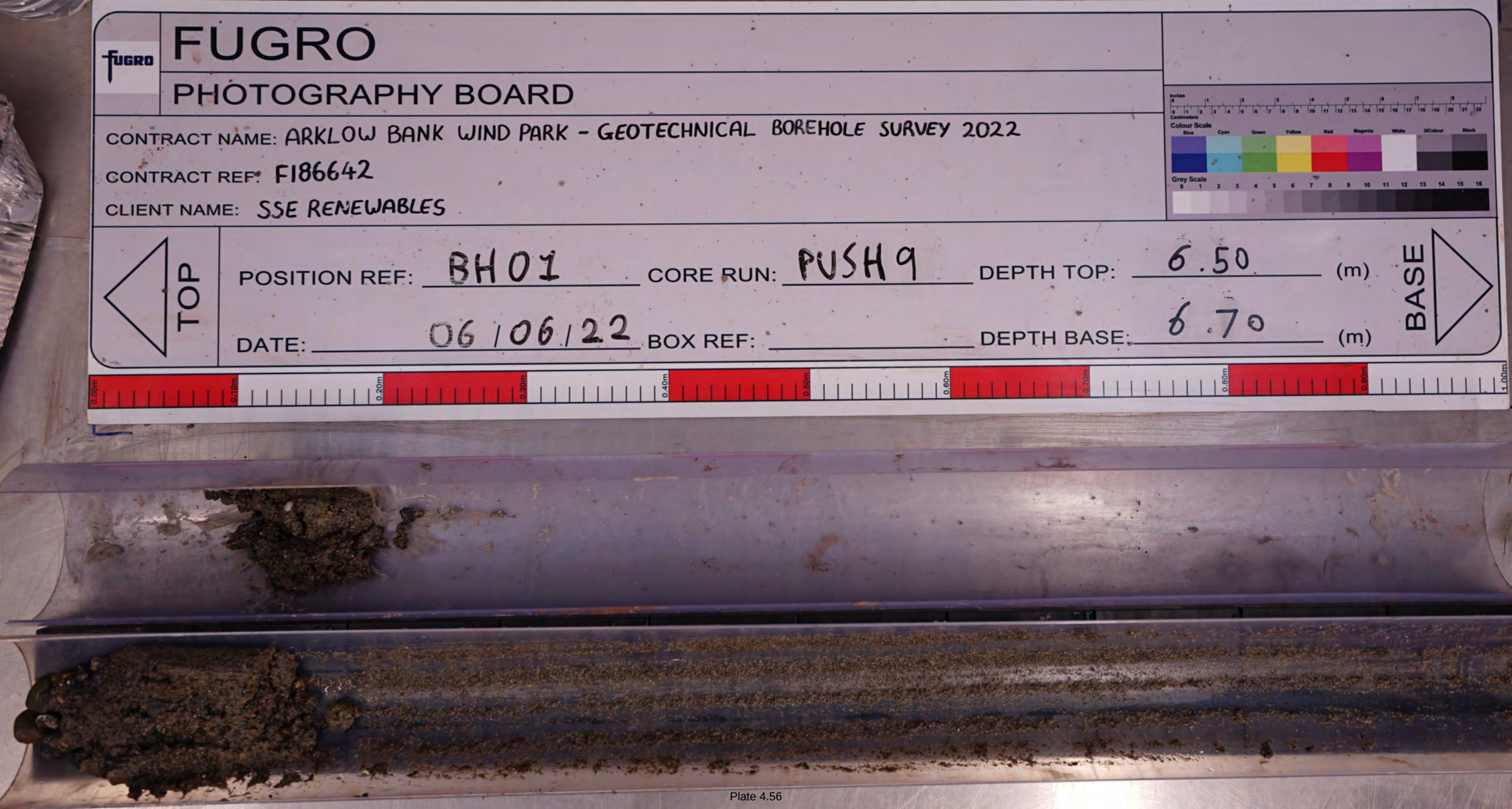
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH9
DEPTH TOP: 6.50 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 6.70 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.56

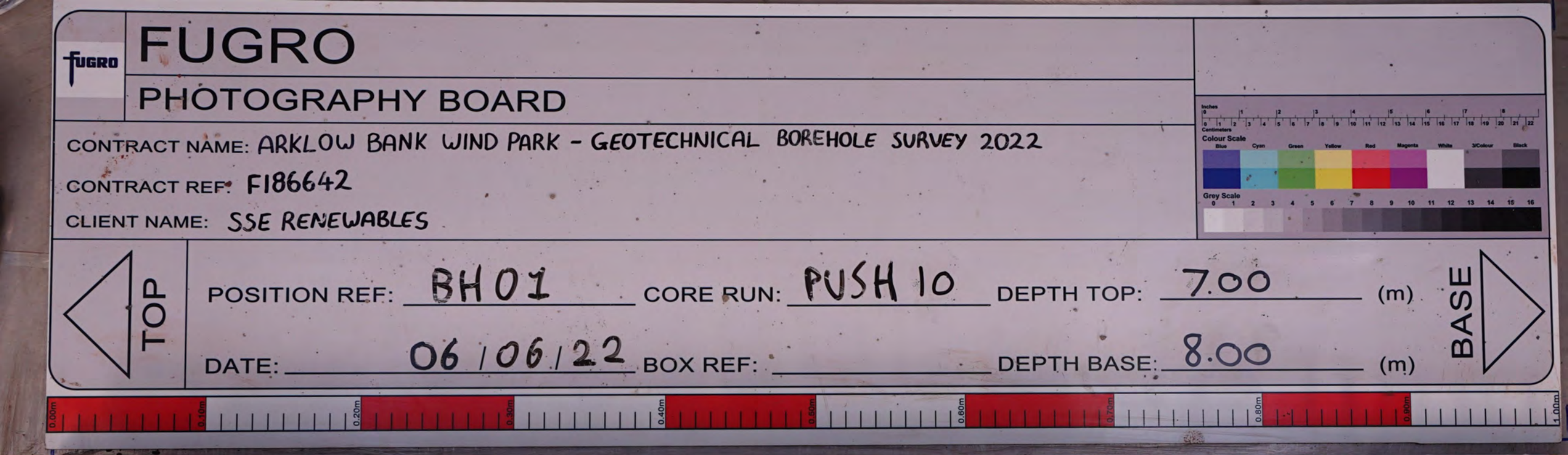
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 10
DEPTH TOP: 7.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 8.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.57

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 10 DEPTH TOP: 7.00 (m)

DATE: 06/06/22 BOX REF: DEPTH BASE: 8.00 (m)

BASE

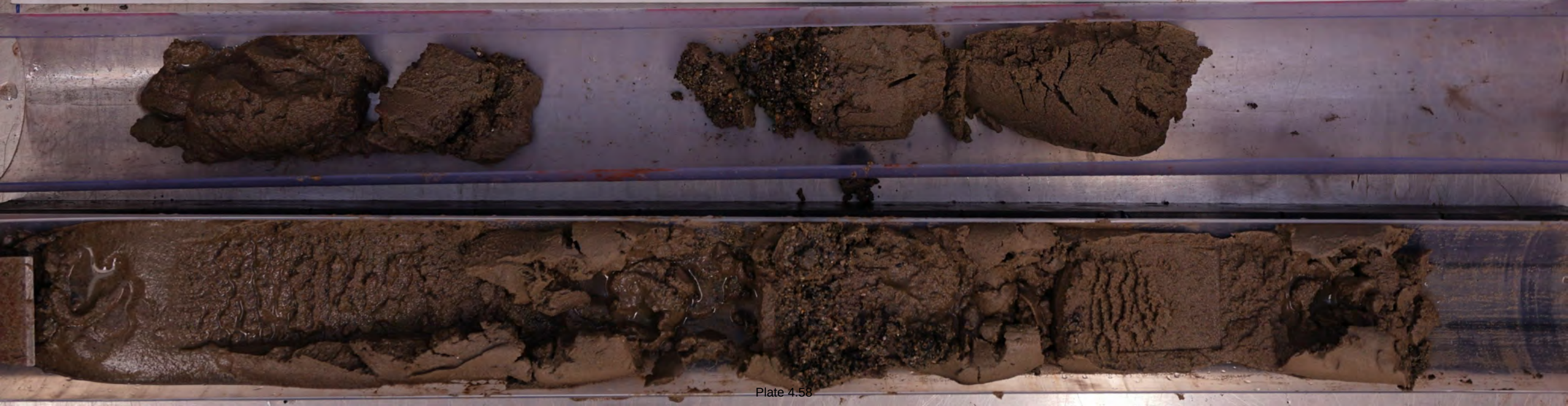

Plate 4.58

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 11 DEPTH TOP: 8.00 (m)

DATE: 06/06/22 BOX REF: _____ DEPTH BASE: 9.00 (m)

BASE



Plate 4.59


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 11
DEPTH TOP: 8.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 9.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.60

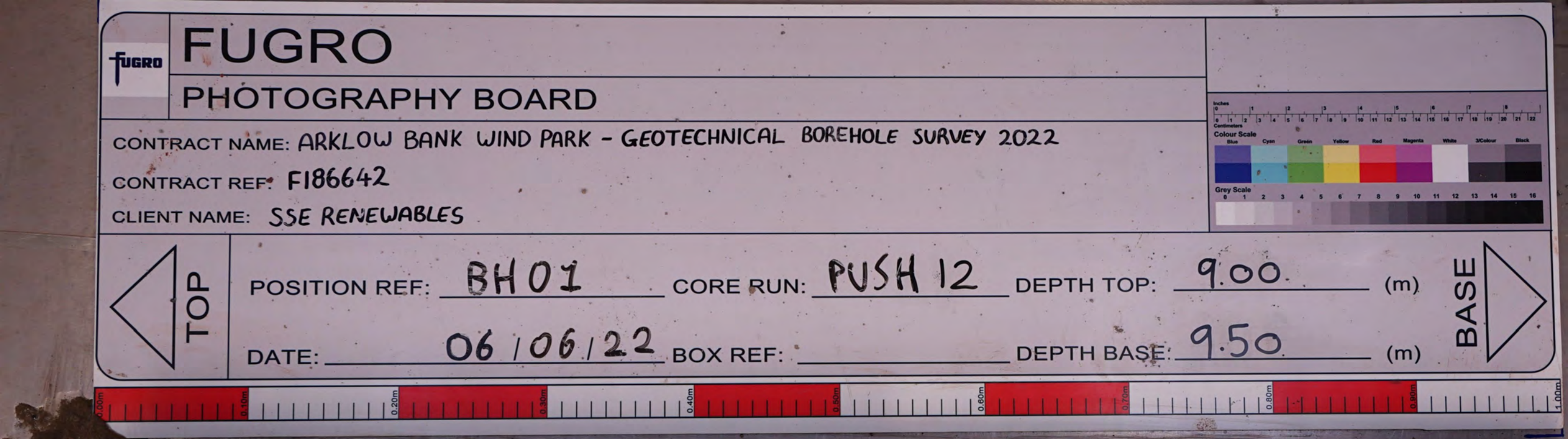
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 12
DEPTH TOP: 9.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 9.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.61

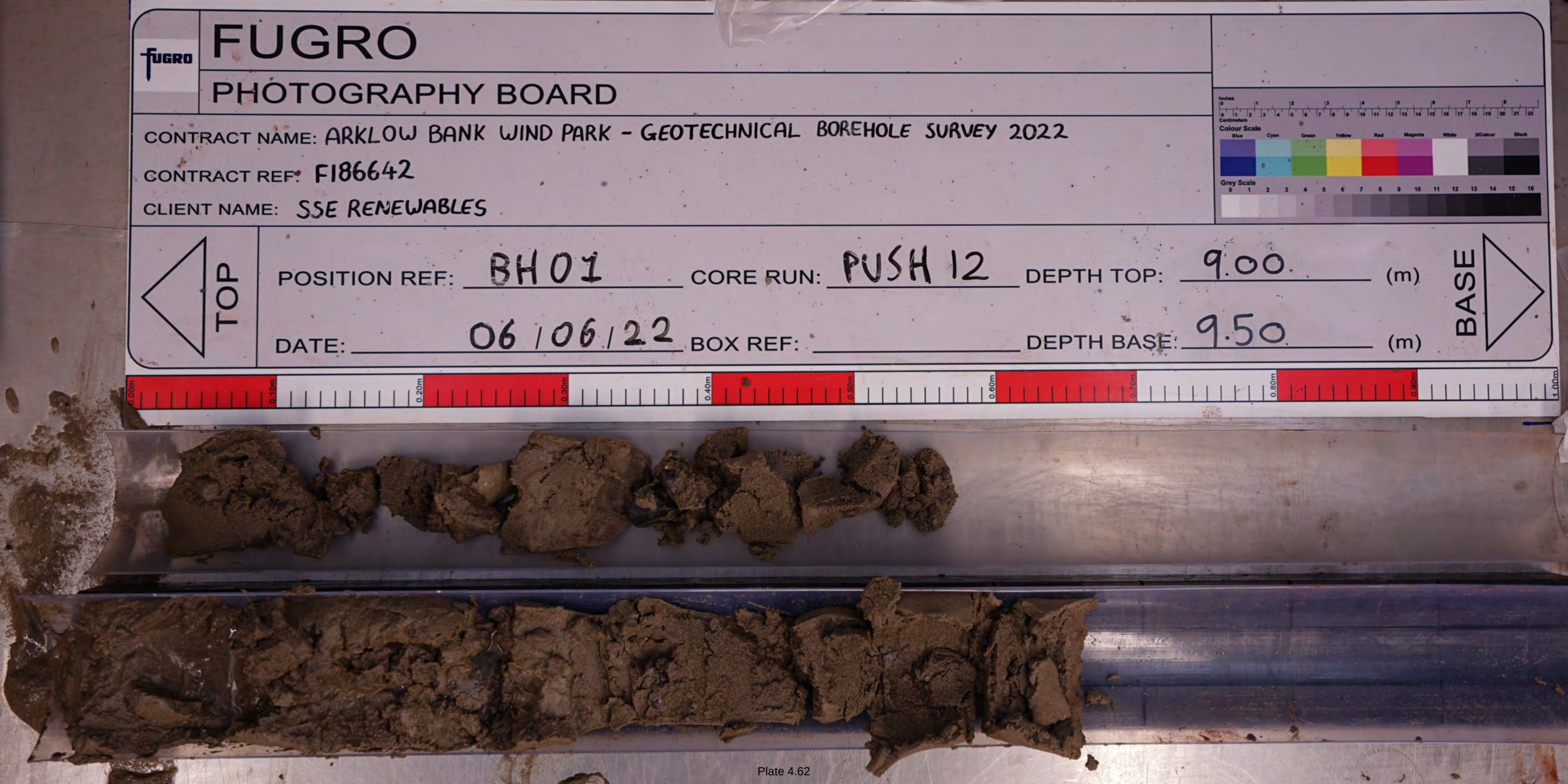
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 12
DEPTH TOP: 9.00 (m)
DATE: 06/06/22
BOX REF:
DEPTH BASE: 9.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.62

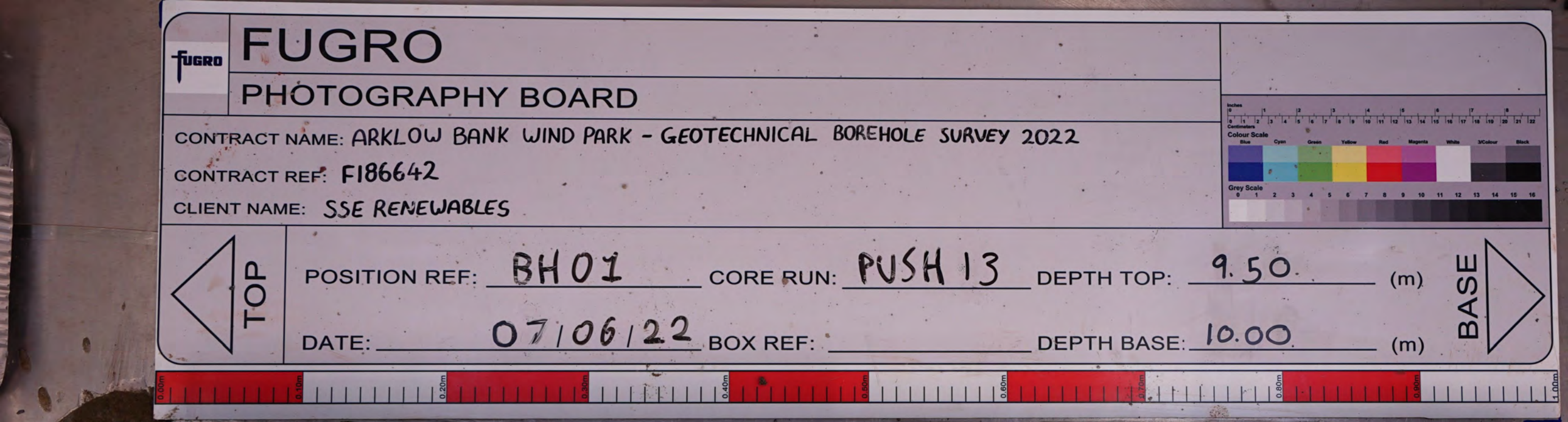
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 13
DEPTH TOP: 9.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 10.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.63


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 13
DEPTH TOP: 9.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 10.00 (m)
BASE

Plate 4.64

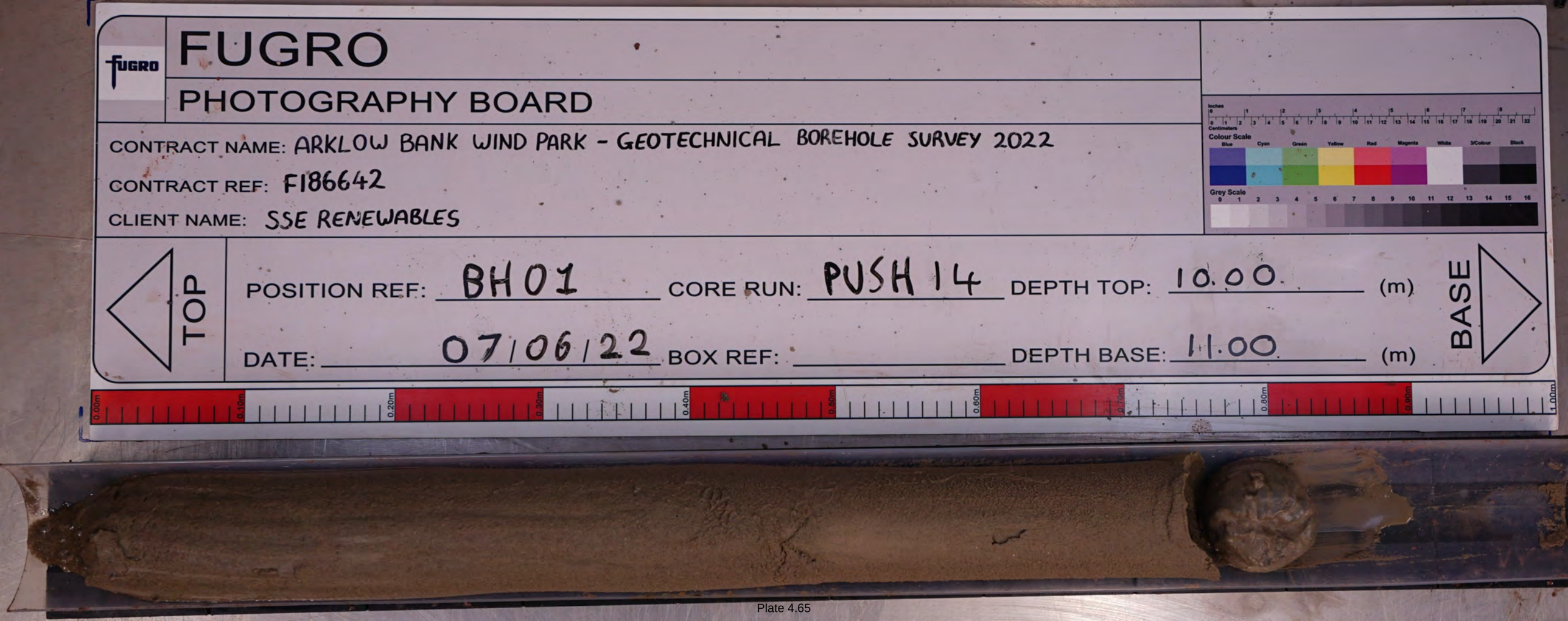
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 14
DEPTH TOP: 10.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Block
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.65


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 14
DEPTH TOP: 10.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.66

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 15 DEPTH TOP: 11.00 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 12.00 (m)

BASE



Plate 4.67

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 15 DEPTH TOP: 11.00 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 12.00 (m)

BASE



Plate 4.68

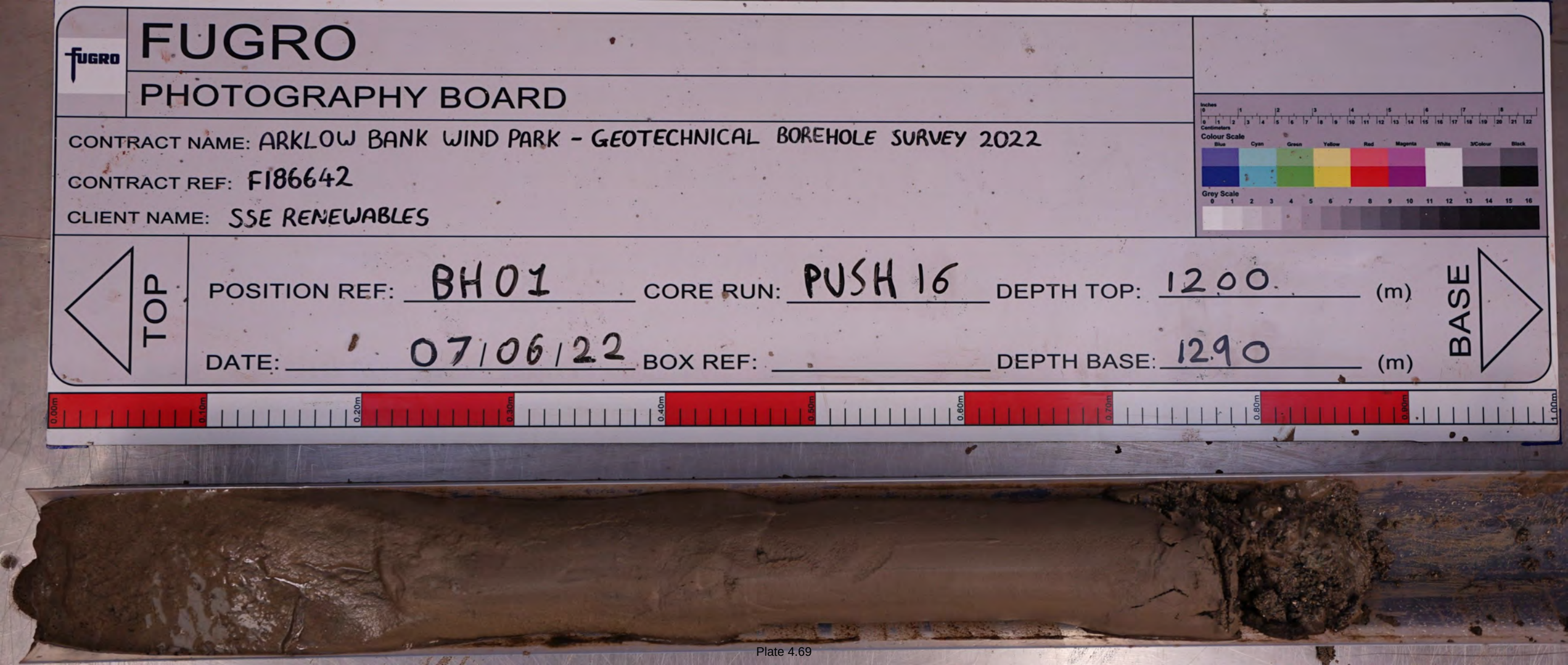
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 16
DEPTH TOP: 1200 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 1290 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.69


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 16
DEPTH TOP: 1200 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 1290 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.70

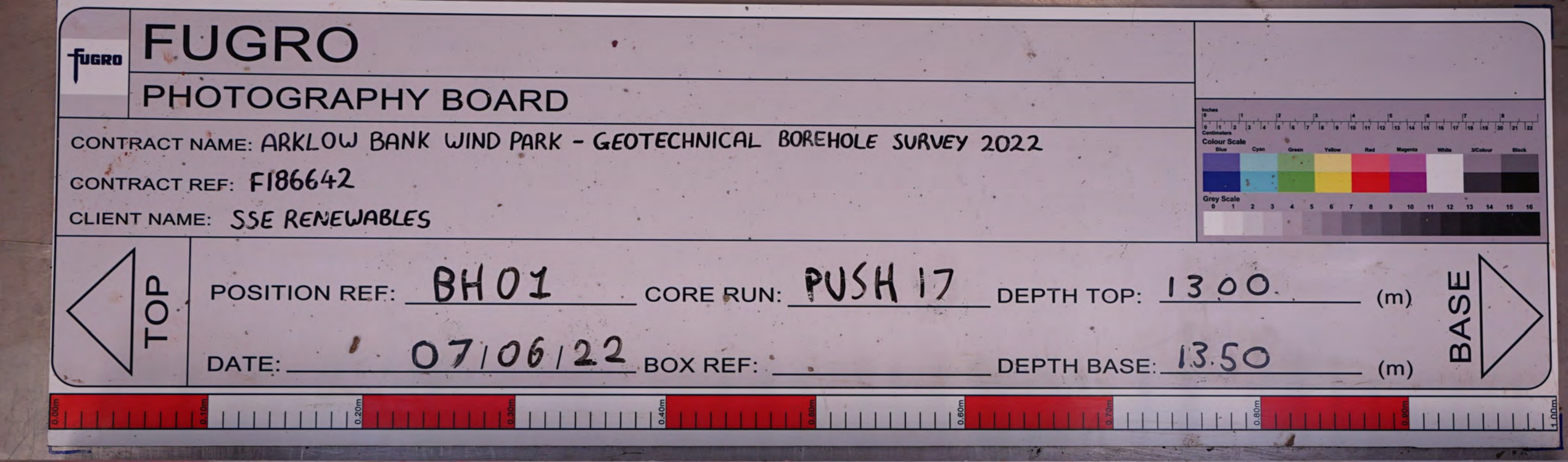
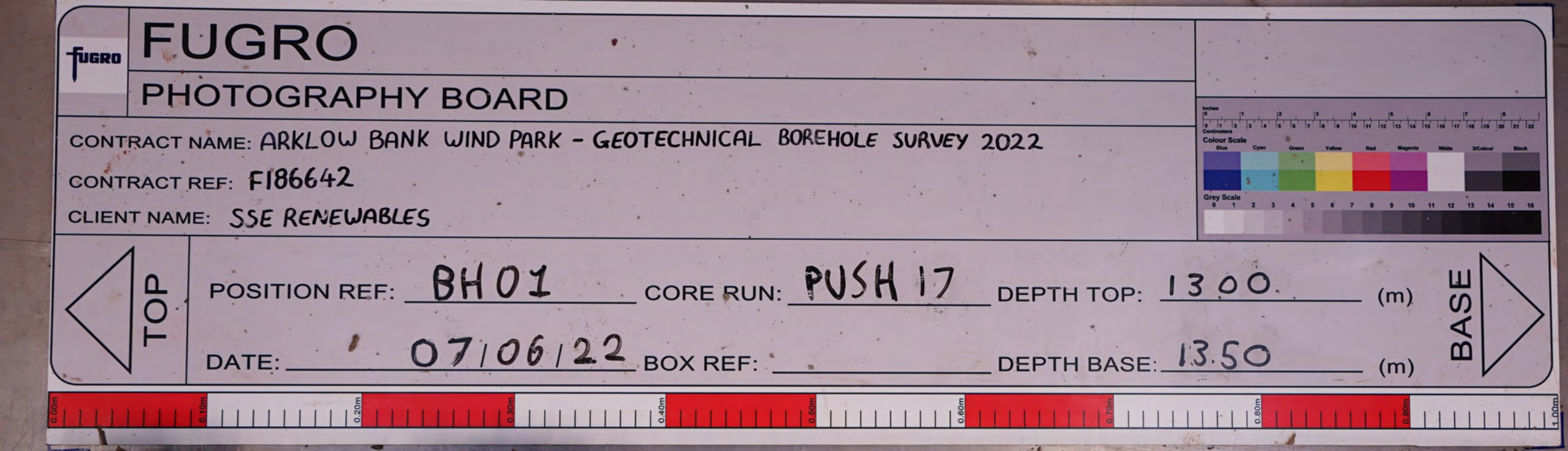

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 17
DEPTH TOP: 13.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 13.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.71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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 17
DEPTH TOP: 13.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 13.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.72

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

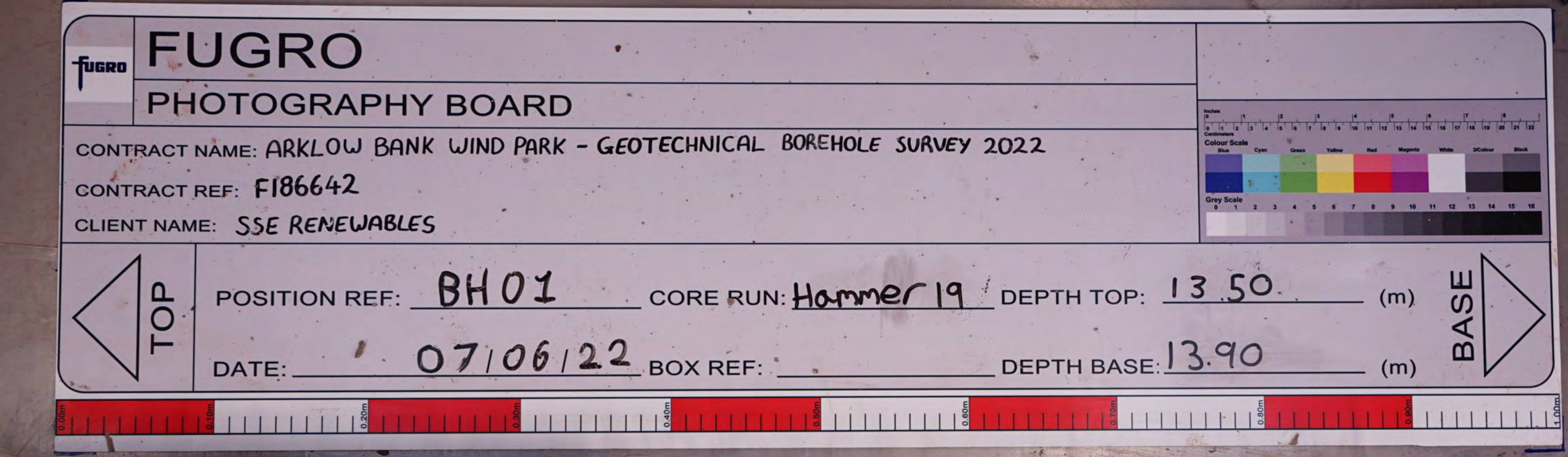
POSITION REF: BH01 CORE RUN: PUSH 18 DEPTH TOP: 13.50 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 13.50 (m)

BASE

NO RECOVERY

Plate 4.73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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: Hammer 19
DEPTH TOP: 13.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 13.90 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.74

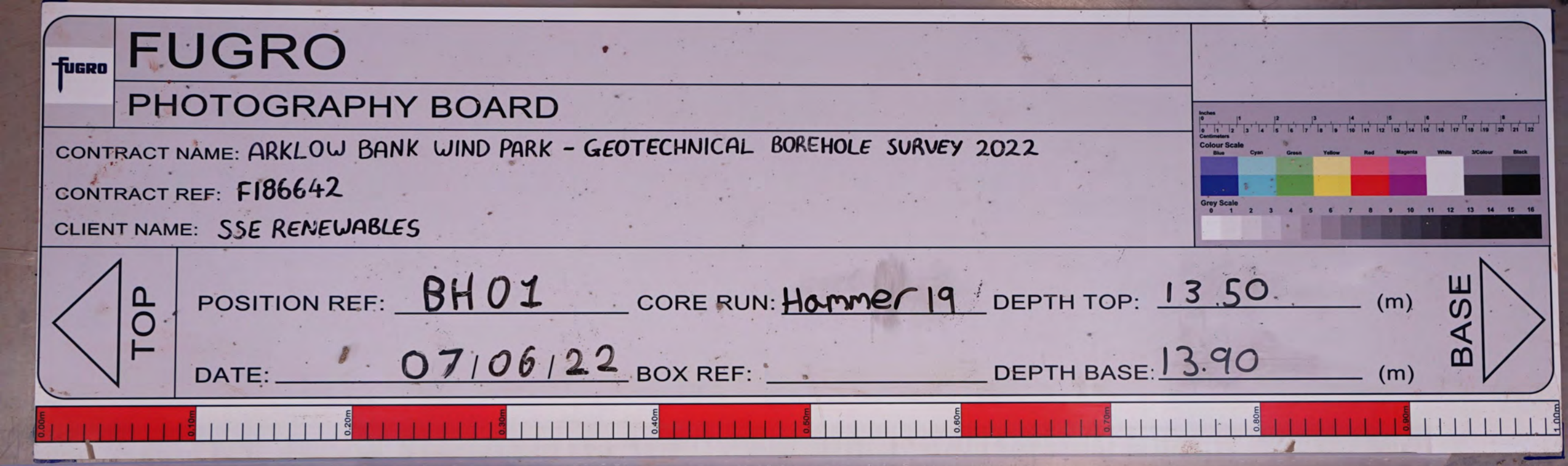
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: Hammer 19
DEPTH TOP: 13.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 13.90 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.75

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: Hammer 20 DEPTH TOP: 14.00 (m)

DATE: 07/06/22 BOX REF: _____ DEPTH BASE: 14.40 (m)

BASE





Plate 4.76

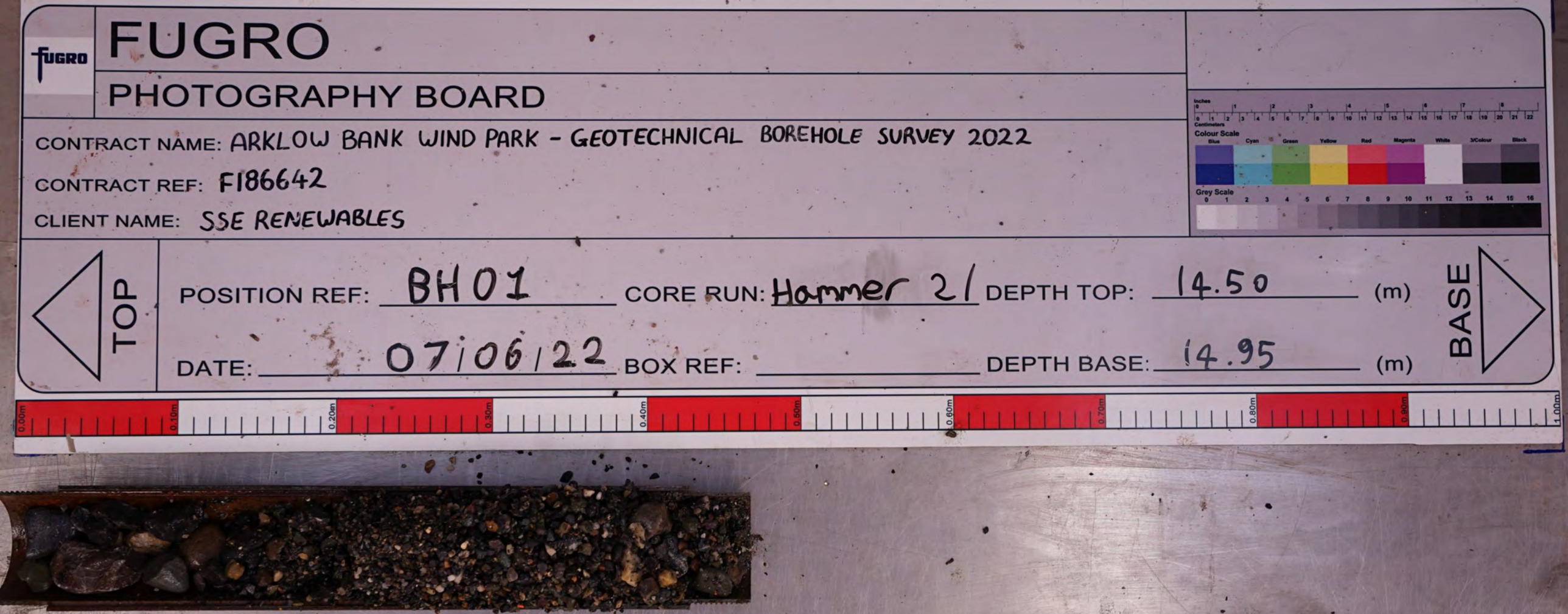
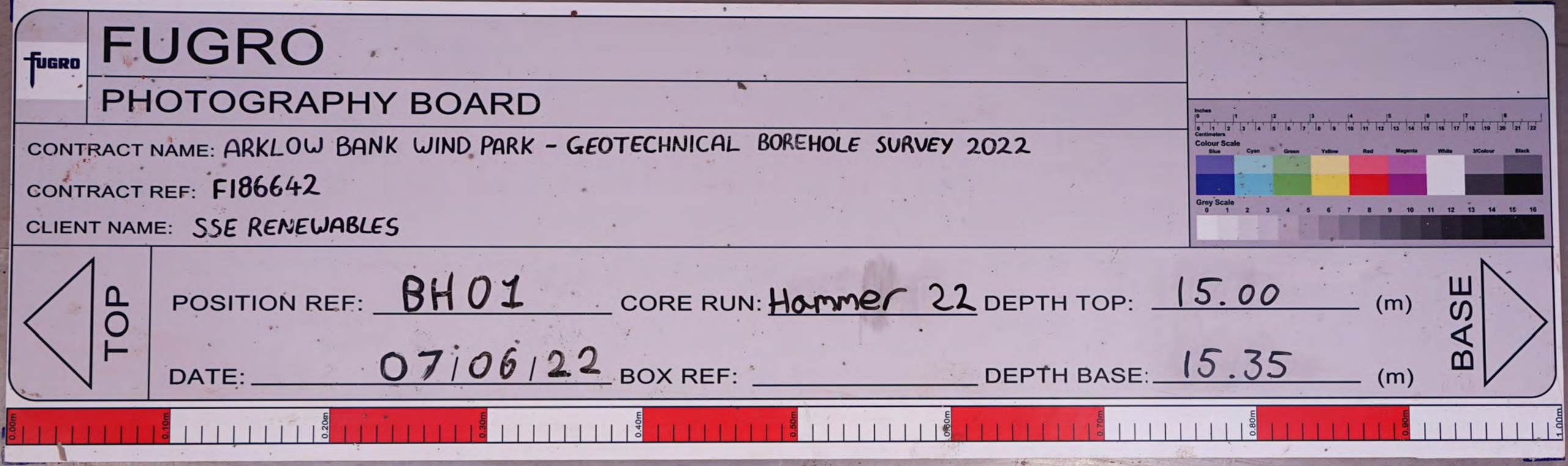

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: Hammer 2/
DEPTH TOP: 14.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 14.95 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.77



NO RECOVERY

Plate 4.78

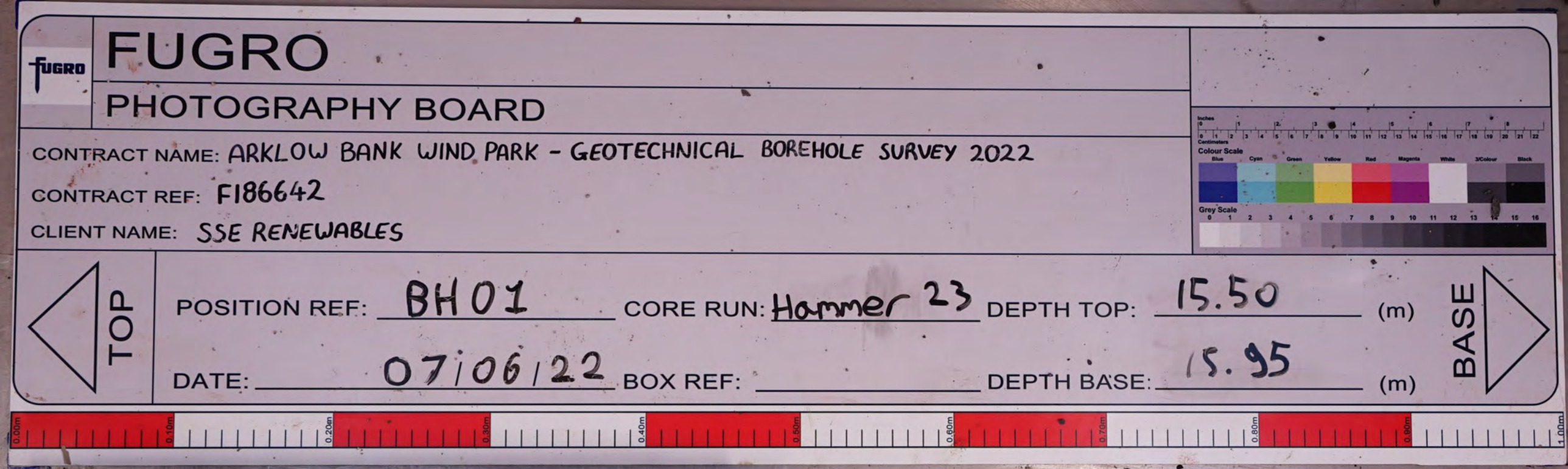

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: Hammer 23
DEPTH TOP: 15.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 15.95 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.79

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: Hammer 24 DEPTH TOP: 16.00 (m)

DATE: 07/06/22 BOX REF: _____ DEPTH BASE: 16.35 (m)

BASE



Plate 4.80

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

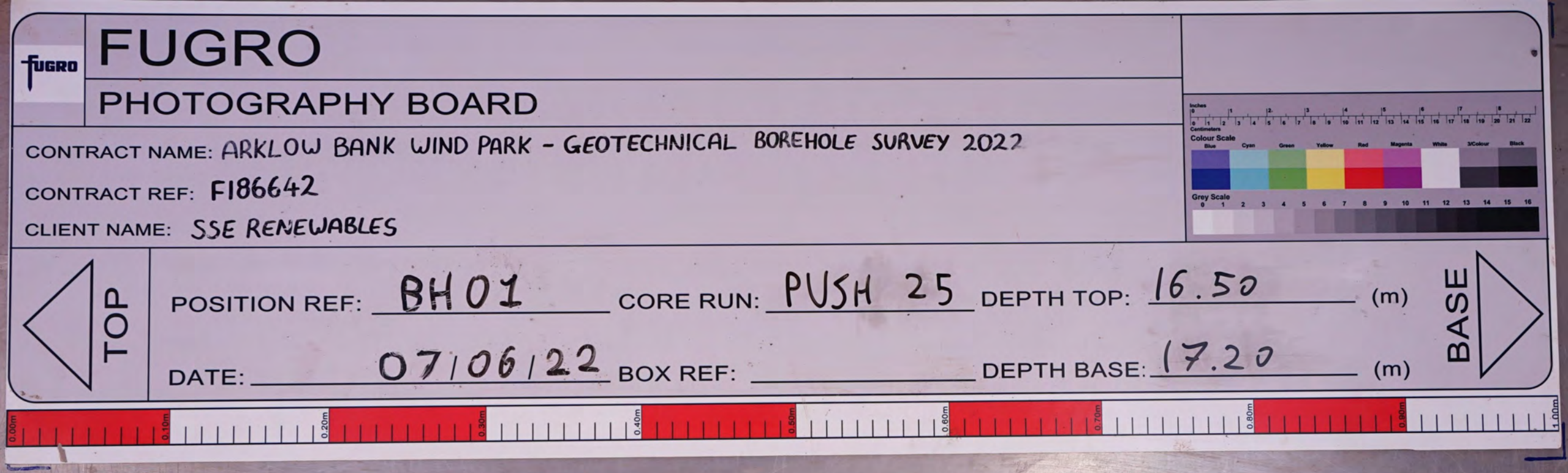
POSITION REF: BH01 CORE RUN: Hammer 24 DEPTH TOP: 16.00 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 16.35 (m)

BASE



Plate 4.81



NO RECOVERY

Plate 4.82

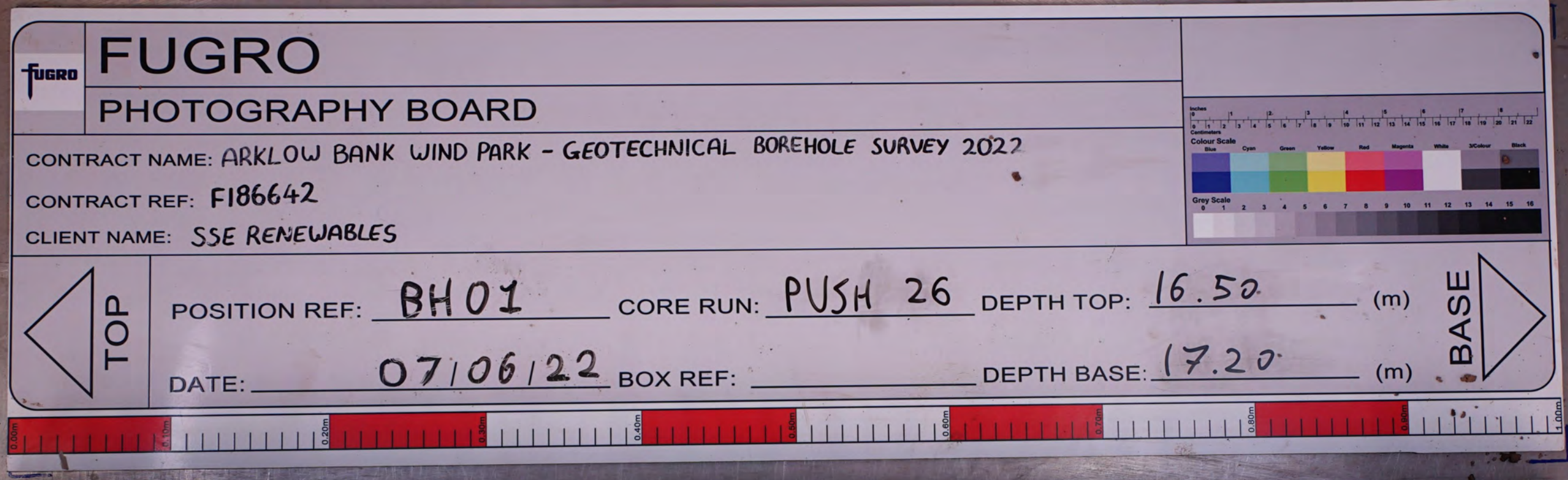

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 26
DEPTH TOP: 16.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 17.20 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.83

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 26 DEPTH TOP: 16.50 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 17.20 (m)

BASE



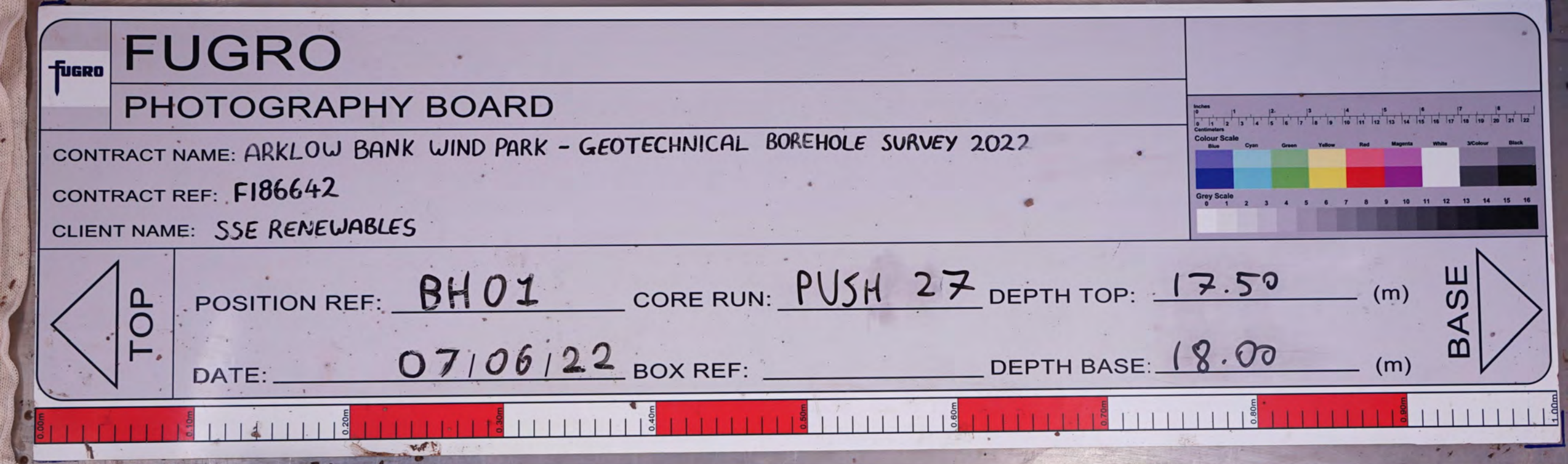

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 27
DEPTH TOP: 17.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.85

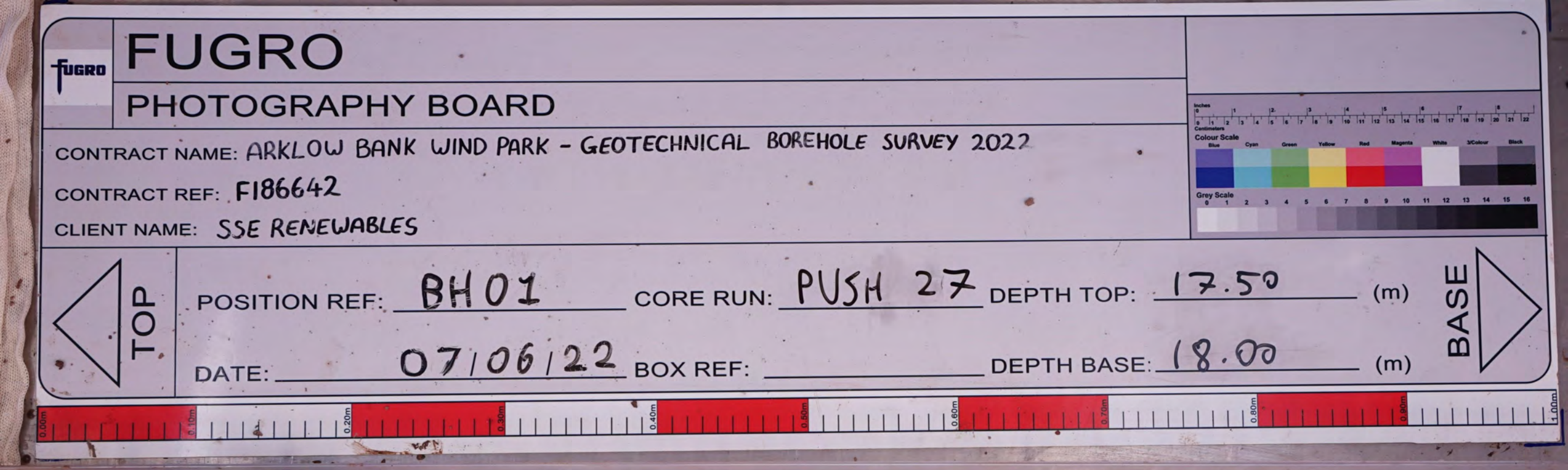

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 27
DEPTH TOP: 17.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.86

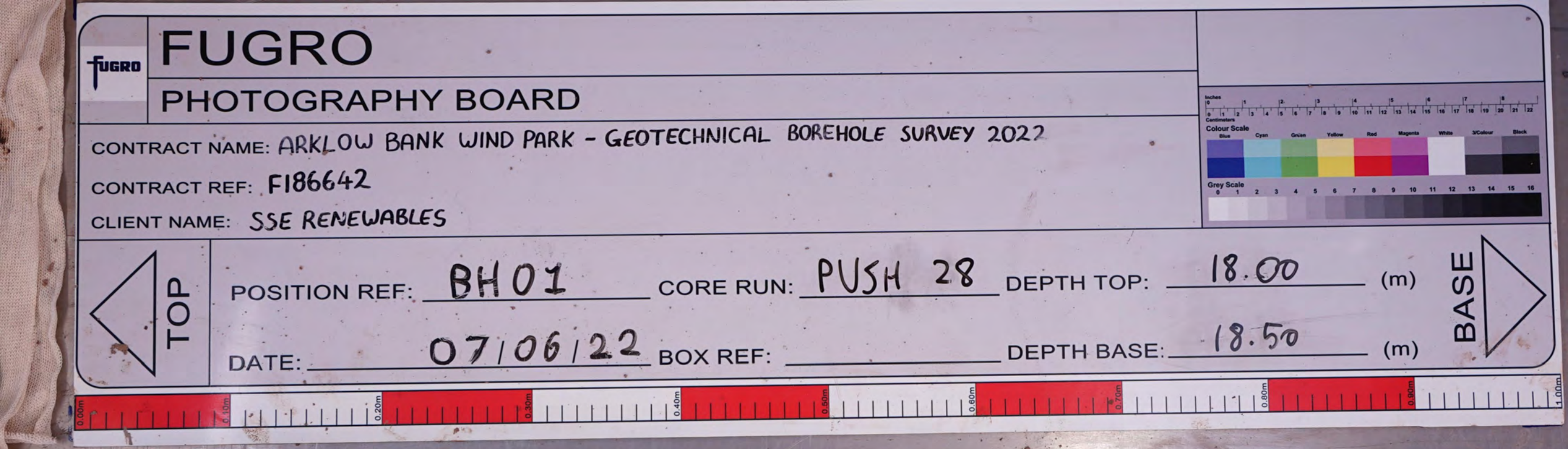

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 28
DEPTH TOP: 18.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.87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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 28
DEPTH TOP: 18.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.88

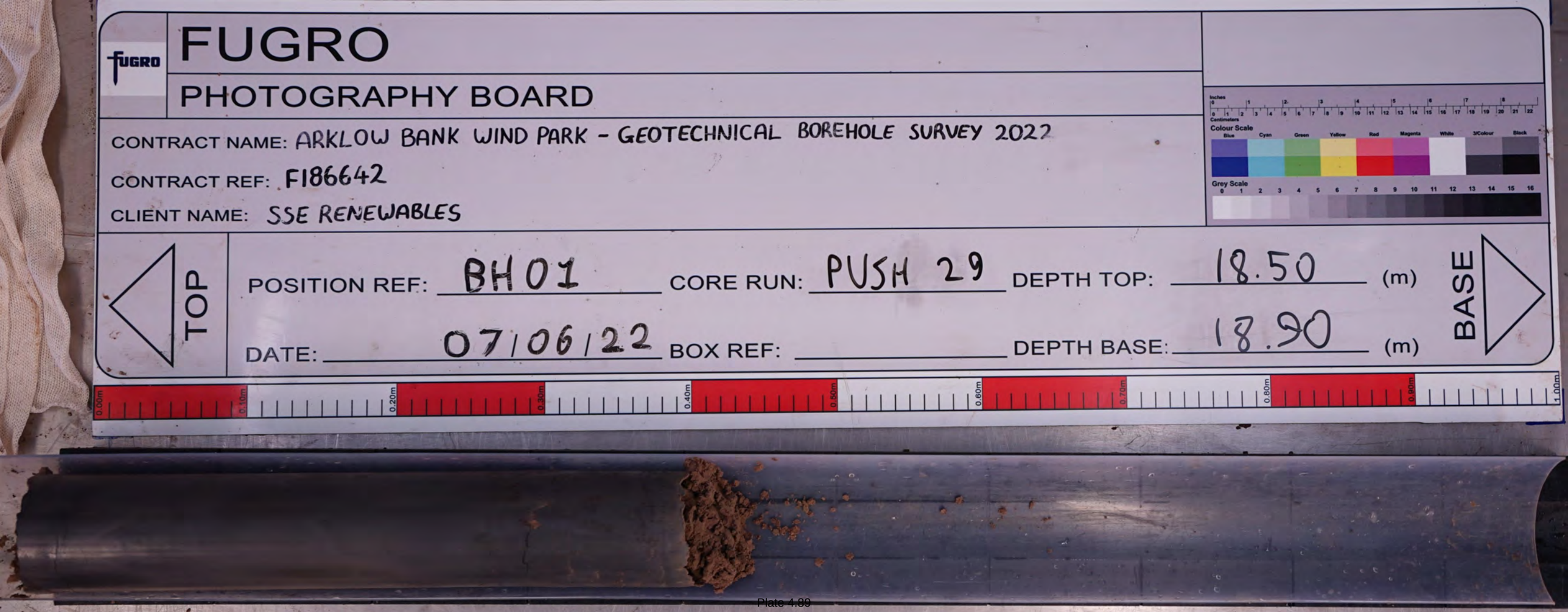
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 29
DEPTH TOP: 18.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.90 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.89


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 29
DEPTH TOP: 18.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 18.90 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.90

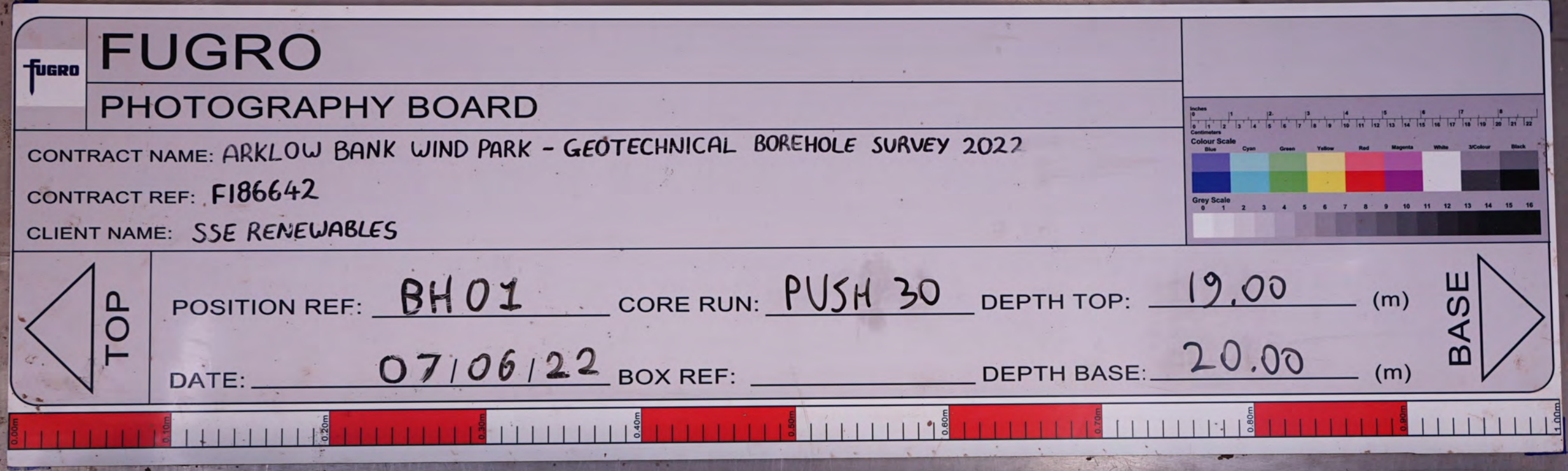
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 30
DEPTH TOP: 19.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.91


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 30
DEPTH TOP: 19.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.92

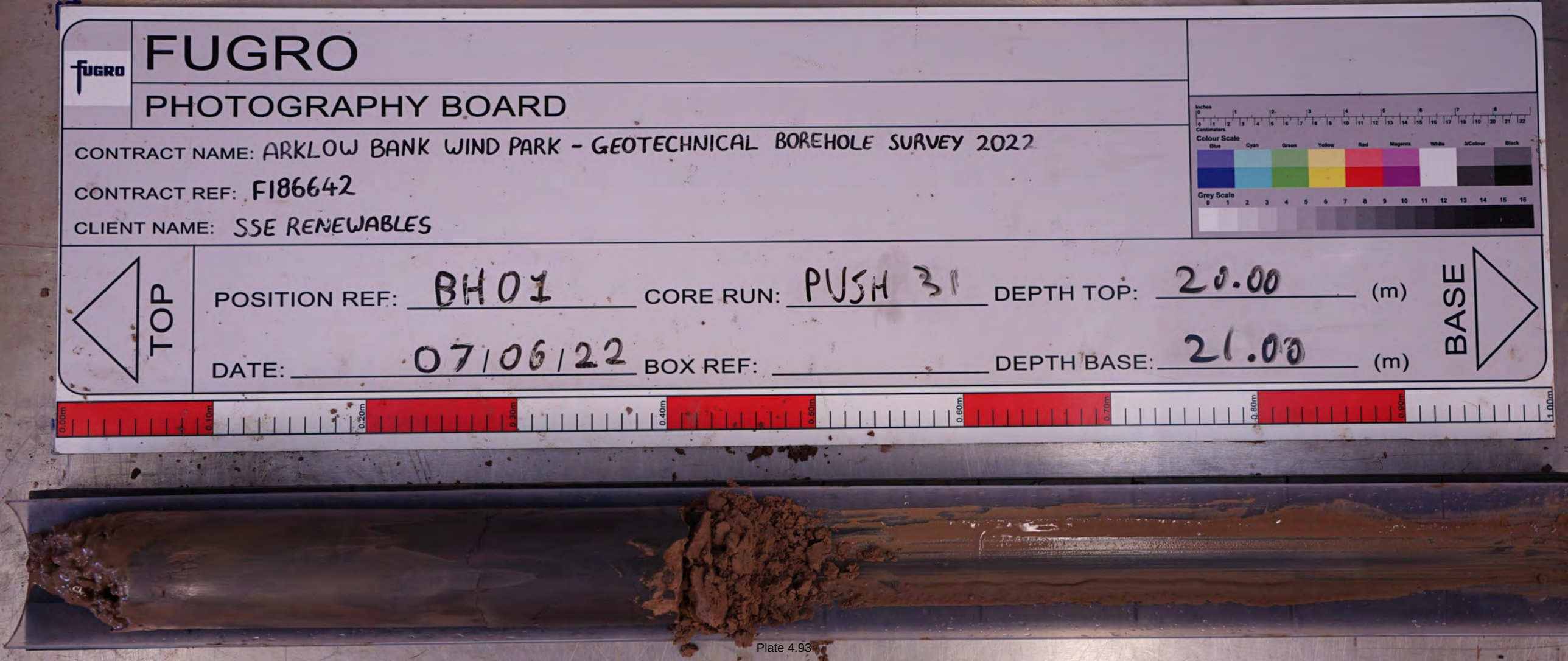

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 31
DEPTH TOP: 20.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 21.03 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.93

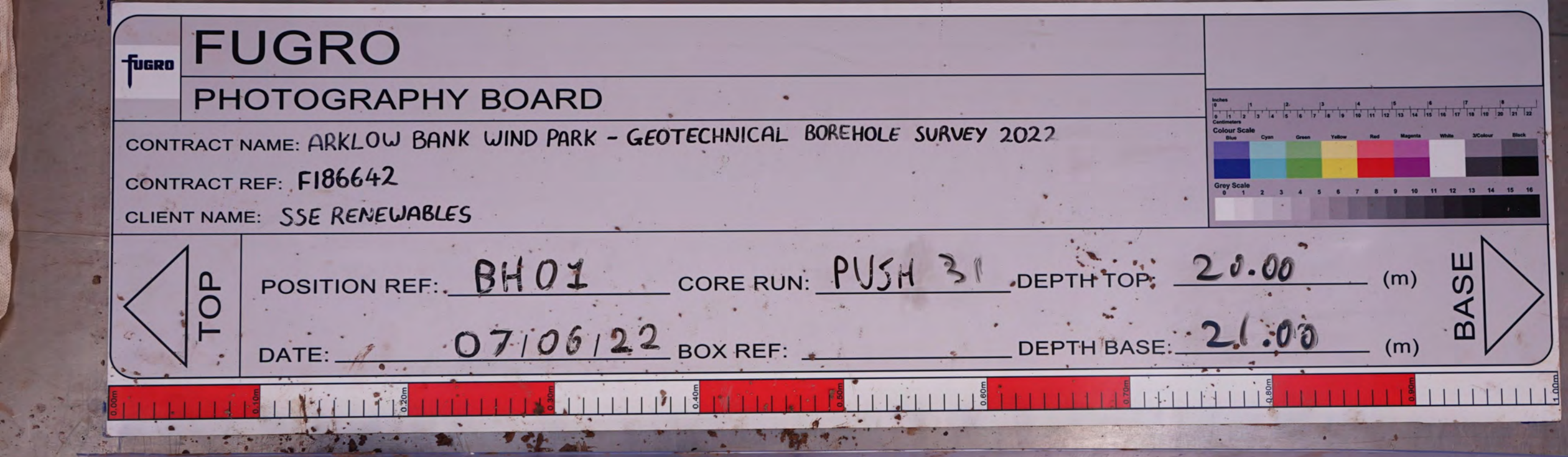
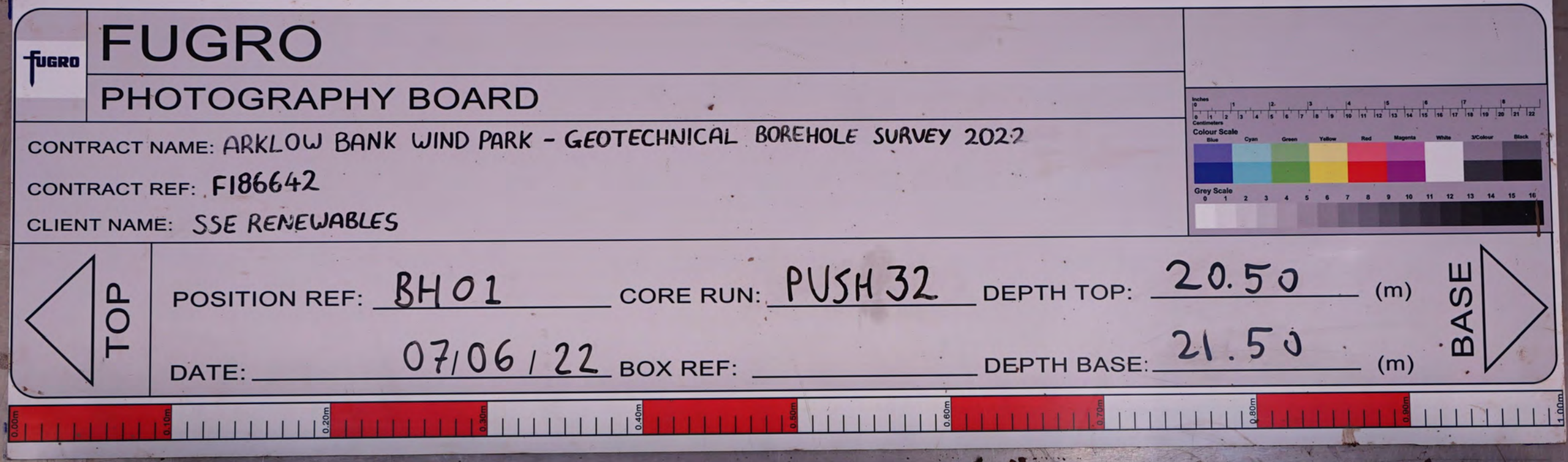

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 31
DEPTH TOP: 20.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 21.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.94


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 32
DEPTH TOP: 20.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m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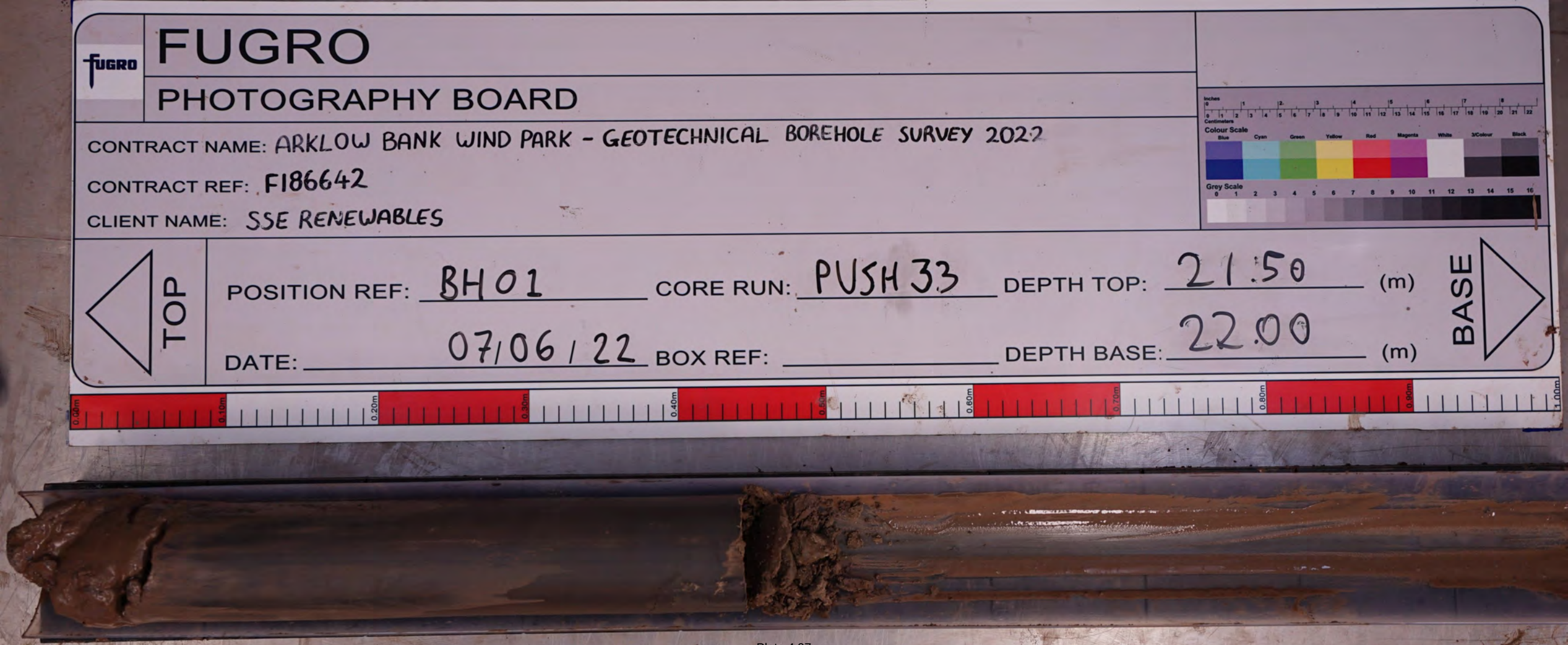
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 32
DEPTH TOP: 20.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.96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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 33
DEPTH TOP: 21.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.97


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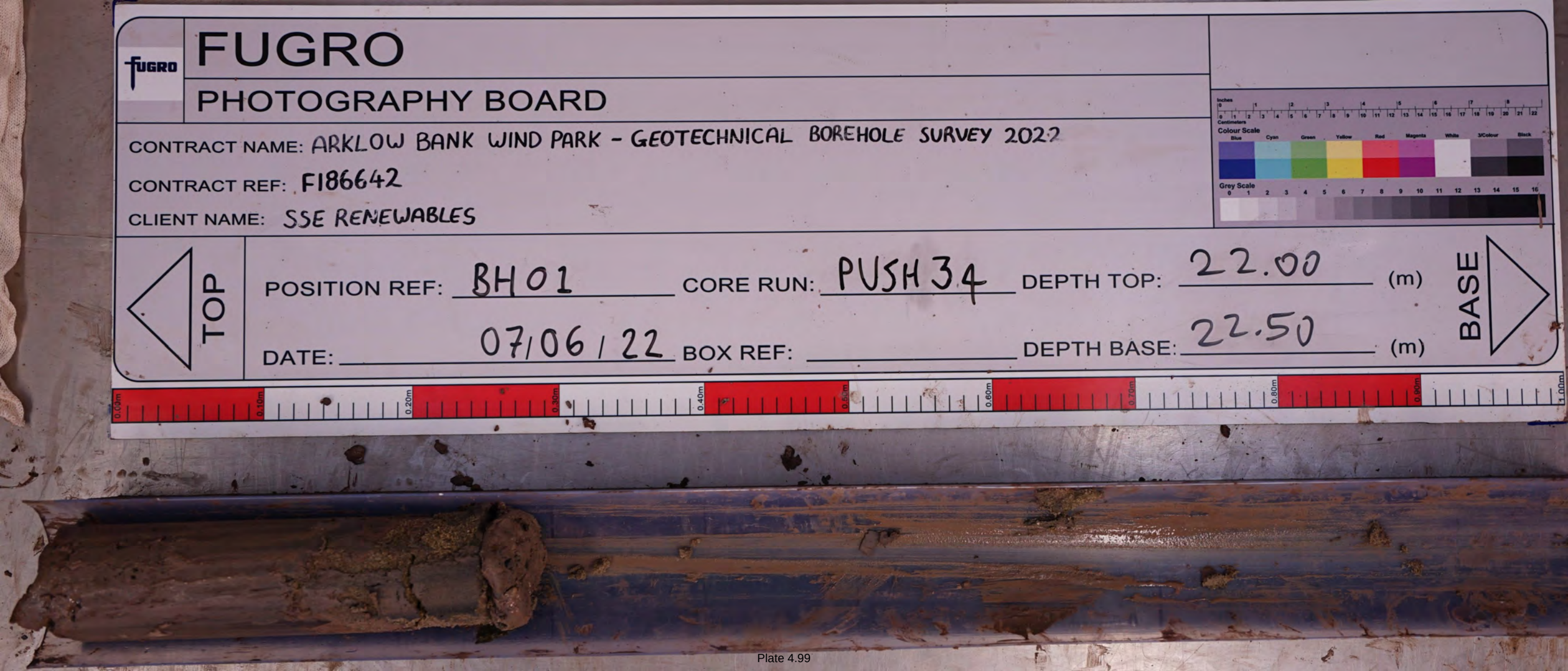
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 33
DEPTH TOP: 21.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.98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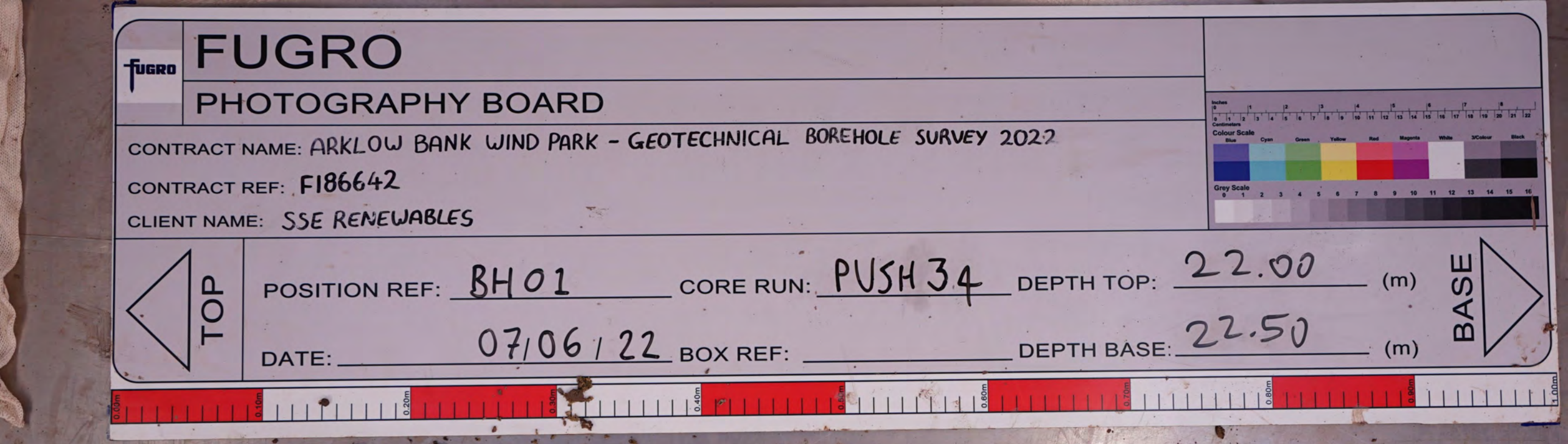
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 34
DEPTH TOP: 22.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 22.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.99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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 34
DEPTH TOP: 22.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 22.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.100

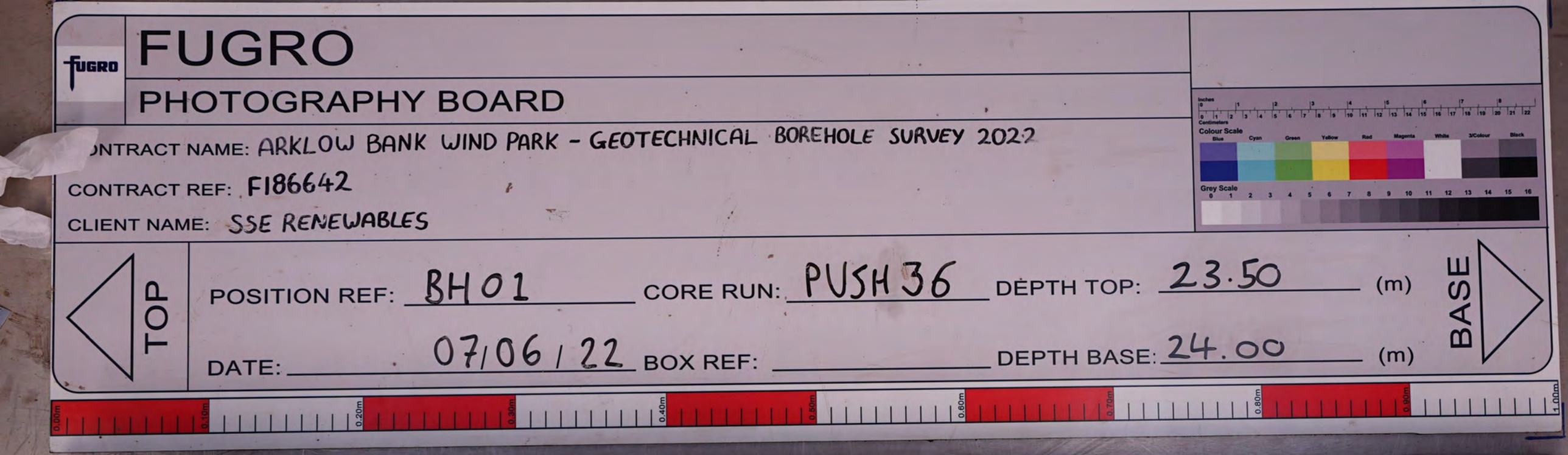
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 36
DEPTH TOP: 23.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.101


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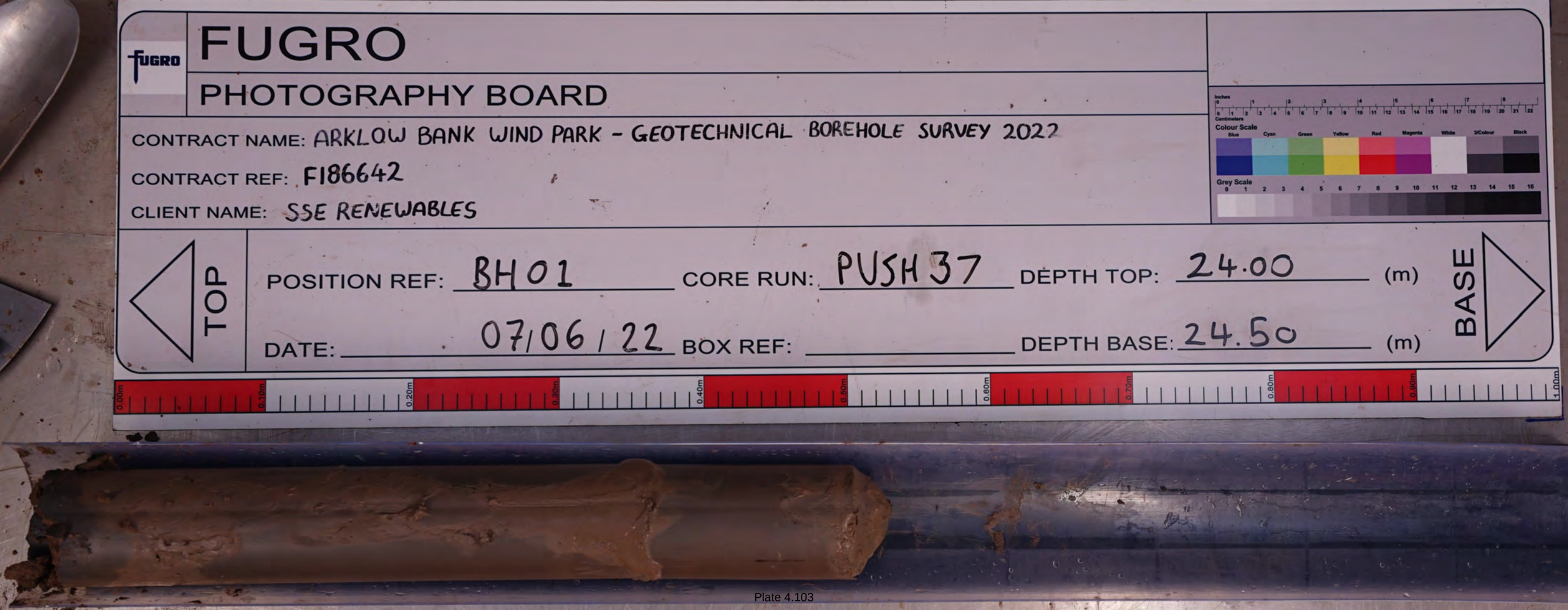
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 36
DEPTH TOP: 23.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.102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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 37
DEPTH TOP: 24.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.103

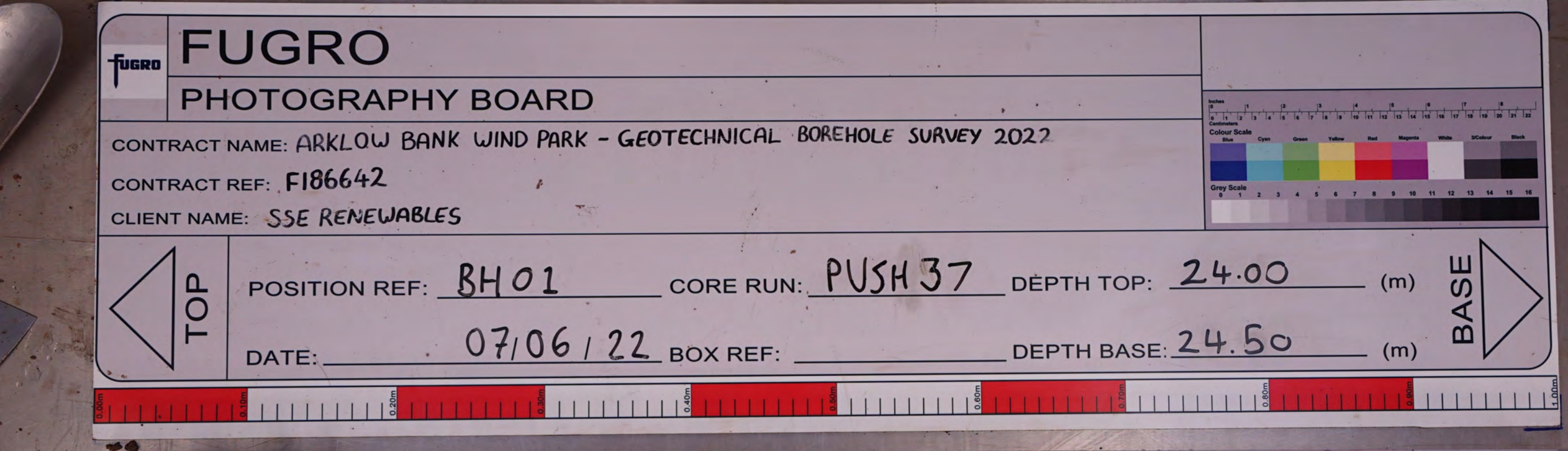
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 37
DEPTH TOP: 24.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.104

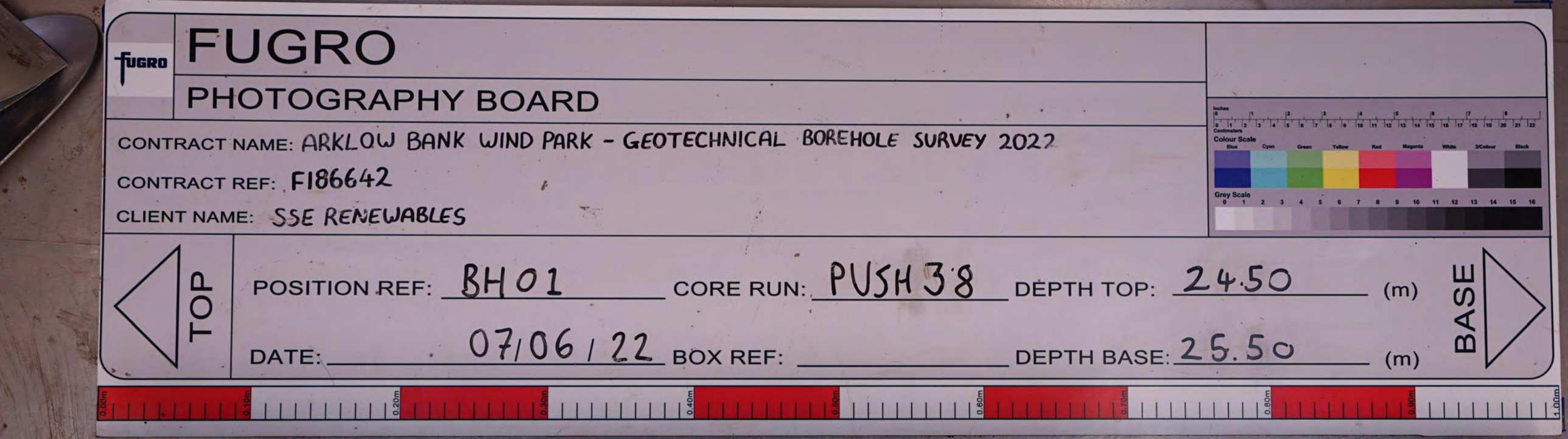
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 38
DEPTH TOP: 24.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.105


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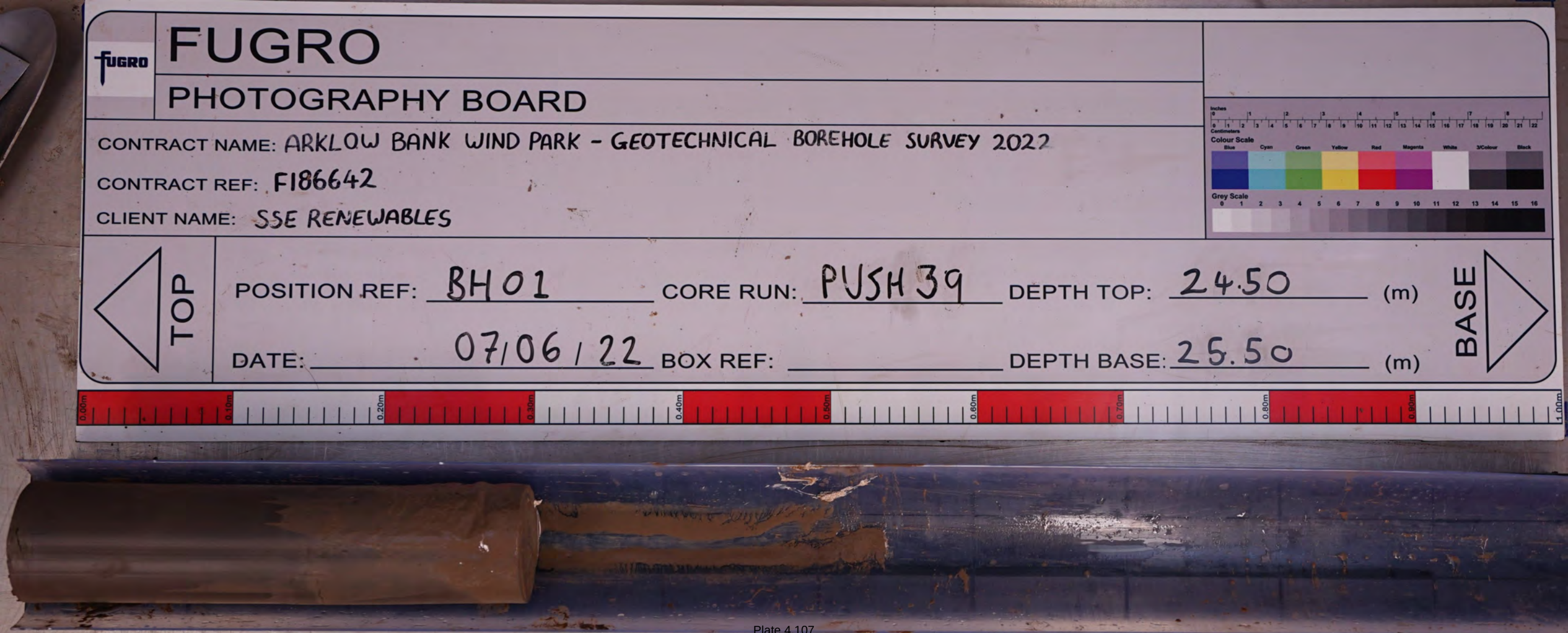
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 38
DEPTH TOP: 24.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.106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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 39
DEPTH TOP: 24.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.107

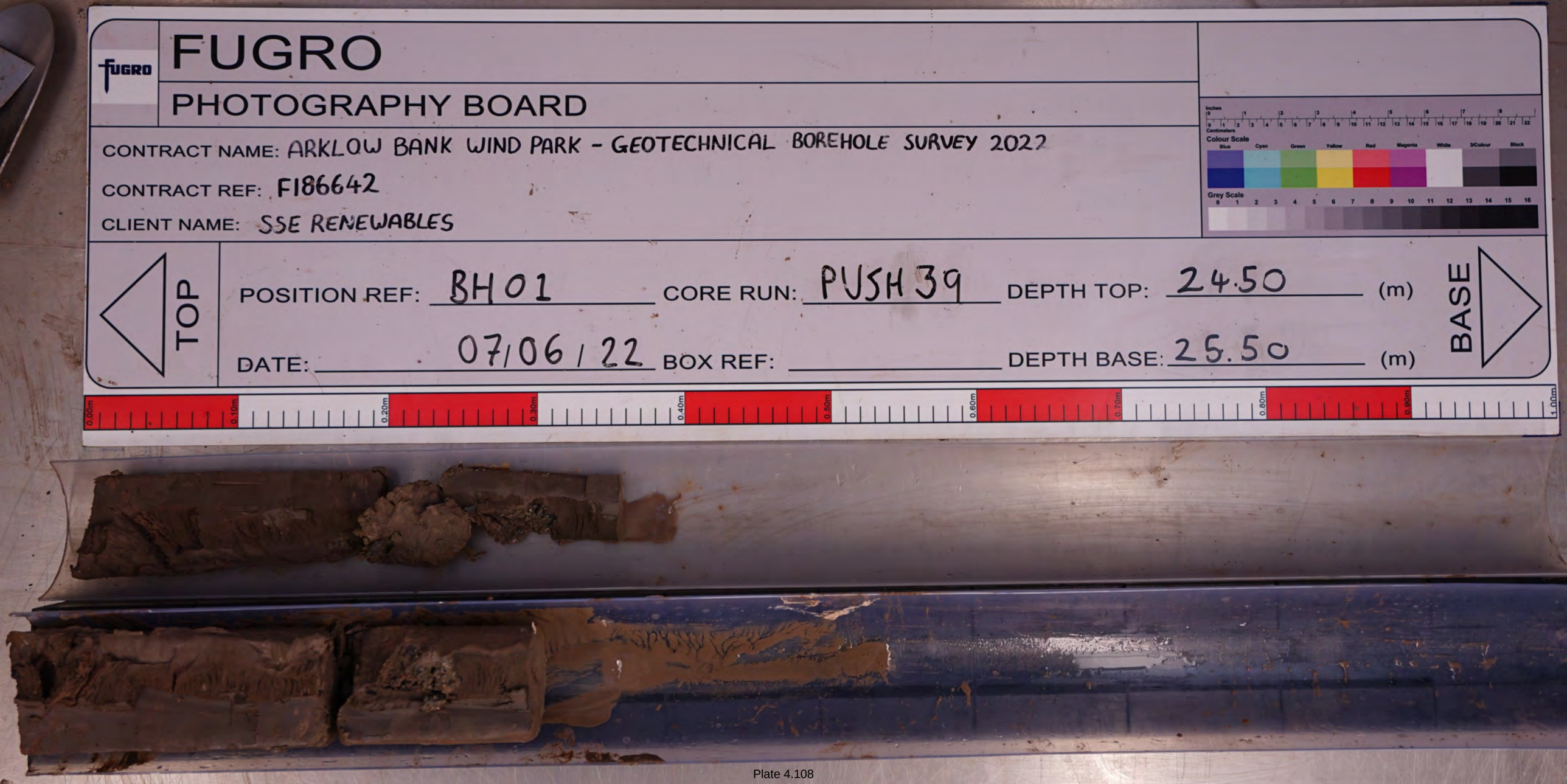
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 39
DEPTH TOP: 24.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.108

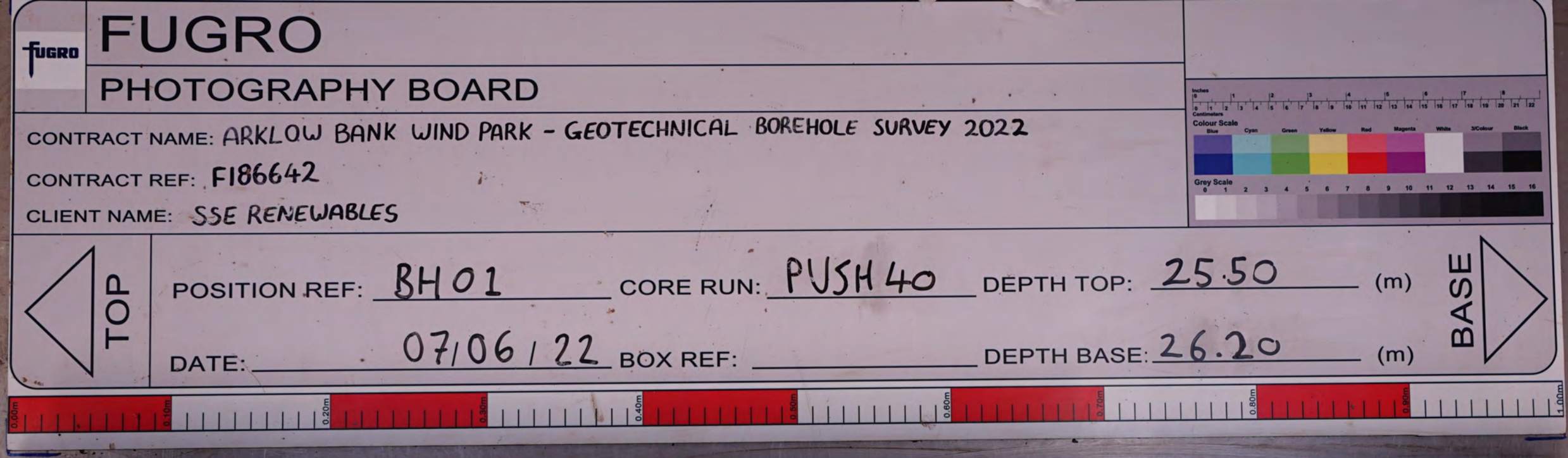
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 40
DEPTH TOP: 25.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 26.20 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.109


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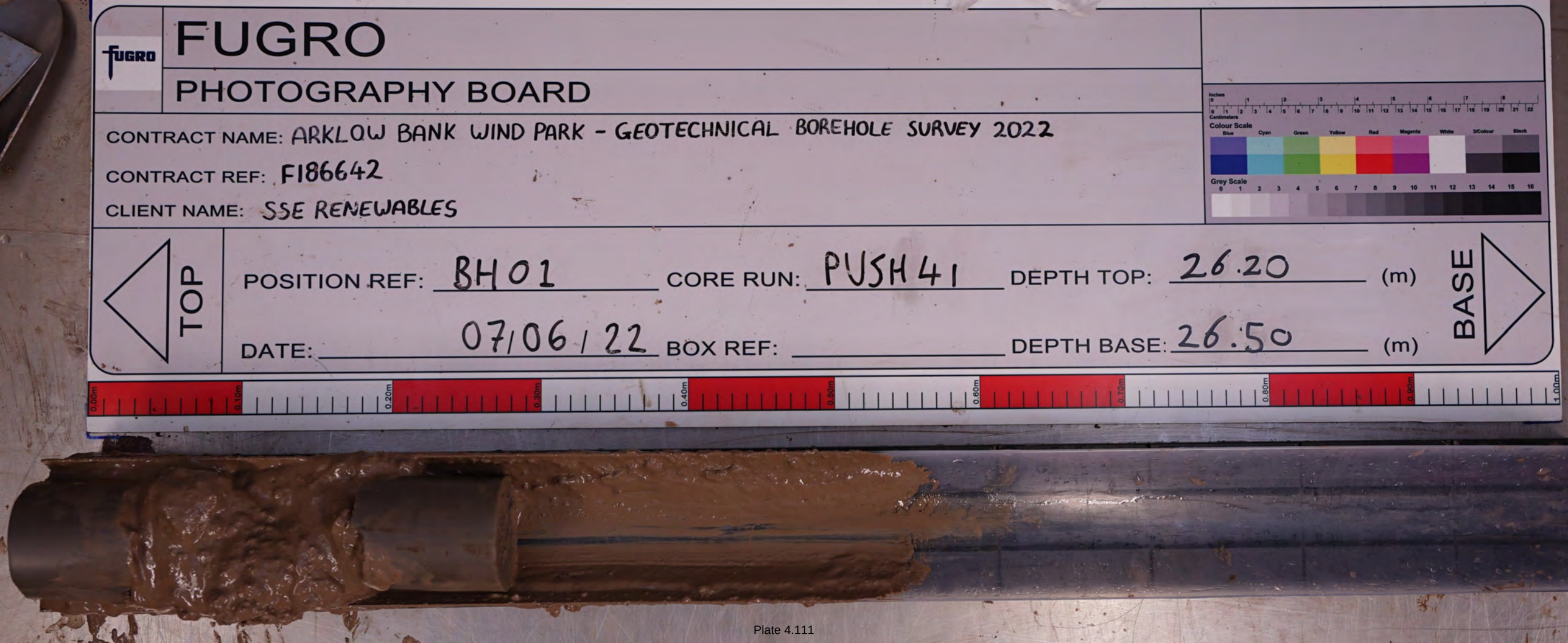
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 40
DEPTH TOP: 25.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 26.20 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.110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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 41
DEPTH TOP: 26.20 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.111

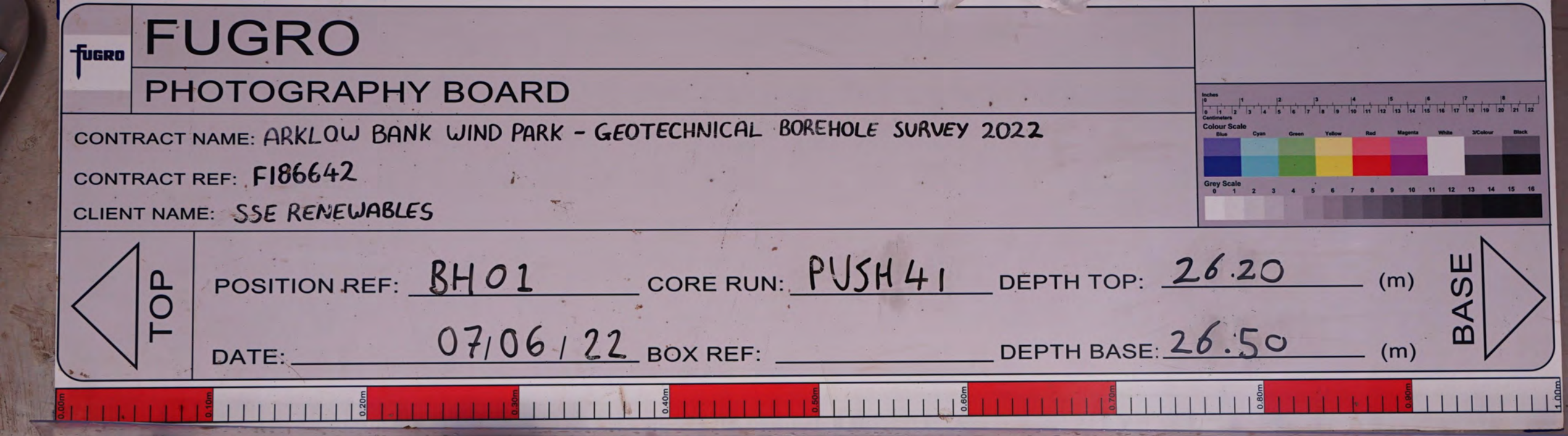
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 41
DEPTH TOP: 26.20 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.112

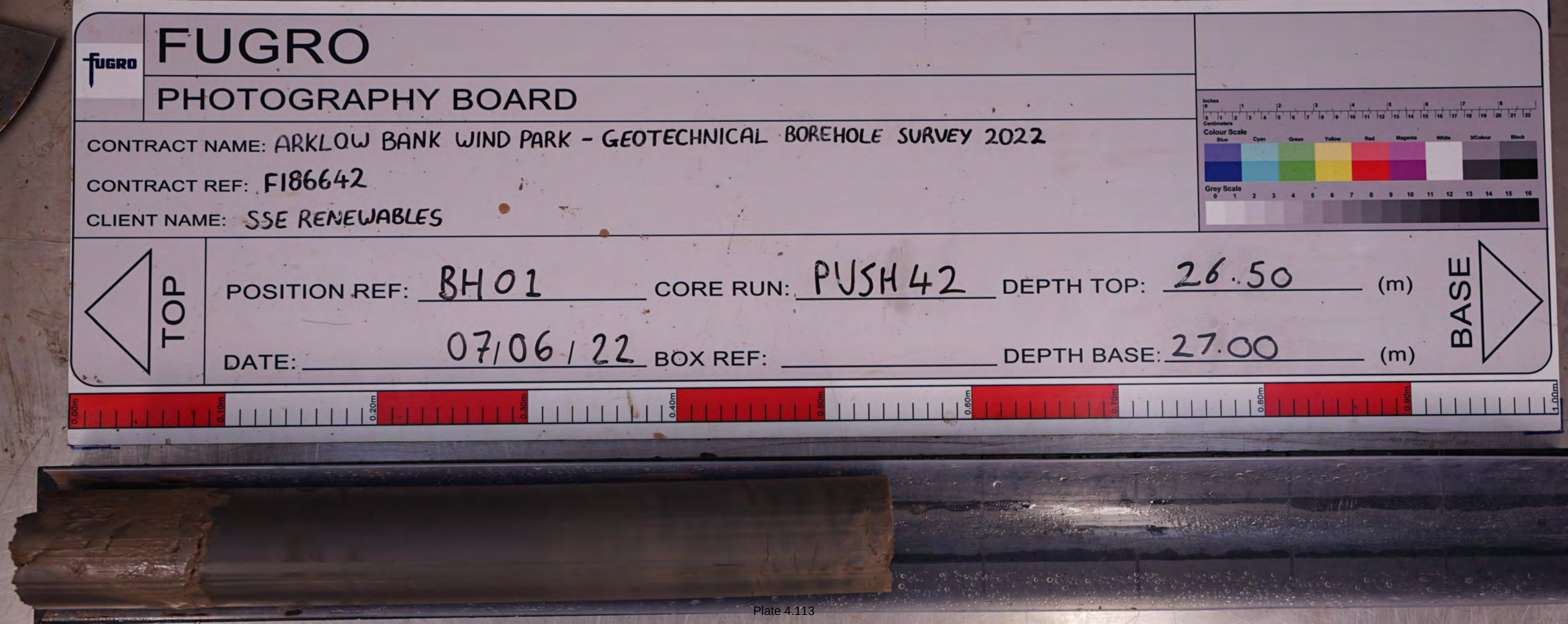
FUGRO
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 42
DEPTH TOP: 26.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.113


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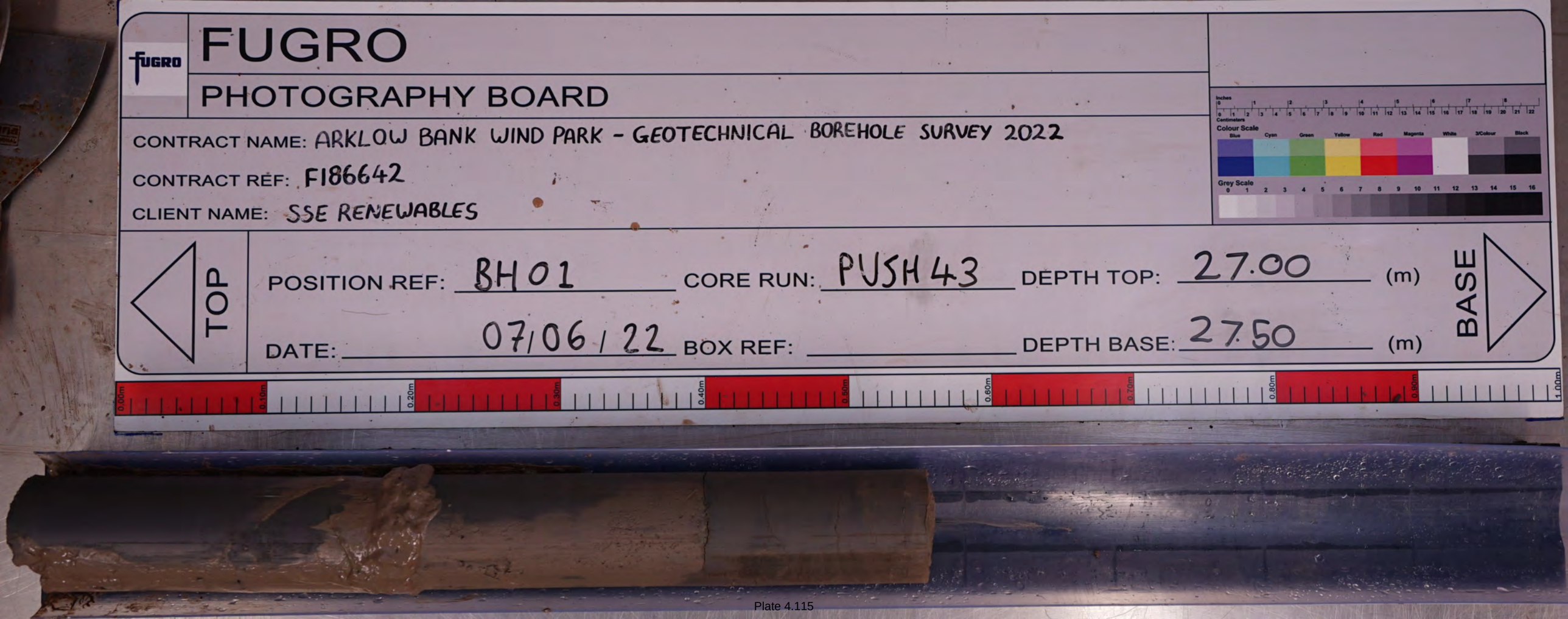
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 42
DEPTH TOP: 26.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.114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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 43
DEPTH TOP: 27.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 27.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.115


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 43
DEPTH TOP: 27.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 27.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.116

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

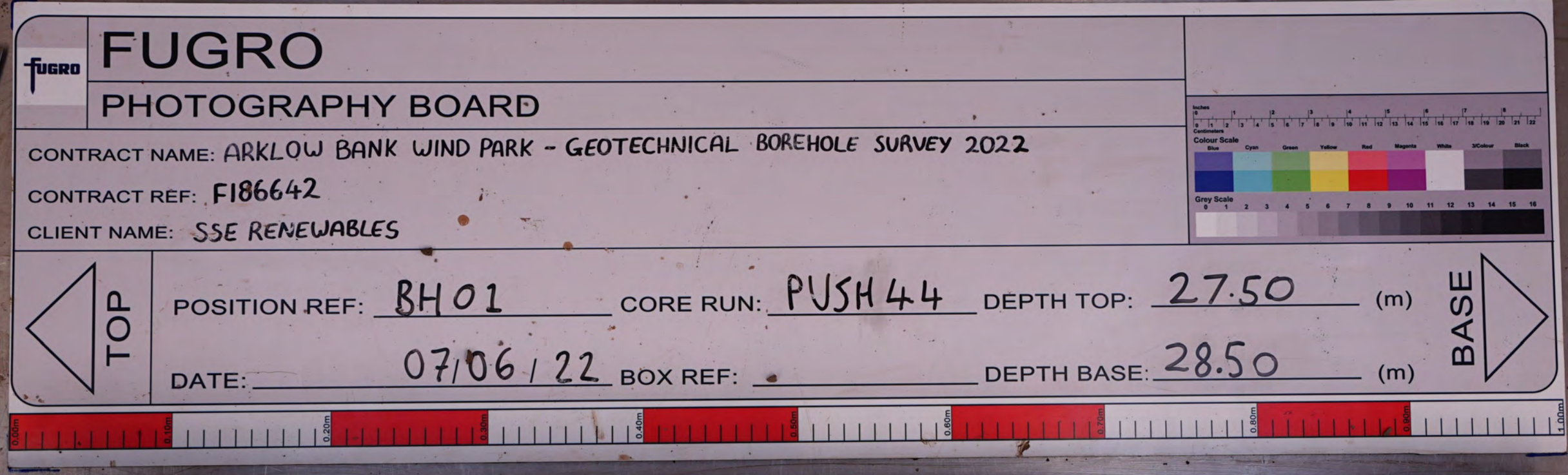
POSITION REF: BH01 CORE RUN: PUSH 44 DEPTH TOP: 27.50 (m)

DATE: 07/06/22 BOX REF: DEPTH BASE: 28.00 (m)

BASE



Plate 4.117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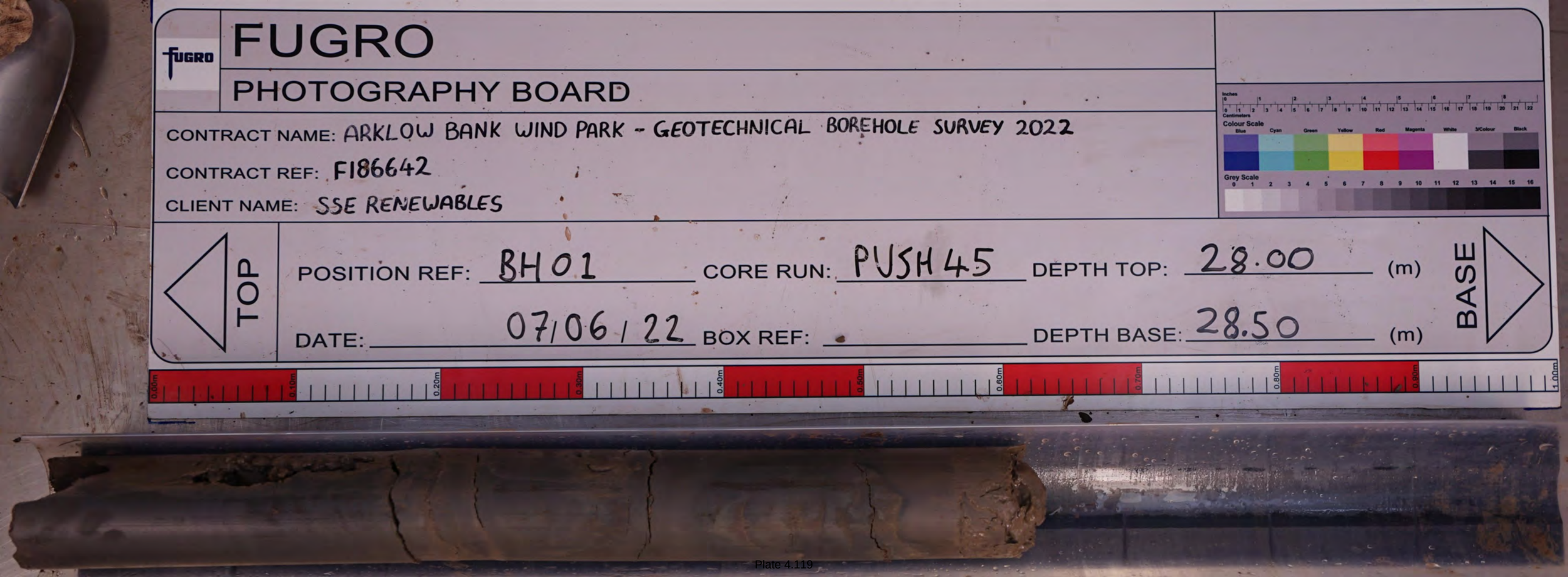
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH44
DEPTH TOP: 27.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.118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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 45
DEPTH TOP: 28.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.119


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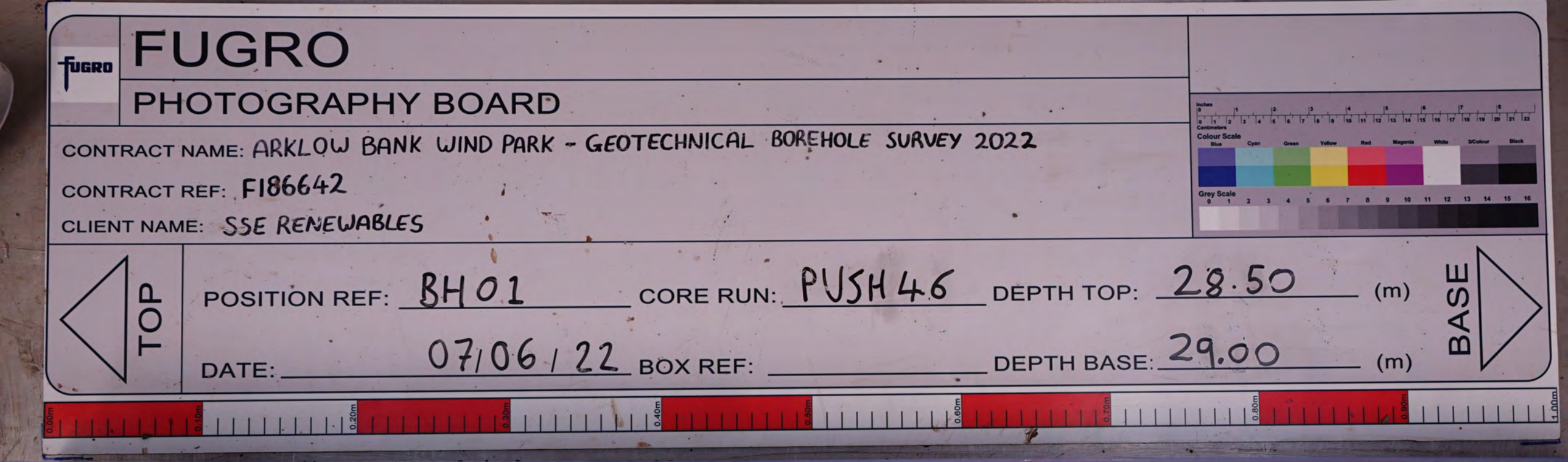
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 45
DEPTH TOP: 28.00 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.120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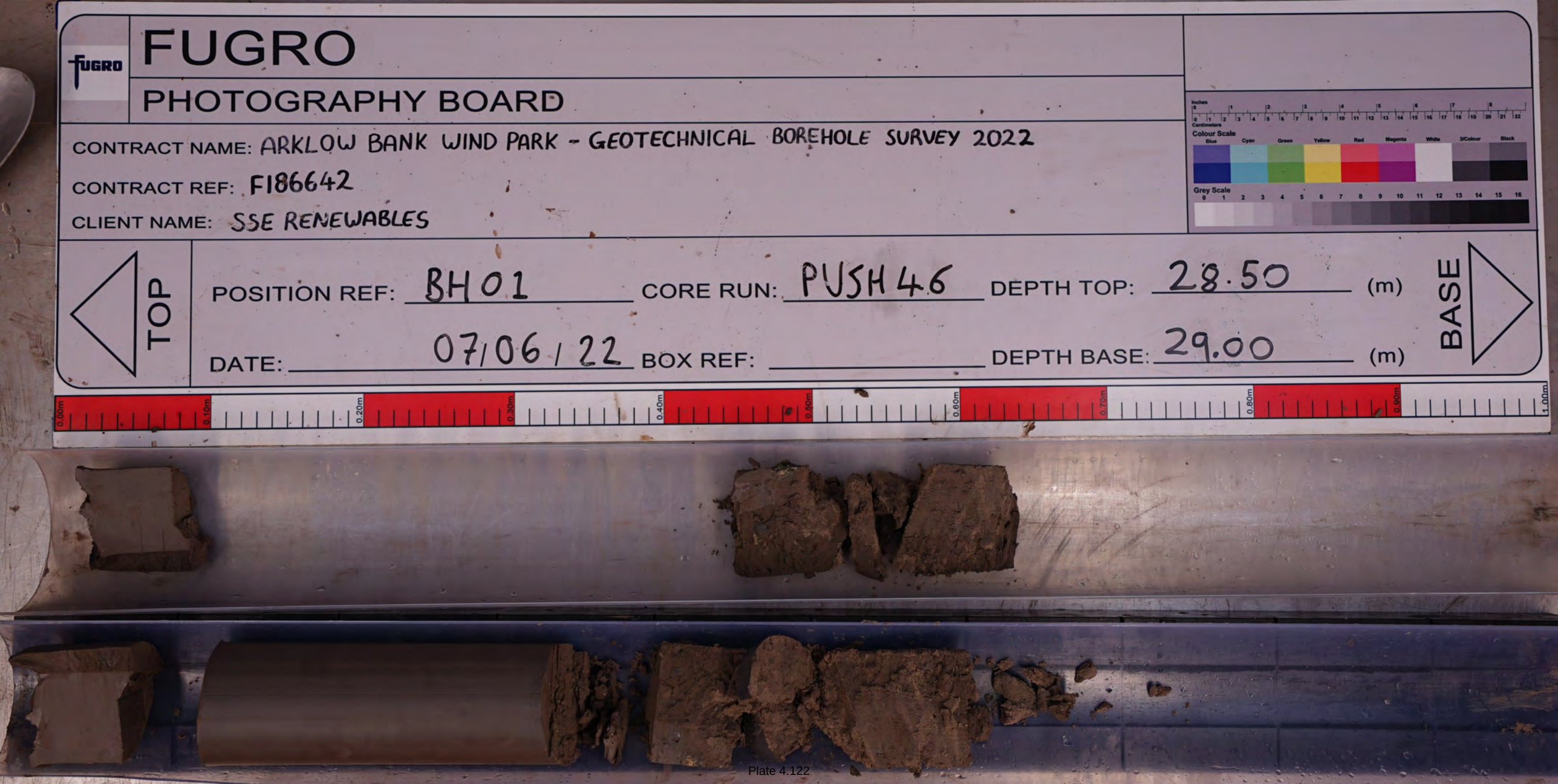
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 46
DEPTH TOP: 28.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.121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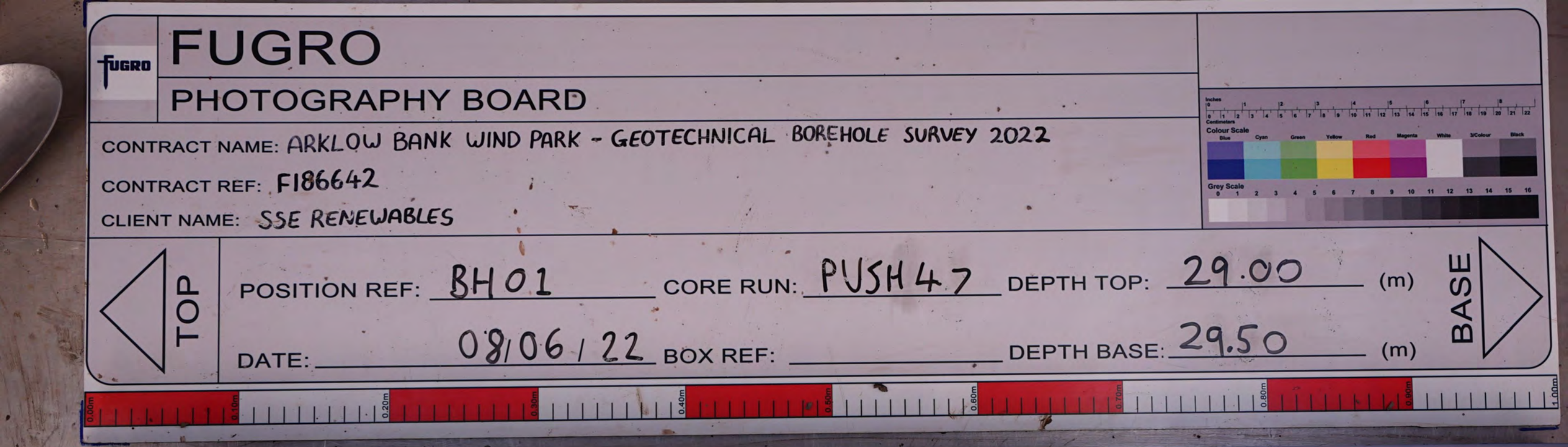
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH46
DEPTH TOP: 28.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.122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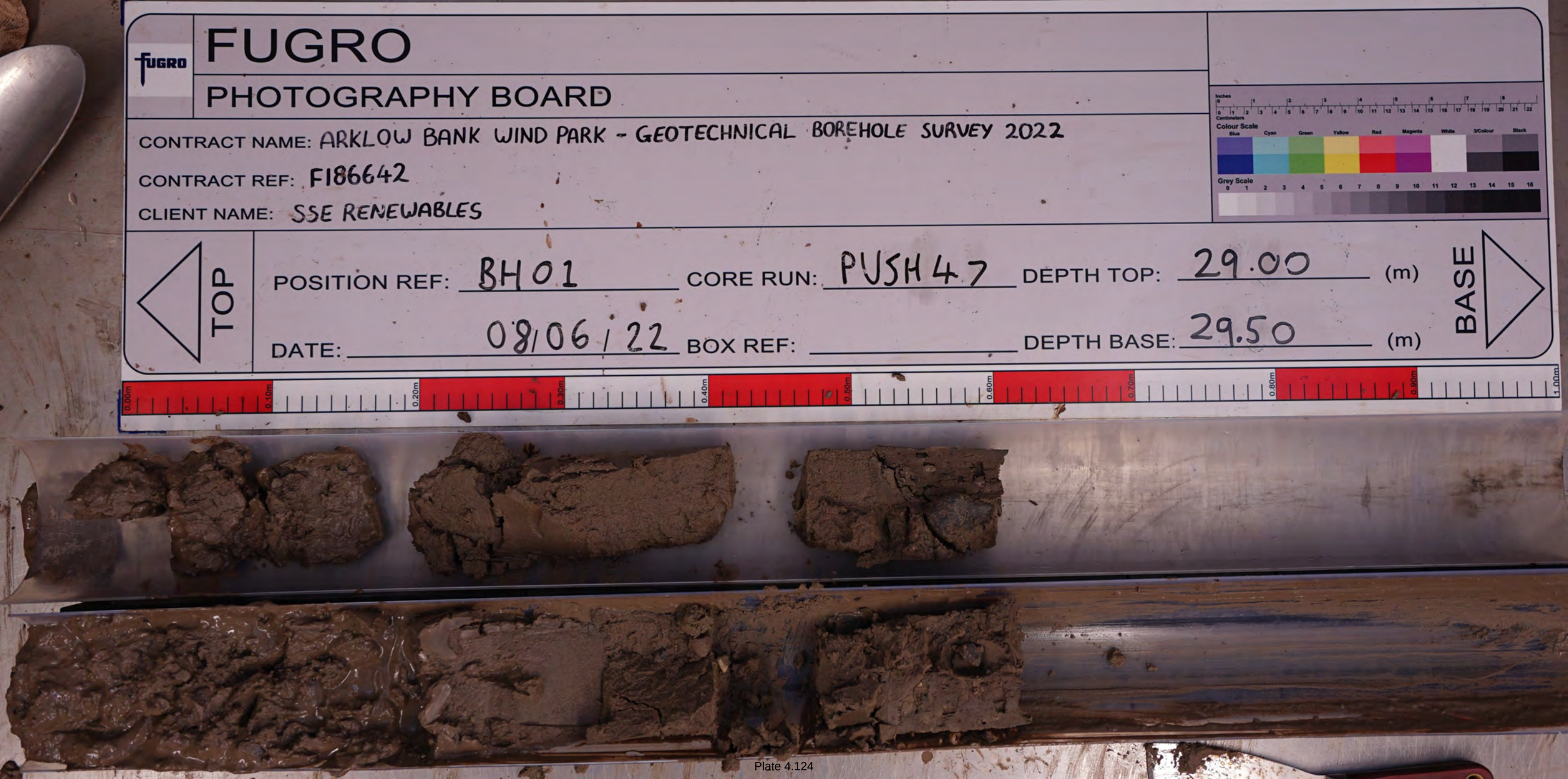
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH47
DEPTH TOP: 29.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.123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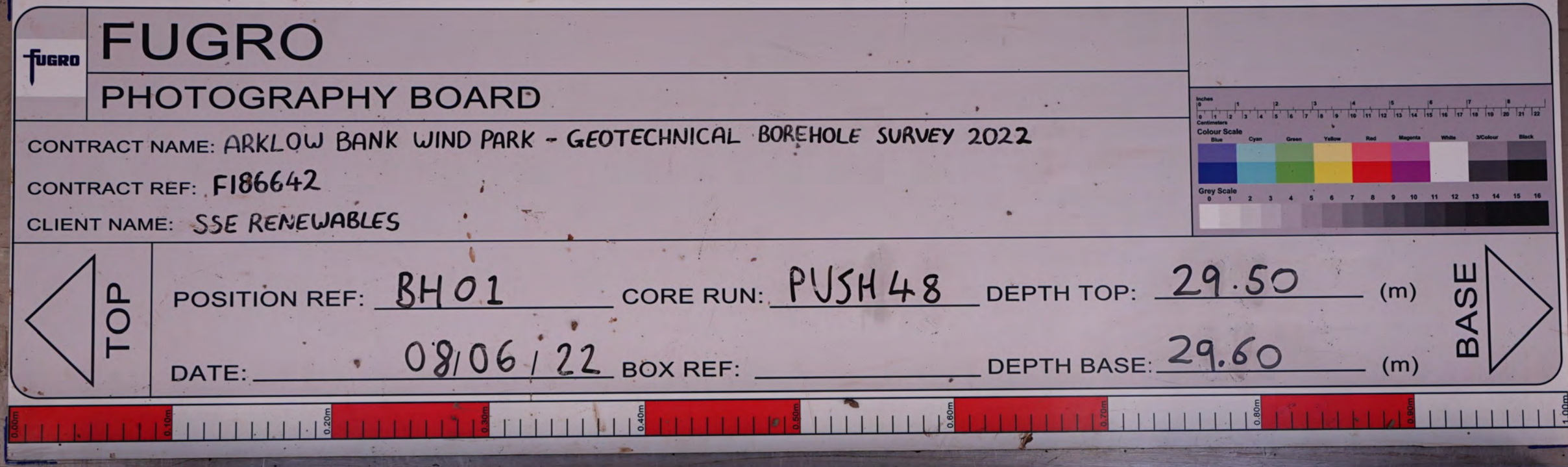
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH47
DEPTH TOP: 29.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.124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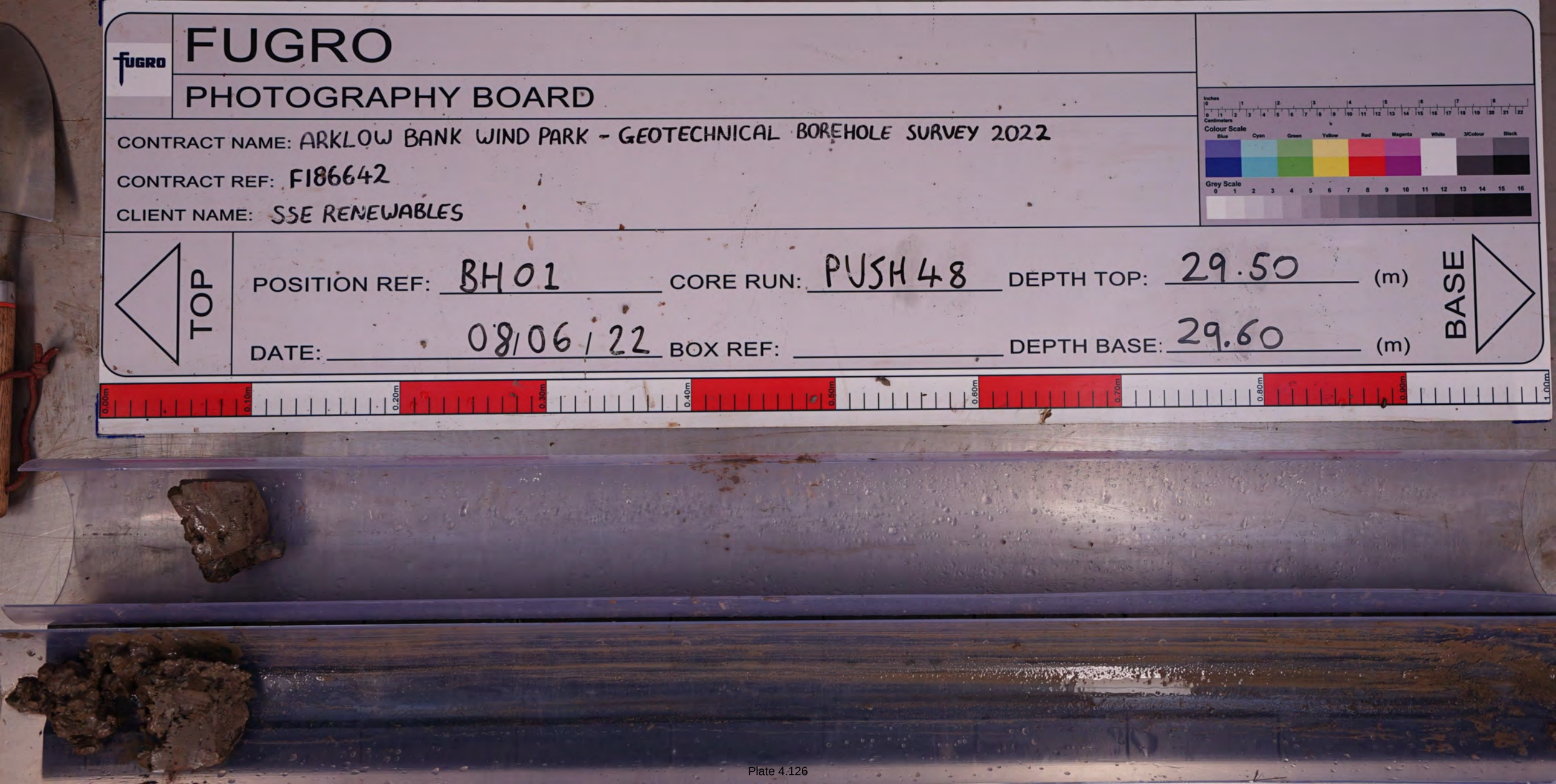
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH48
DEPTH TOP: 29.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 29.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.125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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 48
DEPTH TOP: 29.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 29.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.126

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

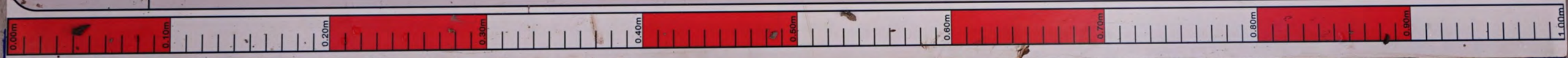
CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: HAMMER 49 DEPTH TOP: 29.60 (m)

DATE: 08/06/22 BOX REF: _____ DEPTH BASE: 29.80 (m)

BASE



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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

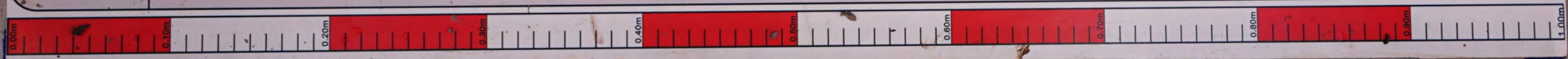
CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: HAMMER 49 DEPTH TOP: 29.60 (m)

DATE: 08/06/22 BOX REF: _____ DEPTH BASE: 29.80 (m)

BASE



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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 08/06/22

CORE RUN: CR1

BOX REF: 1

DEPTH TOP: 29.60 (m)

DEPTH BASE: 30.50 (m)

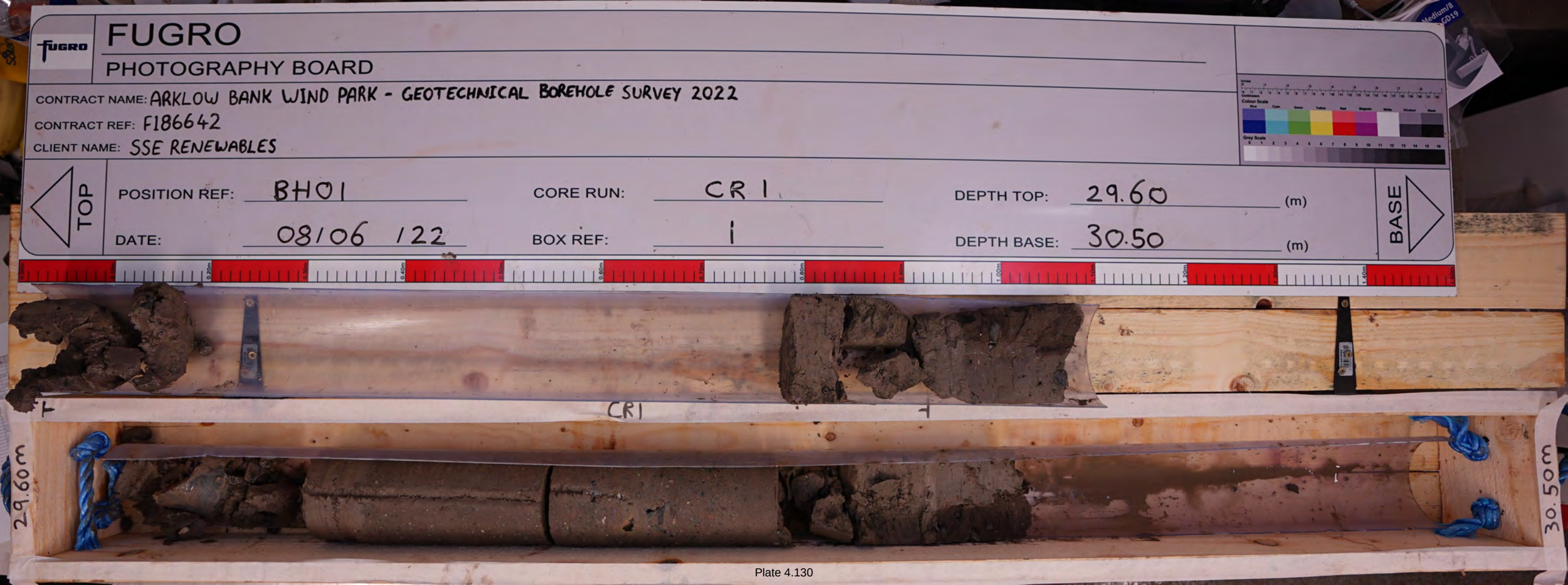
BASE

CR1

29.60m

30.50m

Plate 4.129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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR1
DEPTH TOP: 29.60 (m)
DATE: 08/06/22
BOX REF: 1
DEPTH BASE: 30.50 (m)
BASE
T
CR1
T
29.60m
30.50m

Plate 4.130

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 08/06/22

CORE RUN: CR2

BOX REF: 2

DEPTH TOP: 30.50 (m)

DEPTH BASE: 31.50 (m)

BASE

CR2

30.50m

31.50m

Plate 4.131


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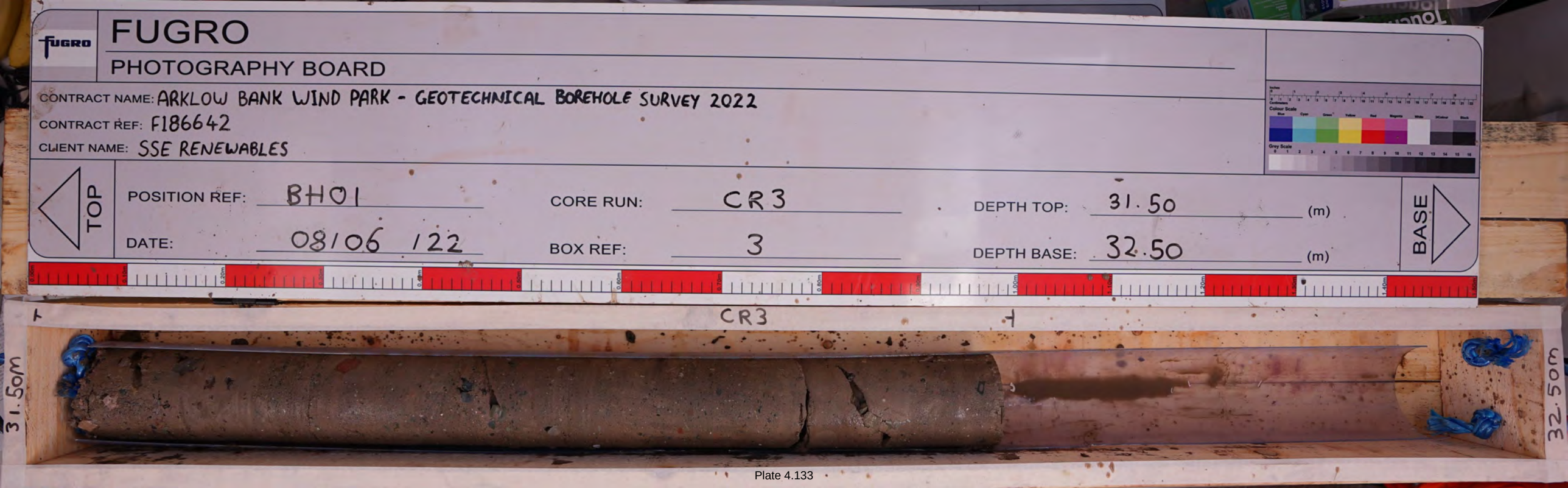
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 08/06/22
CORE RUN: CR2
BOX REF: 2
DEPTH TOP: 30.50 (m)
DEPTH BASE: 31.50 (m)
BASE
30.50m
31.50m

Plate 4.132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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR3
DEPTH TOP: 31.50 (m)
DATE: 08/06/22
BOX REF: 3
DEPTH BASE: 32.50 (m)
BASE
CR3
31.50m
32.50m

Plate 4.133


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 08/06/22
CORE RUN: CR3
BOX REF: 3
DEPTH TOP: 31.50 (m)
DEPTH BASE: 32.50 (m)
BASE
CR3
31.50m
32.50m

Plate 4.134

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

CORE RUN: CR4

DEPTH TOP: 32.50 (m)

DATE: 08/06/22

BOX REF: 4

DEPTH BASE: 33.00 (m)

BASE



Plate 4.135


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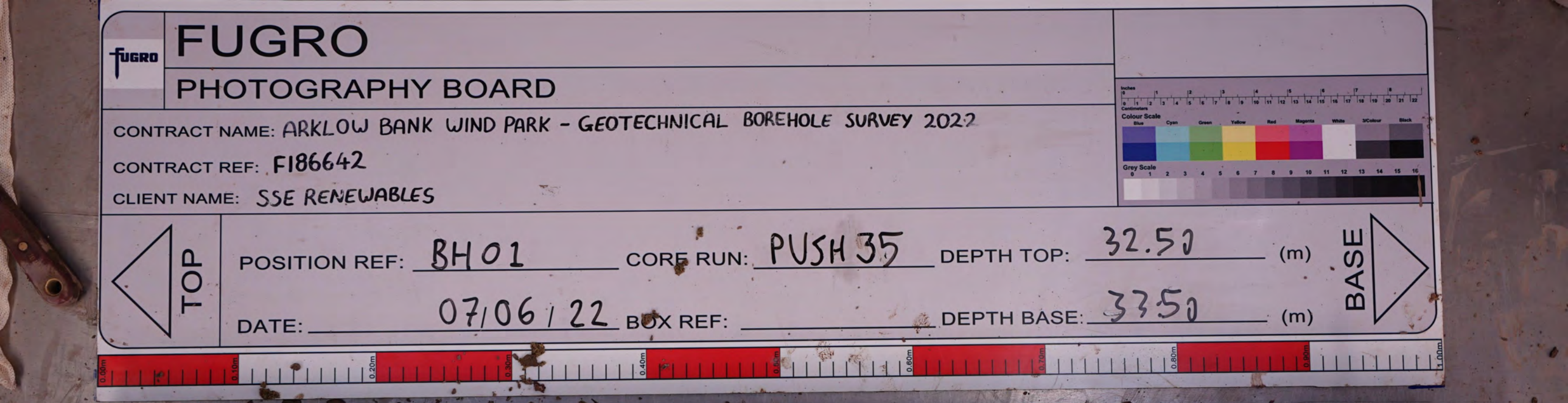
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR4
DEPTH TOP: 32.50 (m)
DATE: 08/06/22
BOX REF: 4
DEPTH BASE: 33.00 (m)
BASE
CR4
32.50m
33.00m
Medium/8
GD19

Plate 4.136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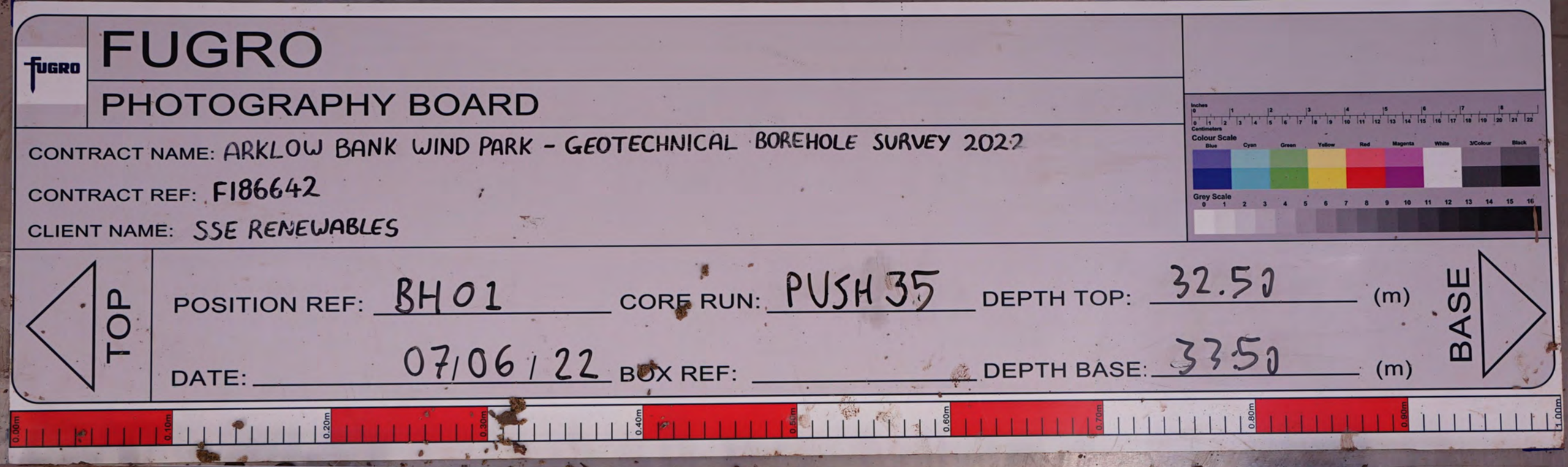
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 35
DEPTH TOP: 32.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 33.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.137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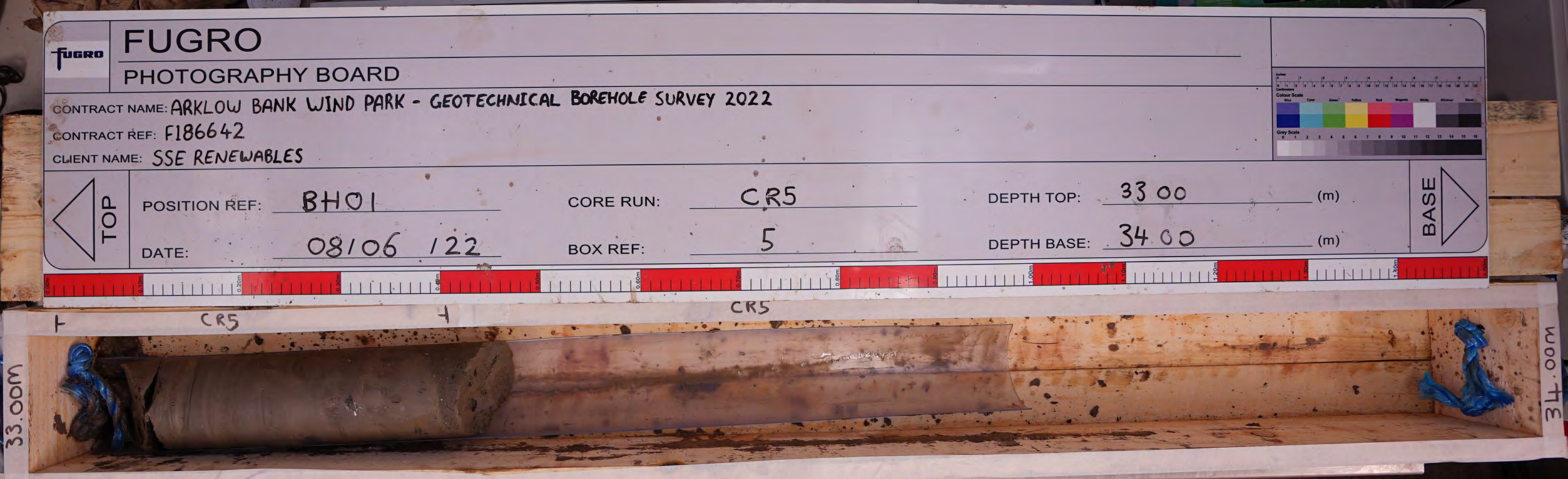
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 35
DEPTH TOP: 32.50 (m)
DATE: 07/06/22
BOX REF:
DEPTH BASE: 33.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 08/06/22
CORE RUN: CR5
BOX REF: 5
DEPTH TOP: 33.00 (m)
DEPTH BASE: 34.00 (m)
BASE
CR5
CR5
33.00m
34.00m

Plate 4.130


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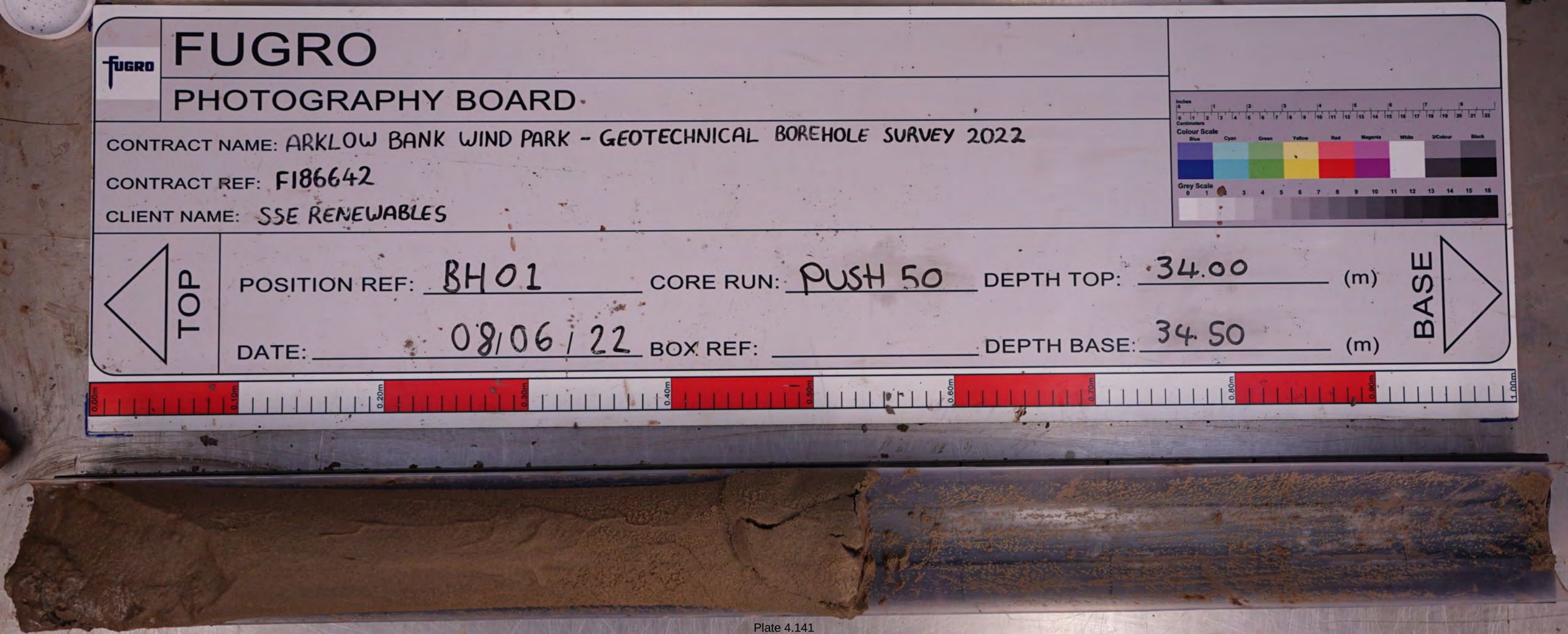
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR5
DEPTH TOP: 33 00 (m)
DATE: 08/06 /22
BOX REF: 5
DEPTH BASE: 34 00 (m)
BASE
CR5
CR5
33.00m
34.00m

Plate 4.140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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 50
DEPTH TOP: 34.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 34.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.141


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 50
DEPTH TOP: 34.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 34.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.142

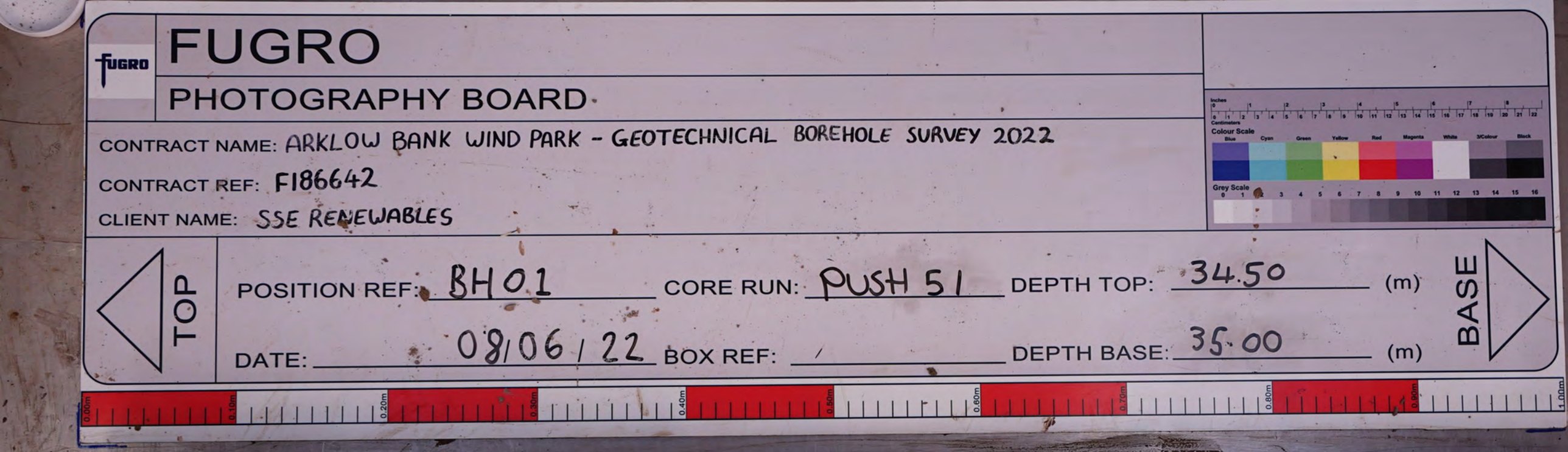
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 51
DEPTH TOP: 34.50 (m)
DATE: 08/06/22
BOX REF: /
DEPTH BASE: 35.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.143

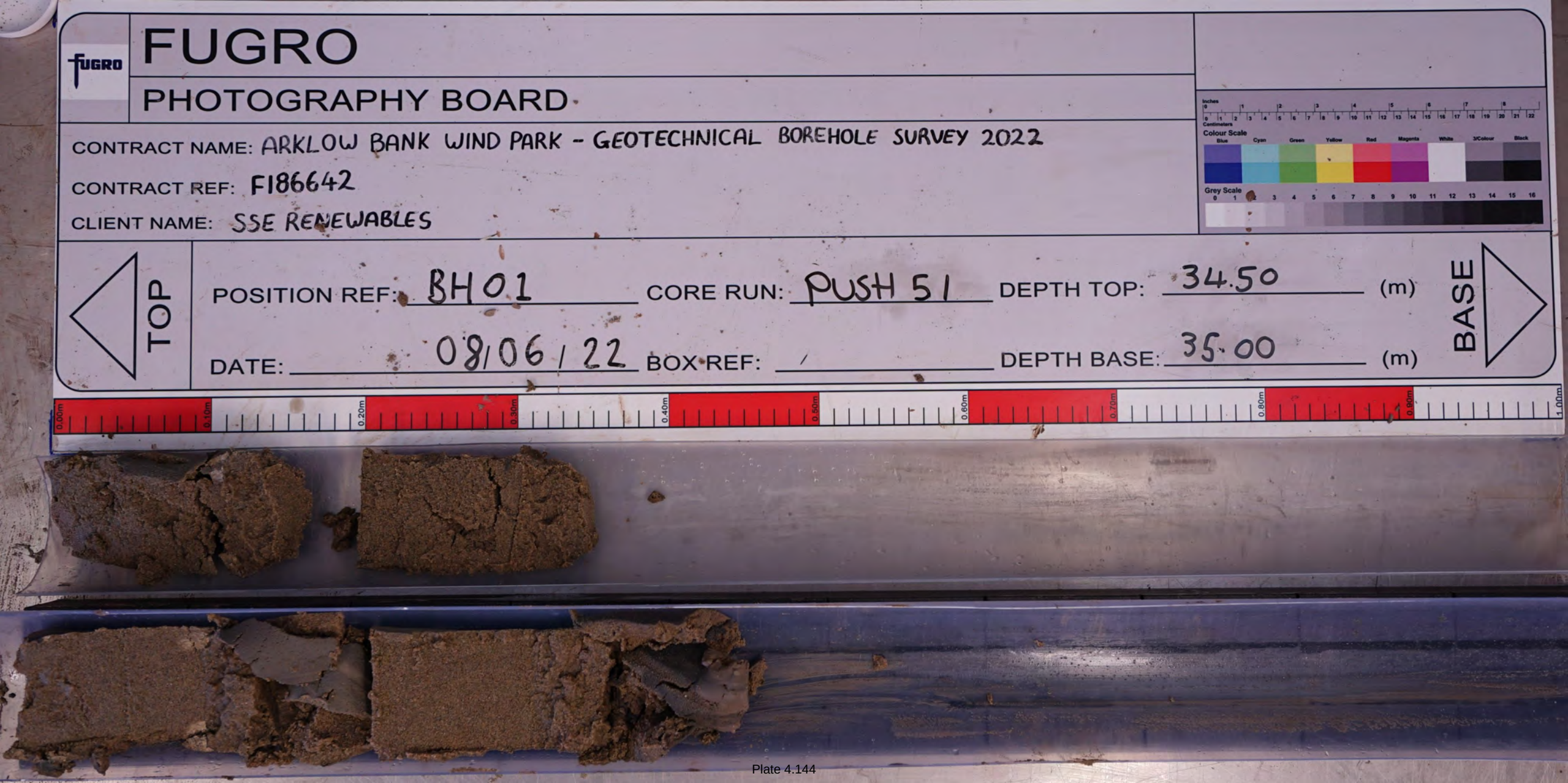
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 51
DEPTH TOP: 34.50 (m)
DATE: 08/06/22
BOX REF: /
DEPTH BASE: 35.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.144

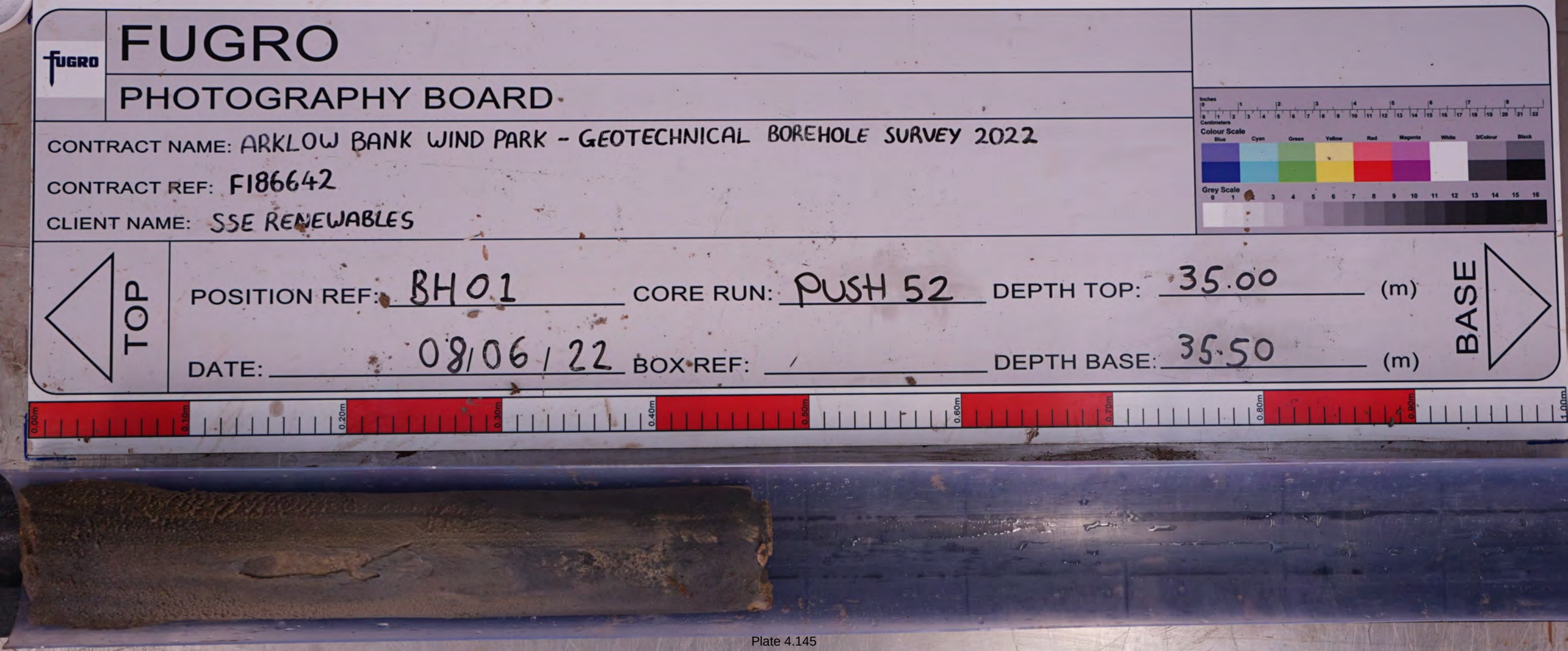
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 52
DEPTH TOP: 35.00 (m)
DATE: 08/06/22
BOX REF: /
DEPTH BASE: 35.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.145

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 52 DEPTH TOP: 35.00 (m)

DATE: 08/06/22 BOX REF: / DEPTH BASE: 35.50 (m)

BASE



Plate 4.146

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 53 DEPTH TOP: 35.50 (m)

DATE: 08/06/22 BOX REF: / DEPTH BASE: 36.00 (m)

BASE



Plate 4.147


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 53
DEPTH TOP: 35.50 (m)
DATE: 08/06/22
BOX REF: /
DEPTH BASE: 36.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.148

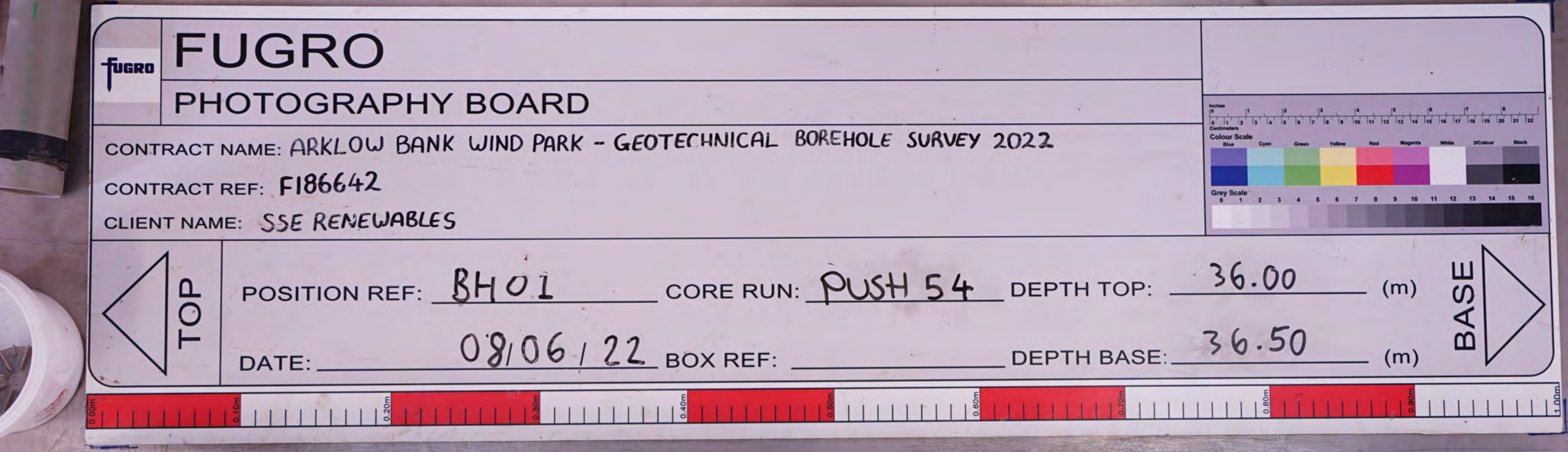
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 54
DEPTH TOP: 36.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 36.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.149


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 54
DEPTH TOP: 36.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 36.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.150

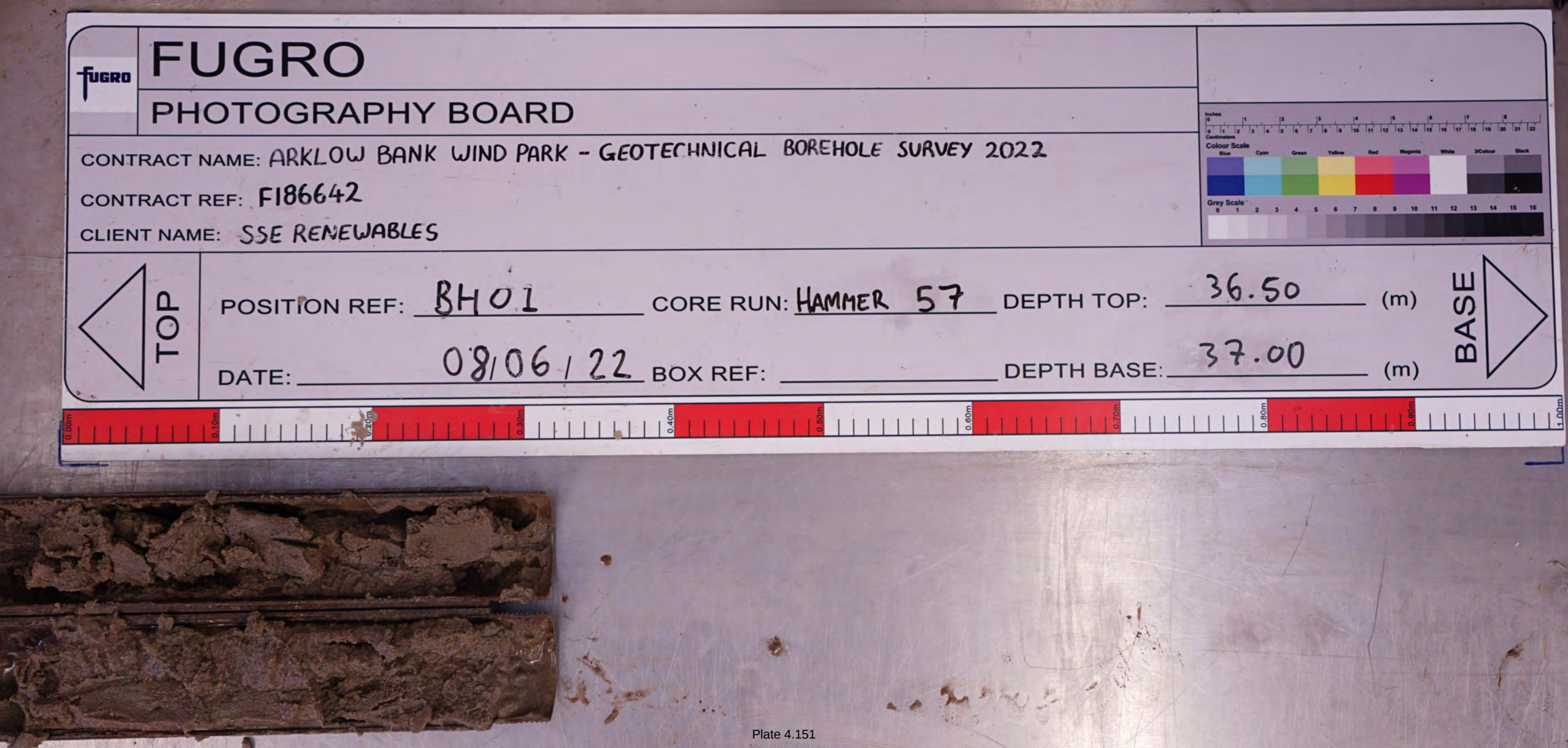
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: HAMMER 57
DEPTH TOP: 36.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 37.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.151

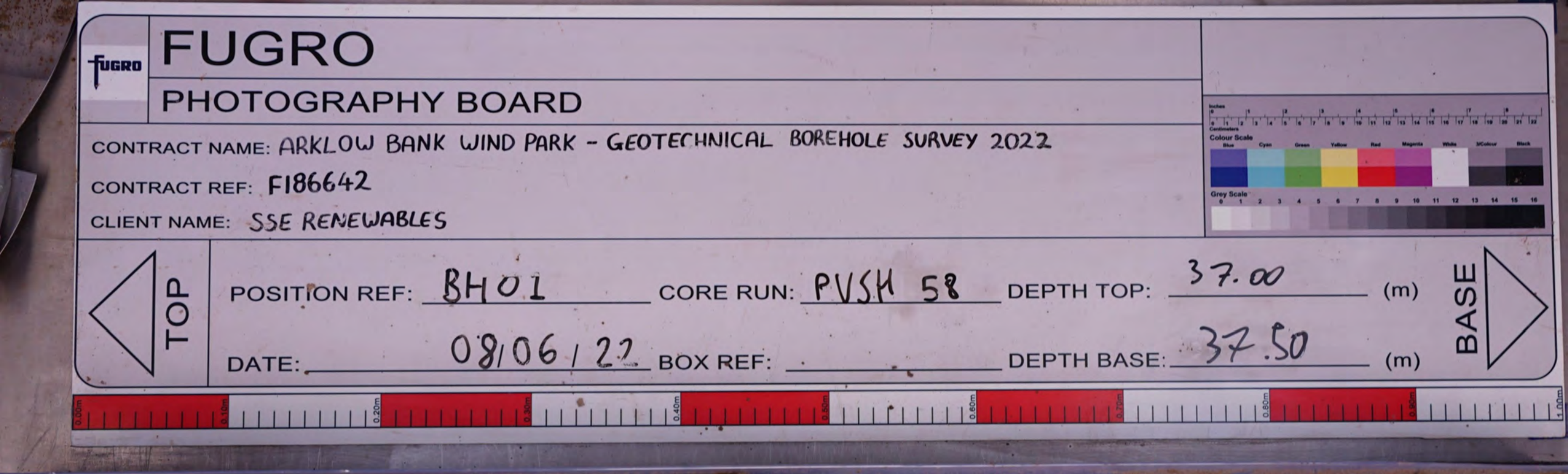
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 58
DEPTH TOP: 37.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 37.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.152


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 58
DEPTH TOP: 37.00 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 37.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.153

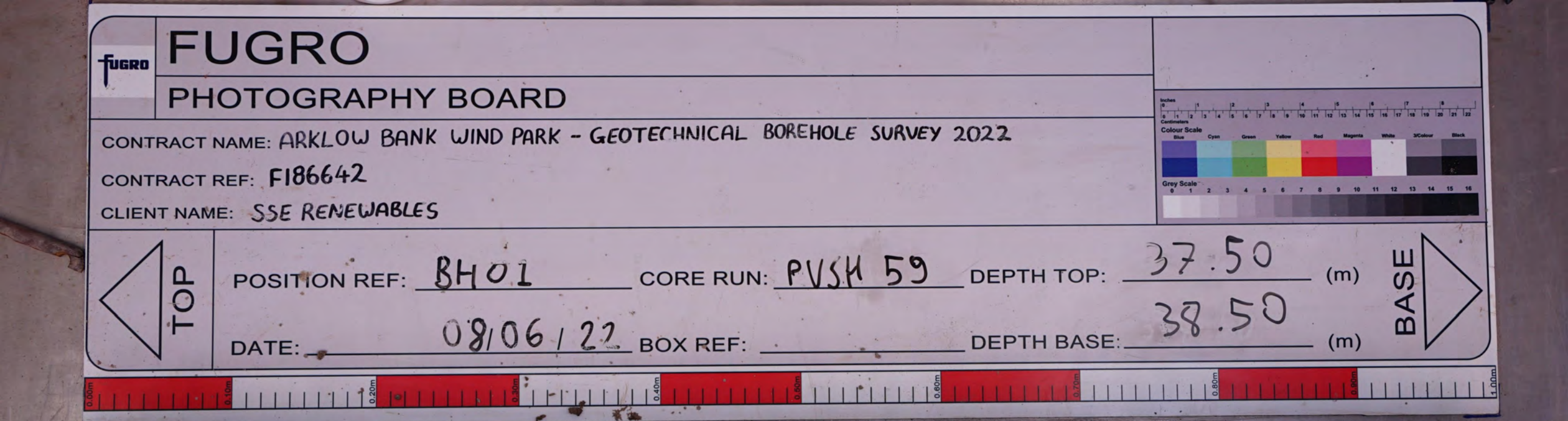
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PVSH 59
DEPTH TOP: 37.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 38.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.154

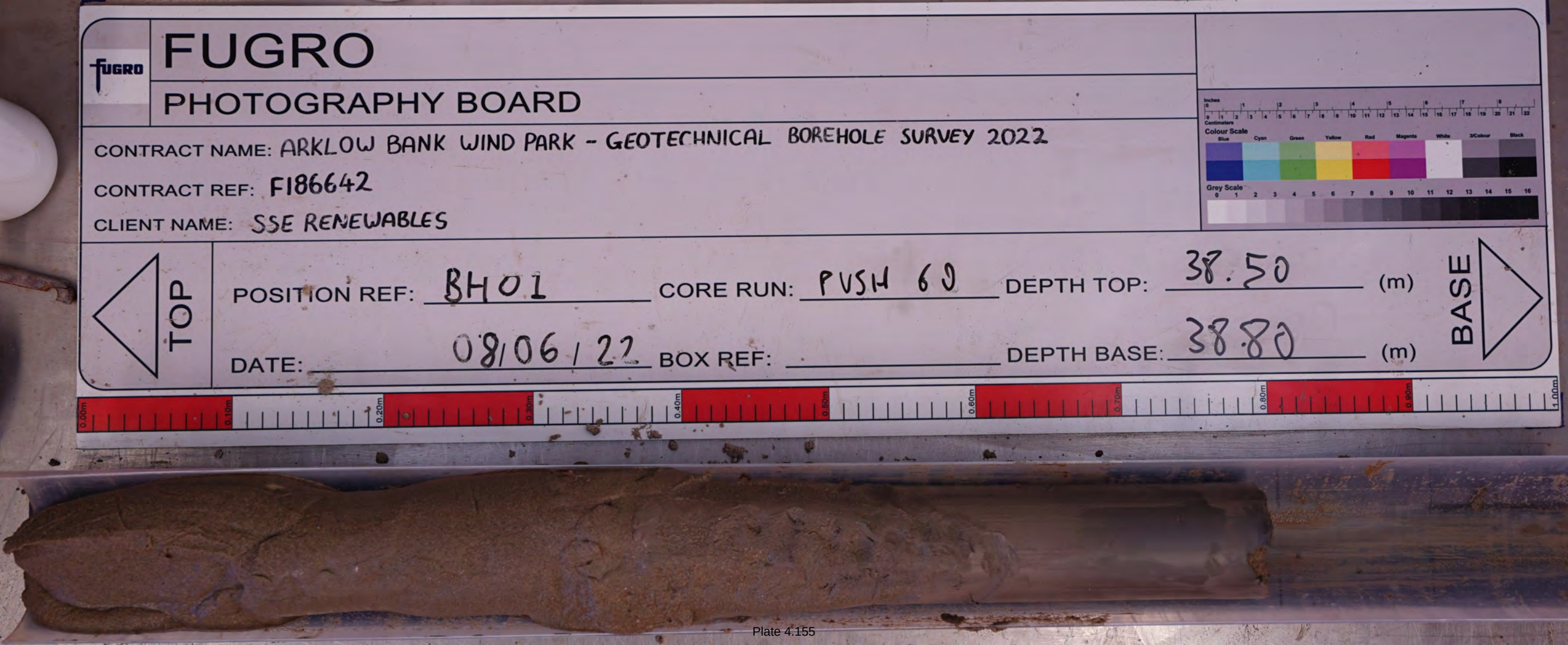
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 60
DEPTH TOP: 38.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 38.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.155


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 60
DEPTH TOP: 38.50 (m)
DATE: 08/06/22
BOX REF:
DEPTH BASE: 38.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.156

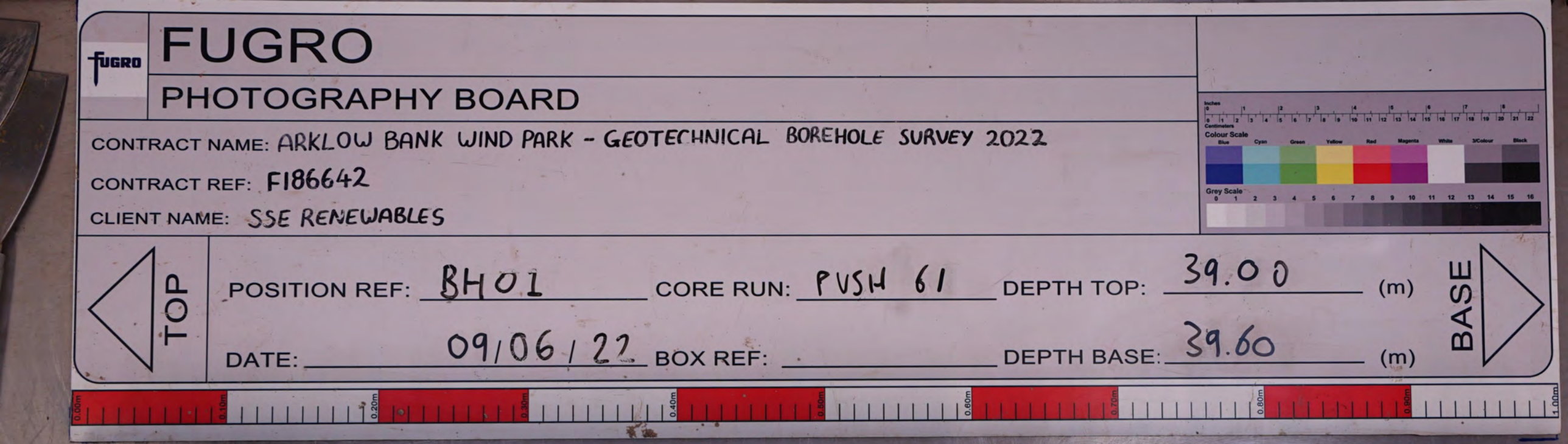
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 61
DEPTH TOP: 39.00 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 39.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.157

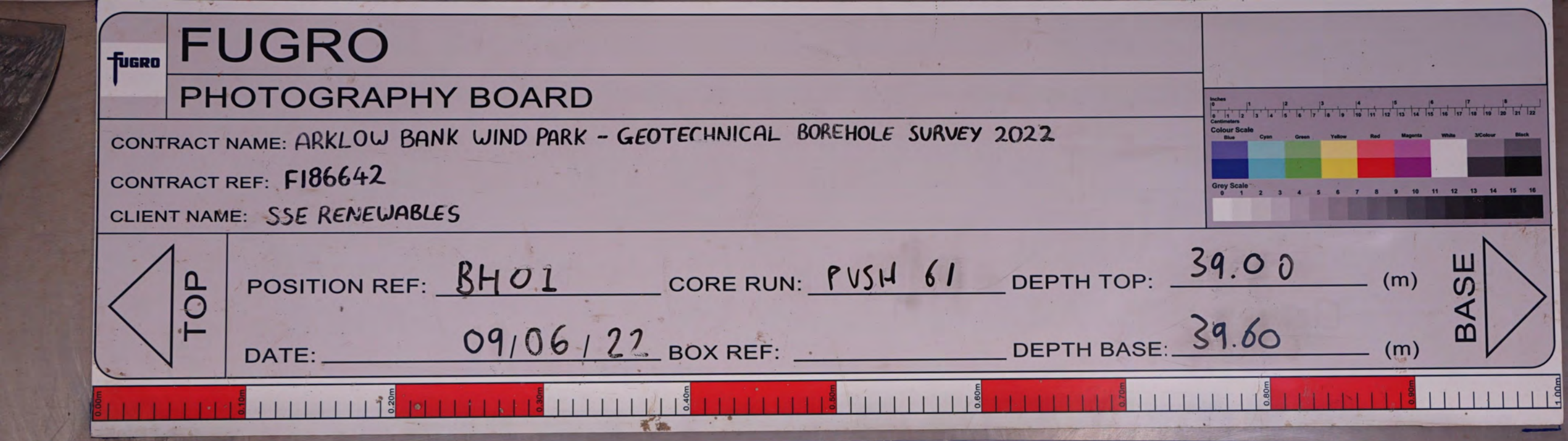
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 61
DEPTH TOP: 39.00 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 39.60 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.158

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 62 DEPTH TOP: 39.60 (m)

DATE: 09/06/22 BOX REF: DEPTH BASE: 39.70 (m)

BASE

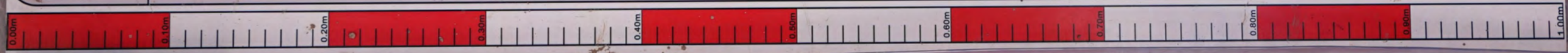


Plate 4.159

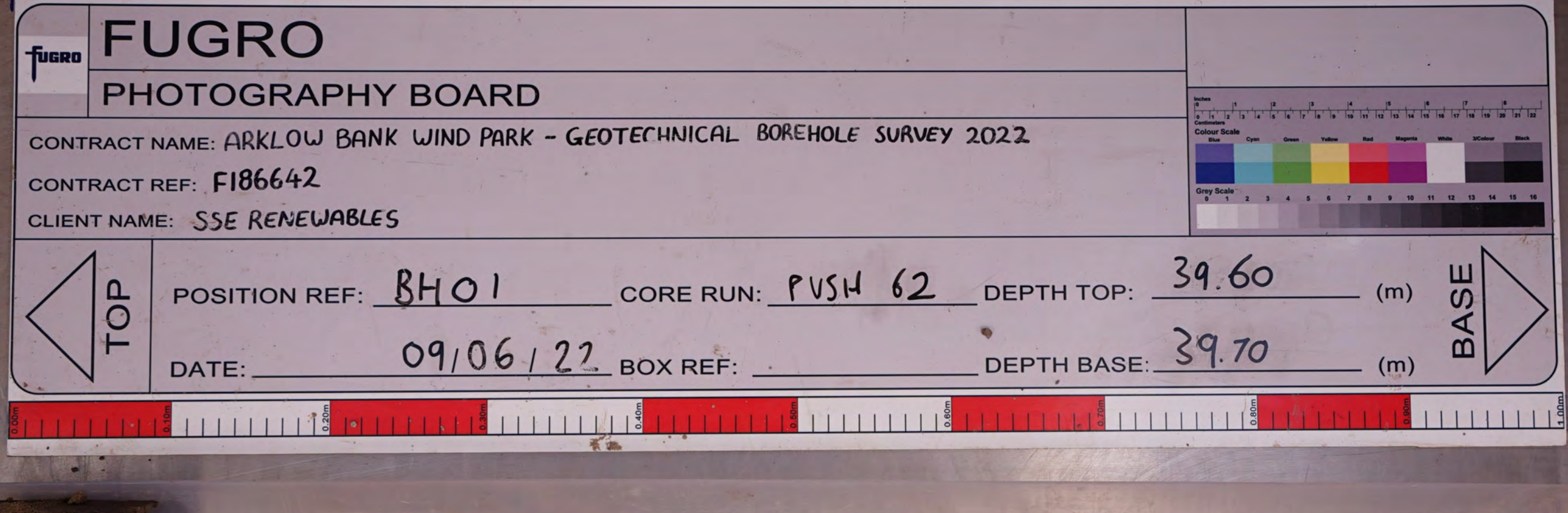

FUGRO
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 62
DEPTH TOP: 39.60 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 39.70 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.160

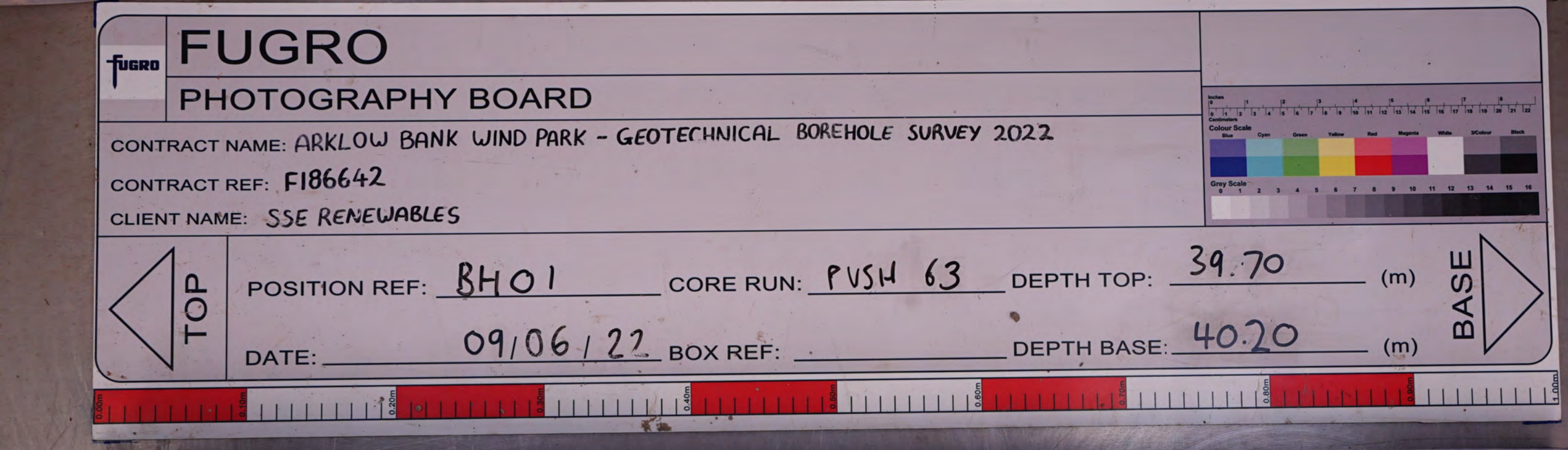

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 63
DEPTH TOP: 39.70 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 40.20 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.161

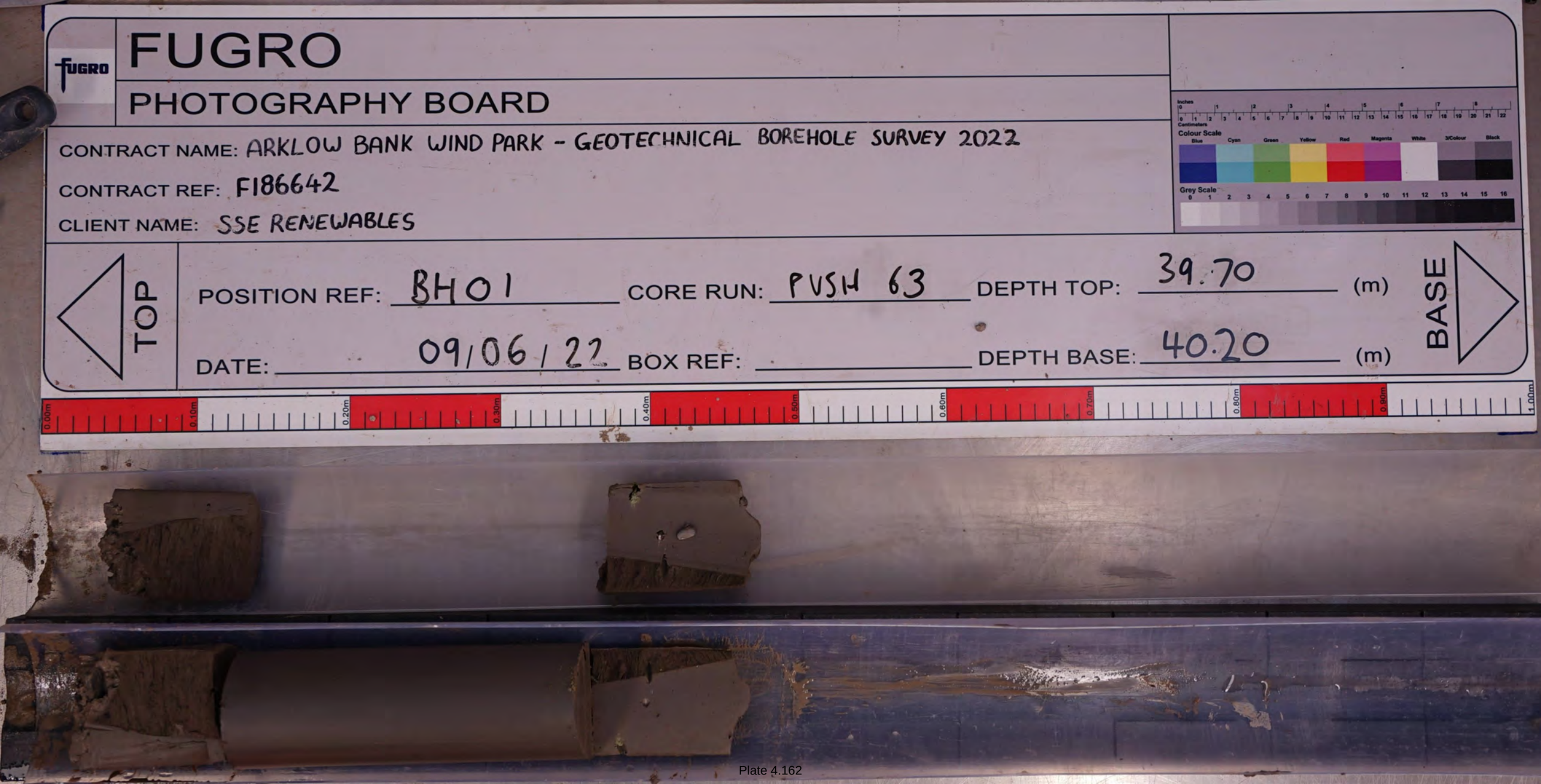

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 63
DEPTH TOP: 39.70 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 40.20 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.162

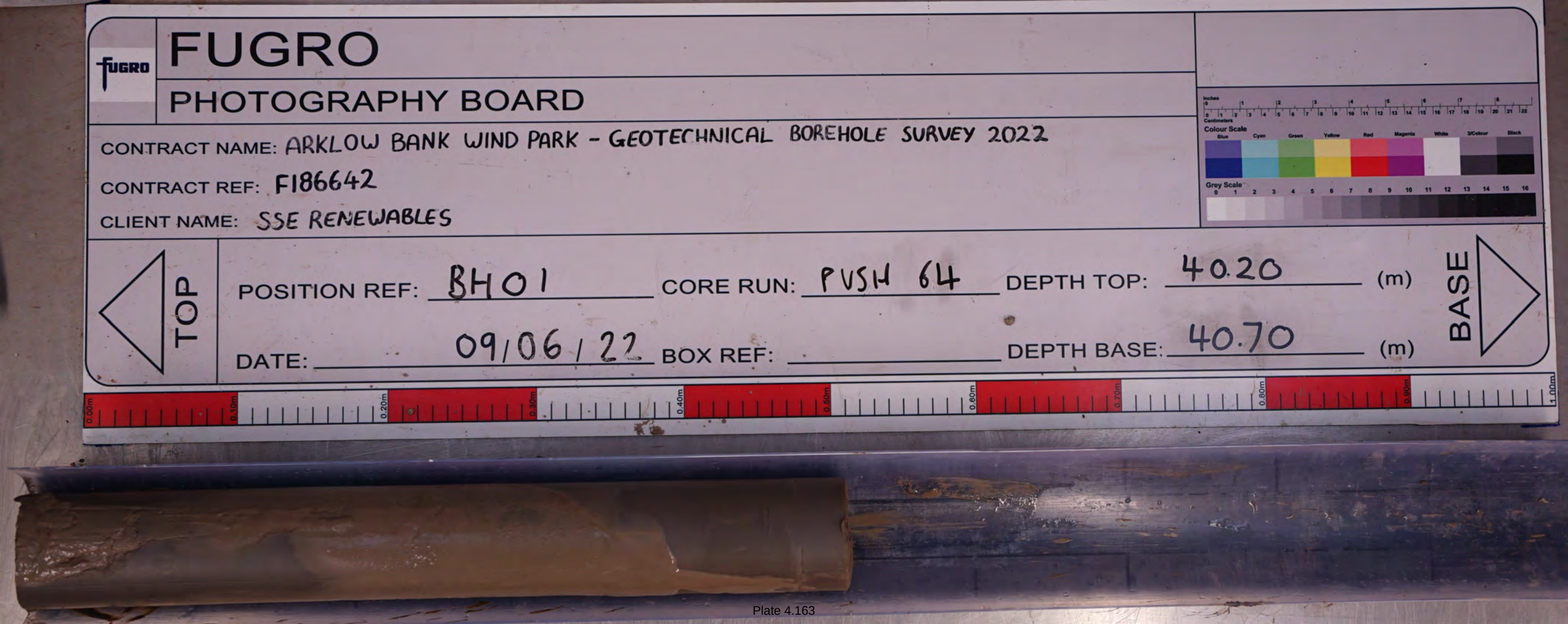
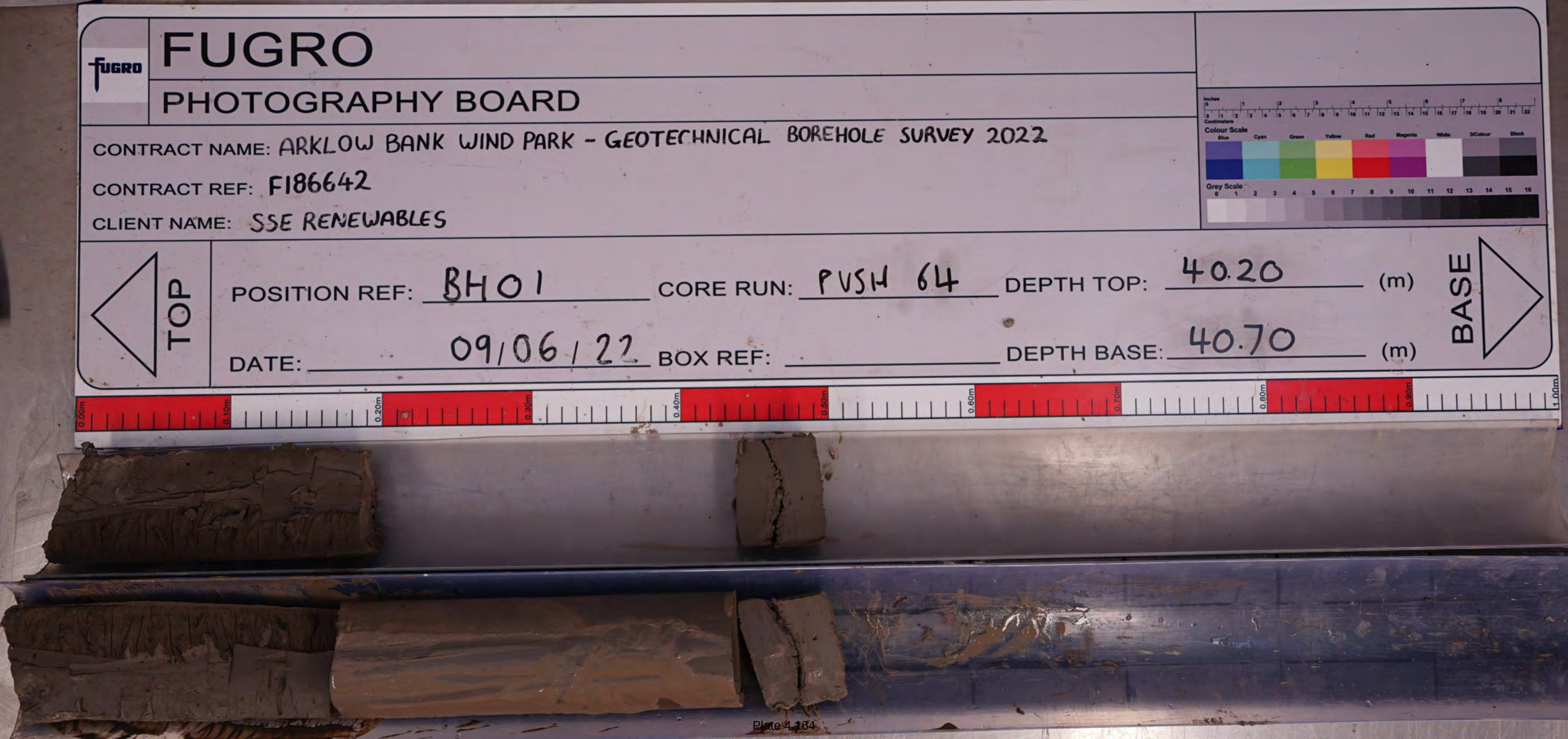

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 64
DEPTH TOP: 40.20 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 40.70 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.163


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 64
DEPTH TOP: 40.20 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 40.70 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 65 DEPTH TOP: 40.70 (m)

DATE: 09/06/22 BOX REF: DEPTH BASE: 41.50 (m)

BASE





Plate 4.165

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: PUSH 65 DEPTH TOP: 40.70 (m)

DATE: 09/06/22 BOX REF: DEPTH BASE: 41.50 (m)

BASE



Plate 4.166

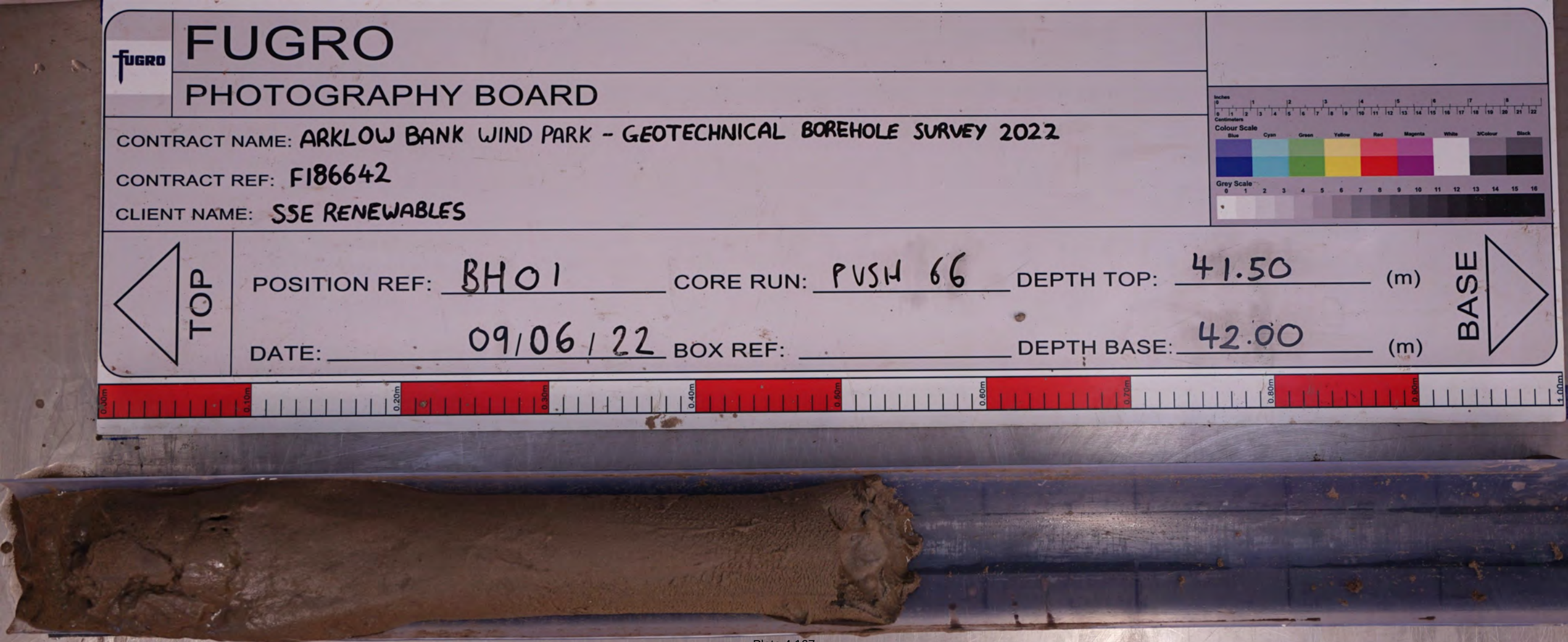

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 66
DEPTH TOP: 41.50 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 42.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.167

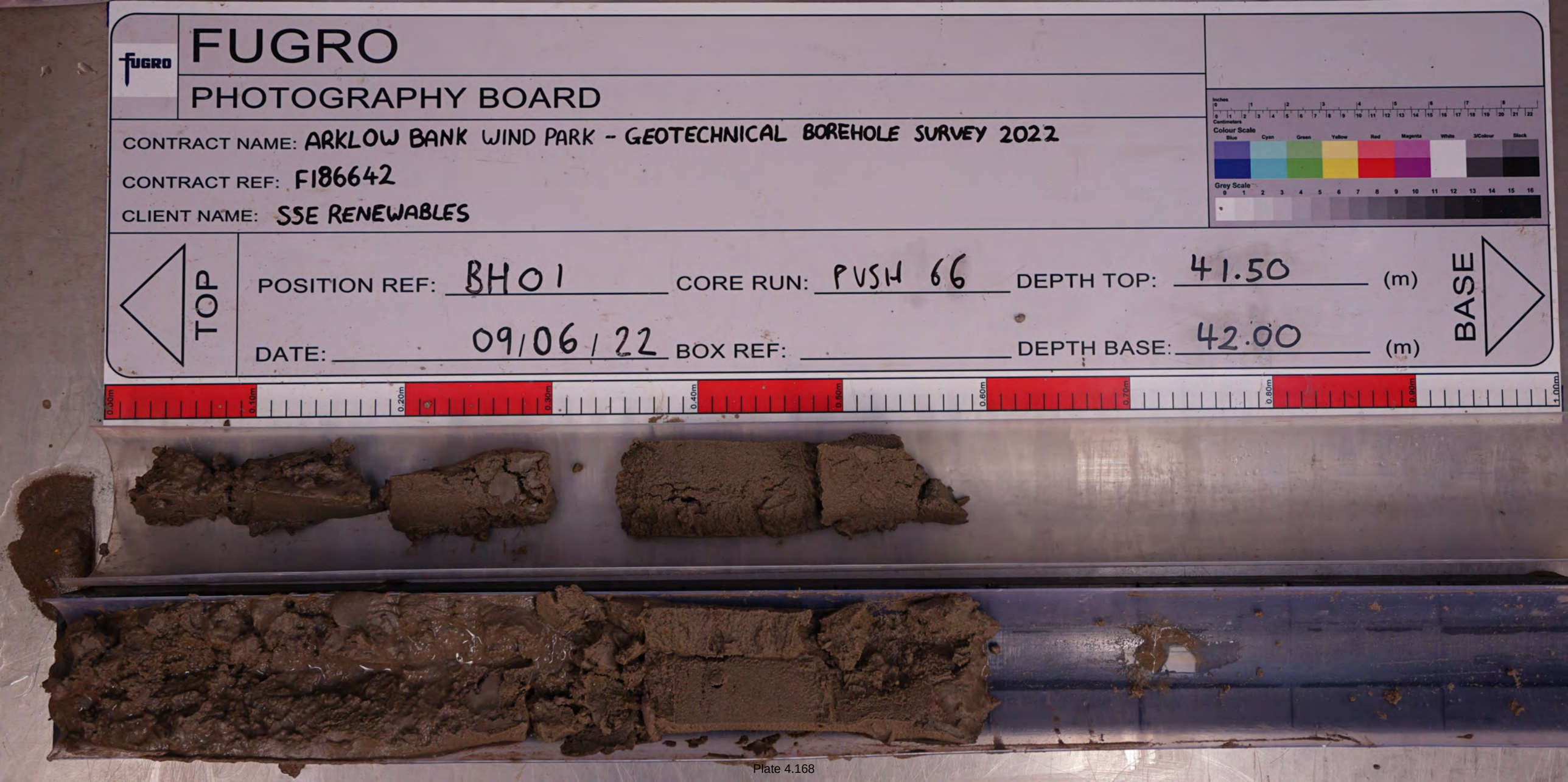
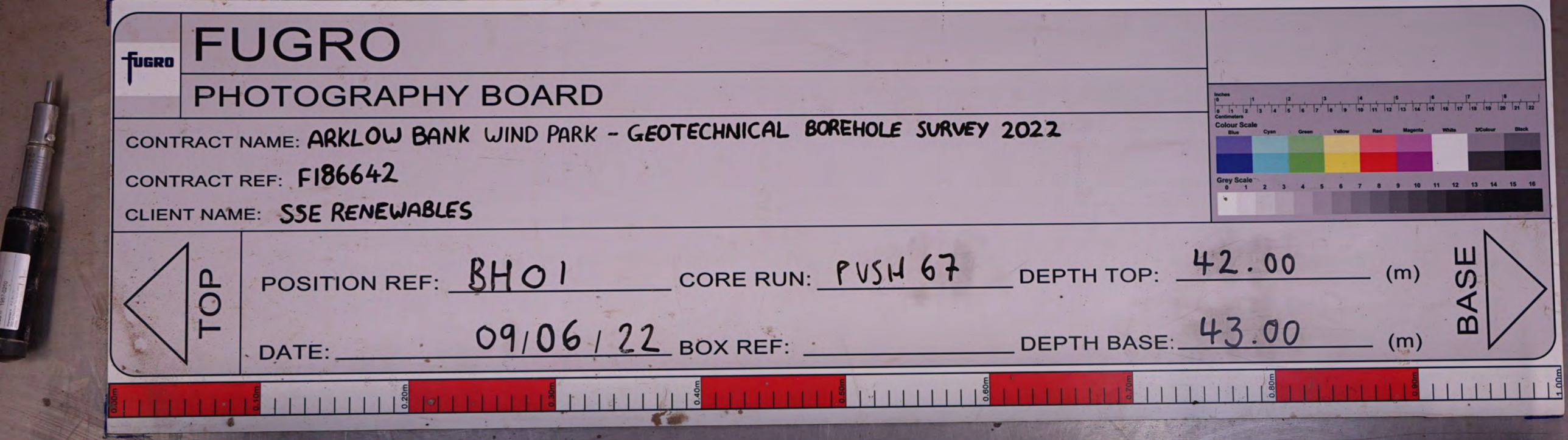

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 66
DEPTH TOP: 41.50 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 42.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.168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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 67
DEPTH TOP: 42.00 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 43.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.169


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: PUSH 67
DEPTH TOP: 42.00 (m)
DATE: 09/06/22
BOX REF:
DEPTH BASE: 43.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.170

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

CORE RUN: CR6

DEPTH TOP: 43.50 (m)

DATE: 08/06/22

BOX REF: 6

DEPTH BASE: 44.50 (m)

BASE

T 43.50 CR6 T



Plate 4.171

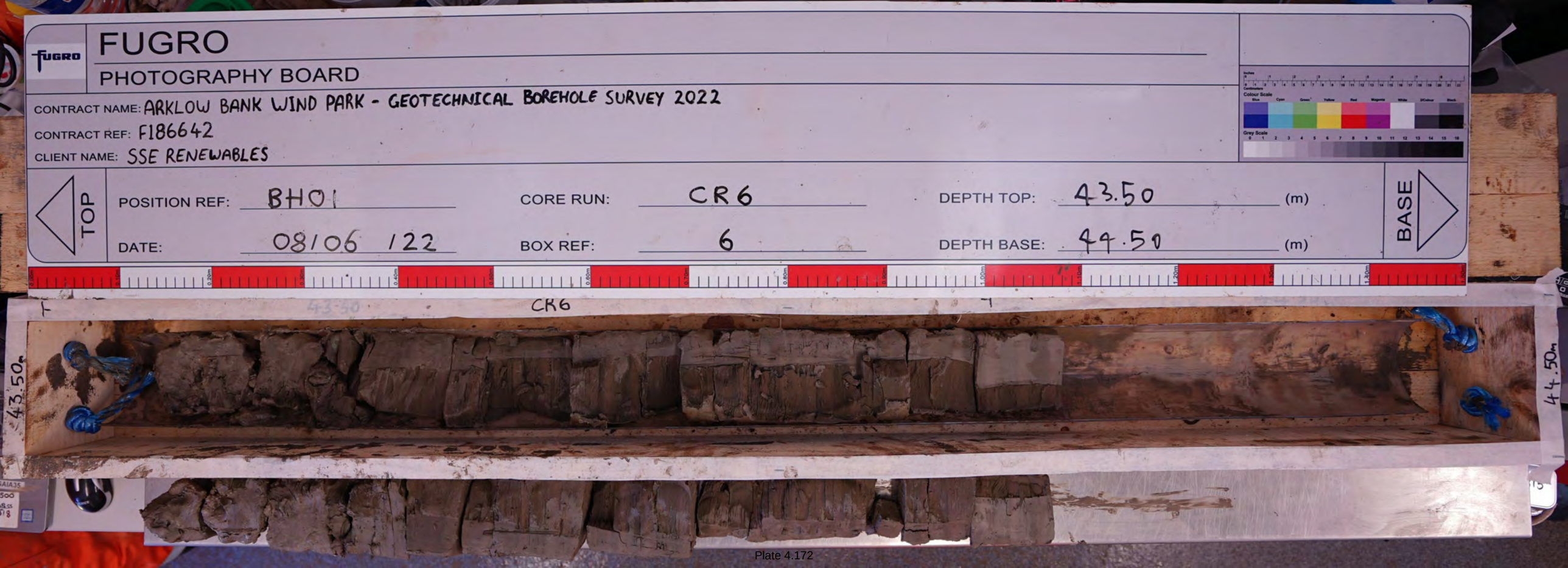
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR6
DEPTH TOP: 43.50 (m)
DATE: 08/06/22
BOX REF: 6
DEPTH BASE: 44.50 (m)
BASE
43.50
CR6
43.50m
44.50m

Plate 4.172

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR7

BOX REF: 7

DEPTH TOP: 44.50 (m)

DEPTH BASE: 45.50 (m)

BASE

44.50m CR7

44.50m

45.50m

Plate 4.173

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: CR7 DEPTH TOP: 44.50 (m)

DATE: 09/06/22 BOX REF: 7 DEPTH BASE: 45.50 (m)

BASE

44.50m CR7 45.50m

44.50m

45.50m



Plate 4.174

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR08

BOX REF: 8

DEPTH TOP: 45.50 (m)

DEPTH BASE: 46.50 (m)

BASE

CR8

45.50m

46.50m

Plate 4.175


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR08
BOX REF: 8
DEPTH TOP: 45.50 (m)
DEPTH BASE: 46.50 (m)
BASE
45.50
CR8
45.50m
46.50m

Plate 4.176

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR9

BOX REF: 9

DEPTH TOP: 46.50 (m)

DEPTH BASE: 47.50 (m)

BASE

+ PICKED UP CORE 46.5 + 46.50m CR9 47.5 +



(46.35m)

47.50m

Plate 4.177


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR9
DEPTH TOP: 46.50 (m)
DATE: 09/06/22
BOX REF: 9
DEPTH BASE: 47.50 (m)
BASE
+ PICKED UP CORE
+ 46.50m
CR9
(46.35m)
47.50m

Plate 4.178

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

CORE RUN: CR 10

DEPTH TOP: 47.50 (m)

DATE: 09/06/22

BOX REF: 10

DEPTH BASE: 49.00 (m)

BASE

CR10

47.50m

49.00m

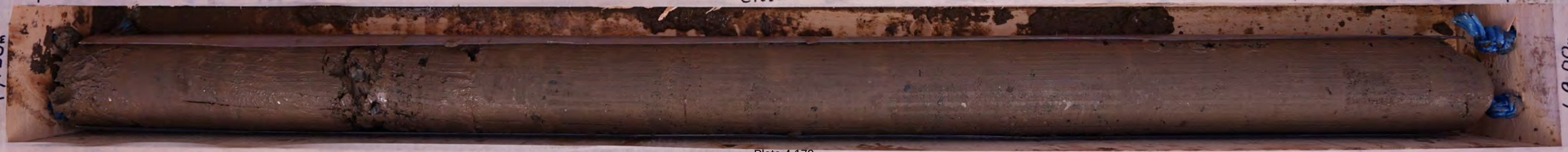

Plate 4.179


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR10
BOX REF: 10
DEPTH TOP: 47.50 (m)
DEPTH BASE: 49.00 (m)
BASE
CR10
47.50m
49.00m

Plate 4.180

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR11

BOX REF: 11

DEPTH TOP: 49.00 (m)

DEPTH BASE: 50.50 (m)

BASE



Plate 4.181


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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR11
BOX REF: 11
DEPTH TOP: 49.00 (m)
DEPTH BASE: 50.50 (m)
BASE
CRM
49.00m
50.50m

Plate 4.182

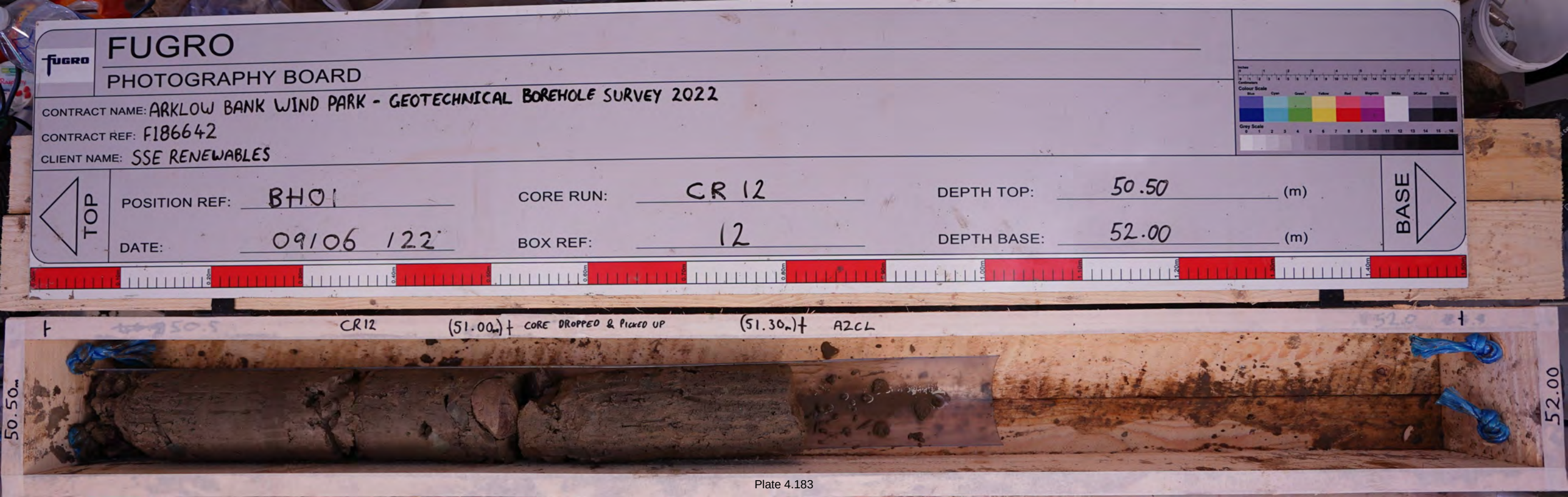
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR 12
BOX REF: 12
DEPTH TOP: 50.50 (m)
DEPTH BASE: 52.00 (m)
BASE
CR12 (51.00m)↑ CORE DROPPED & PICKED UP (51.30m)↑ A2CL
50.50m
52.00

Plate 4.183

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR 12

BOX REF: 12

DEPTH TOP: 50.50 (m)

DEPTH BASE: 52.00 (m)

BASE

CR12 (50.00m)↑ CORE DROPPED & PICKED UP (51.30m)↑ A2CL

50.50m

52.00

335

Plate 4.184

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR 13

BOX REF: 13

DEPTH TOP: 52.00 (m)

DEPTH BASE: 53.00 (m)

BASE

CR13

52.00m

53.00m

Plate 4.185


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR13
BOX REF: 13
DEPTH TOP: 52.00 (m)
DEPTH BASE: 53.00 (m)
BASE
CR13
52.00m
53.00m

Plate 4.186

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR14

BOX REF: 14

DEPTH TOP: 53.00 (m)

DEPTH BASE: 54.50 (m)

BASE



Plate 4.187


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR 14
BOX REF: 14
DEPTH TOP: 53.00 (m)
DEPTH BASE: 54.50 (m)
BASE
CR14
53.00m
54.50m

Plate 4.188

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR 15

BOX REF: 15

DEPTH TOP: 54.50 (m)

DEPTH BASE: 56.00 (m)

BASE

CR15

54.50m

56.00m

Plate 4.189


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR 15
BOX REF: 15
DEPTH TOP: 54.50 (m)
DEPTH BASE: 56.00 (m)
BASE
CR15
54.50m
56.00m

Plate 4.190

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR16

BOX REF: 16

DEPTH TOP: 56.00 (m)

DEPTH BASE: 57.50 (m)

BASE

CR17

(57.40m) + AZCL

56.00m

57.50m

Plate 4.191


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR16
BOX REF: 16
DEPTH TOP: 56.00 (m)
DEPTH BASE: 57.50 (m)
BASE
CR17
56.00m
57.50m

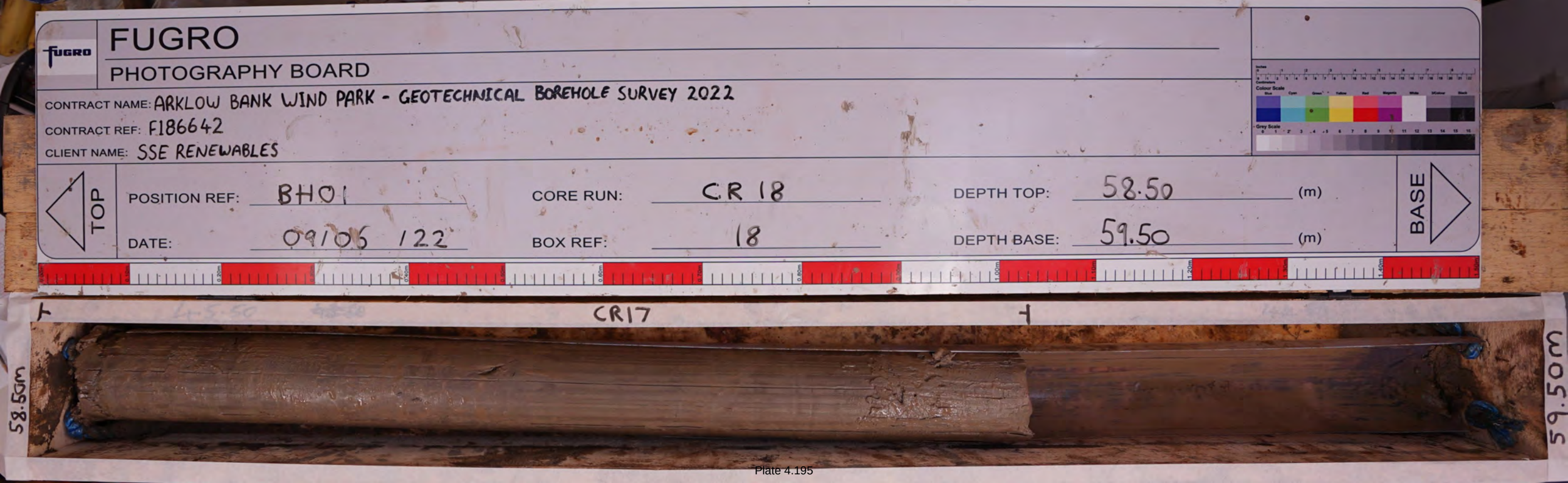
Plate 4.192


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR17
BOX REF: 17
DEPTH TOP: 57.50 (m)
DEPTH BASE: 58.50 (m)
BASE
CR17
57.50m
58.50m

Plate 4.193


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR 17
DEPTH TOP: 57.50 (m)
DATE: 09/06/22
BOX REF: 17
DEPTH BASE: 58.50 (m)
BASE
CR17
57.50m
58.50m

Plate 4.194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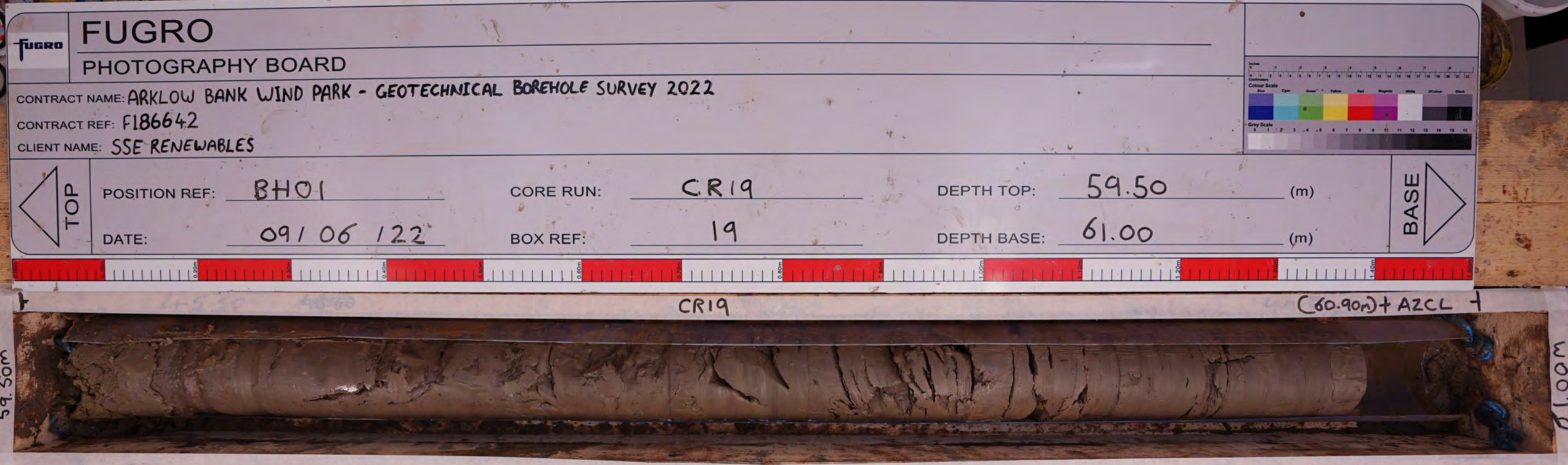
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR 18
DEPTH TOP: 58.50 (m)
DATE: 09/06/22
BOX REF: 18
DEPTH BASE: 59.50 (m)
BASE
CR17
58.5cm
59.50m

Plate 4.195


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR 18
BOX REF: 18
DEPTH TOP: 58.50 (m)
DEPTH BASE: 59.50 (m)
BASE
CR17
58.50m
59.50m

Plate 4.196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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR19
DEPTH TOP: 59.50 (m)
DATE: 09/06/22
BOX REF: 19
DEPTH BASE: 61.00 (m)
BASE
CR19
(60.90m) + AZCL
59.50m
61.00m

Plate 4.197

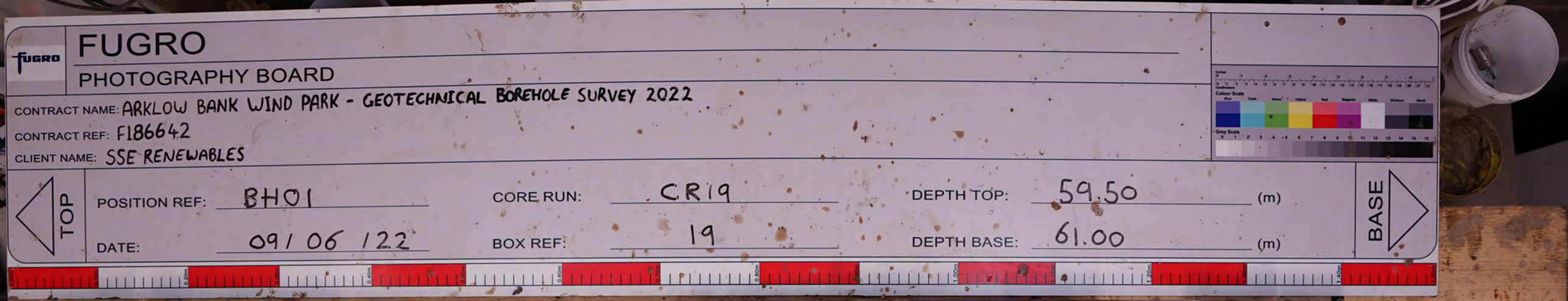
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 09/06/22
CORE RUN: CR19
BOX REF: 19
DEPTH TOP: 59.50 (m)
DEPTH BASE: 61.00 (m)
BASE
CR19
(60.90m) + AZCL
59.50m
61.00

Plate 4.198

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR20

BOX REF: 20

DEPTH TOP: 61.00 (m)

DEPTH BASE: 62.50 (m)

BASE

CR20

61.00m

62.50m

Plate 4.199


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR20
DEPTH TOP: 61.00 (m)
DATE: 09/06/22
BOX REF: 20
DEPTH BASE: 62.50 (m)
BASE
61.00m
62.50m

Plate 4.200

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 09/06/22

CORE RUN: CR21

BOX REF: 21

DEPTH TOP: 62.50 (m)

DEPTH BASE: 64.00 (m)

BASE

CR21

62.50m

64.00m

Plate 4.201


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR21
DEPTH TOP: 62.50 (m)
DATE: 09/06/22
BOX REF: 21
DEPTH BASE: 64.00 (m)
BASE
CR21
62.50m
64.00m

Plate 4.202

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01 CORE RUN: CR22 DEPTH TOP: 64.00 (m)

DATE: 09/06/22 BOX REF: 22 DEPTH BASE: 65.50 (m)

BASE



Plate 4.203


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR22
DEPTH TOP: 64.00 (m)
DATE: 10/06/22
BOX REF: 22
DEPTH BASE: 65.50 (m)
BASE
CR22
64.00m
65.50m

Plate 4.204

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 10/06/22

CORE RUN: CR23

BOX REF: 23

DEPTH TOP: 65.50 (m)

DEPTH BASE: 67.00 (m)

BASE



Plate 4.205


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR23
DEPTH TOP: 65.50 (m)
DATE: 10/06/22
BOX REF: 23
DEPTH BASE: 67.00 (m)
BASE
CR23
65.50m
67.00m

Plate 4.206

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 10/06/22

CORE RUN: CR24

BOX REF: 24

DEPTH TOP: 67.00 (m)

DEPTH BASE: 68.50 (m)

BASE

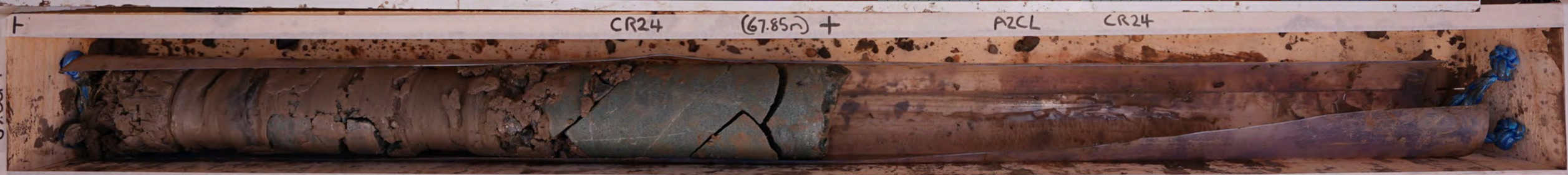

Plate 4.207


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 10/06/22
CORE RUN: CR24
BOX REF: 24
DEPTH TOP: 67.00 (m)
DEPTH BASE: 68.50 (m)
BASE
CR24 (67.85m) + A2CL CR24
67.00m
68.50m

Plate 4.208

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 10/06/22

CORE RUN: CR24/25

BOX REF: 25

DEPTH TOP: 67.85 (m)

DEPTH BASE: 69.50 (m)

BASE




FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 16/06/22
CORE RUN: CR24/25
BOX REF: 25
DEPTH TOP: 67.85 (m)
DEPTH BASE: 69.50 (m)
BASE
CR24
68.50m
CR25
(68.65m)
CR25
AZCL
(67.85m)
69.50m
0.65m of CR24 picked up in CR25

Plate 4.210

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 10/06/22

CORE RUN: CR25/26

BOX REF: 26

DEPTH TOP: 68.65 (m)

DEPTH BASE: 70.15 (m)

BASE




FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 10/06/22
CORE RUN: CR25/26
BOX REF: 26
DEPTH TOP: 68.65 (m)
DEPTH BASE: 70.15 (m)
BASE
CR25
69.50m
CR26
(10.15m)
(68.65m)
(70.15m)
(0.85m) of CR25 Picked up in CR26

Plate 4.212

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

CORE RUN: CR26/27

DEPTH TOP: 70.20 (m)

DATE: 10/06/22

BOX REF: 27

DEPTH BASE: 71.50 (m)

BASE

CR26 | 70.50m | CR27 | (71.40m) AZCL

70.20m

71.50m

0.30m of CR26 picked up in CR27

Plate 4.213


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR26/27
DEPTH TOP: 70.20 (m)
DATE: 10/06/22
BOX REF: 27
DEPTH BASE: 71.50 (m)
BASE
CR26
70.50m
CR27
(71.40m) AZCL
70.20m
71.50m
0.30m of CR26 picked up in CR27

Plate 4.214


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR28
DEPTH TOP: 71.50 (m)
DATE: 10/06/22
BOX REF: 28
DEPTH BASE: 72.15 (m)
BASE
CR28
+(72.15m)
71.50m
(72.15m)

Plate 4.215


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 10/06/22
CORE RUN: CR28
BOX REF: 28
DEPTH TOP: 71.50 (m)
DEPTH BASE: 72.15 (m)
BASE
CR28
+(72.15m)
71.50m
(72.15m)

Plate 4.216

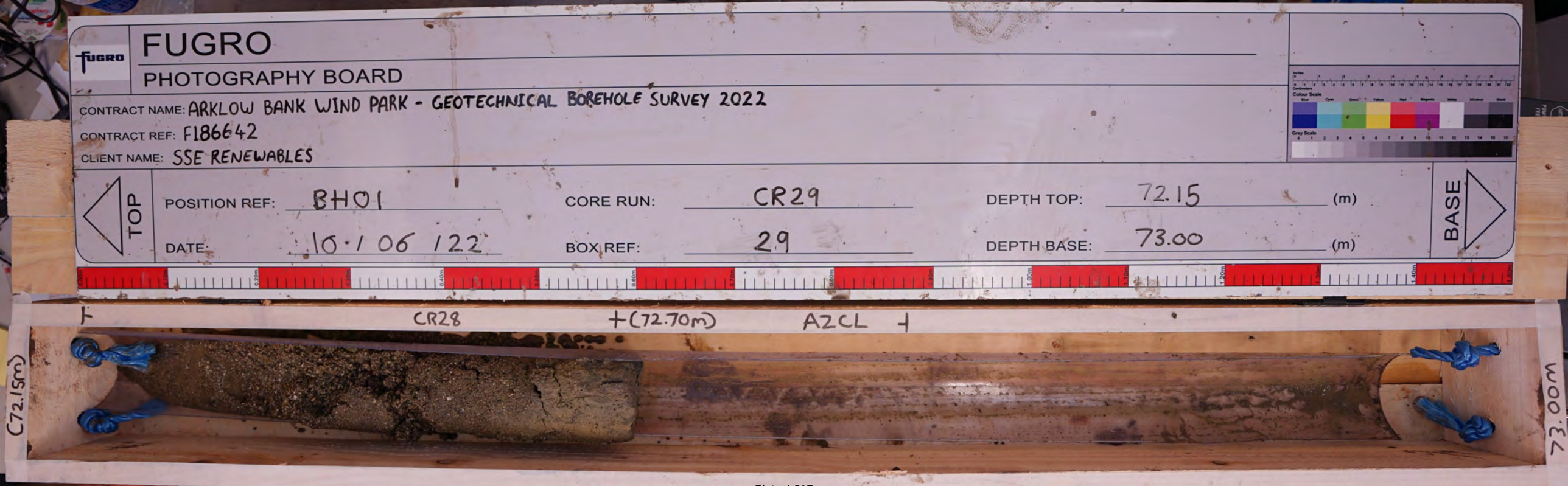

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR29
DEPTH TOP: 72.15 (m)
DATE: 10/06/22
BOX REF: 29
DEPTH BASE: 73.00 (m)
BASE
CR28
+(72.70m)
A2CL
(72.15m)
73.00m

Plate 4.217

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH01

DATE: 10/10/22

CORE RUN: CR30

BOX REF: 30

DEPTH TOP: 73.00 (m)

DEPTH BASE: 74.00 (m)

BASE



Plate 4.218

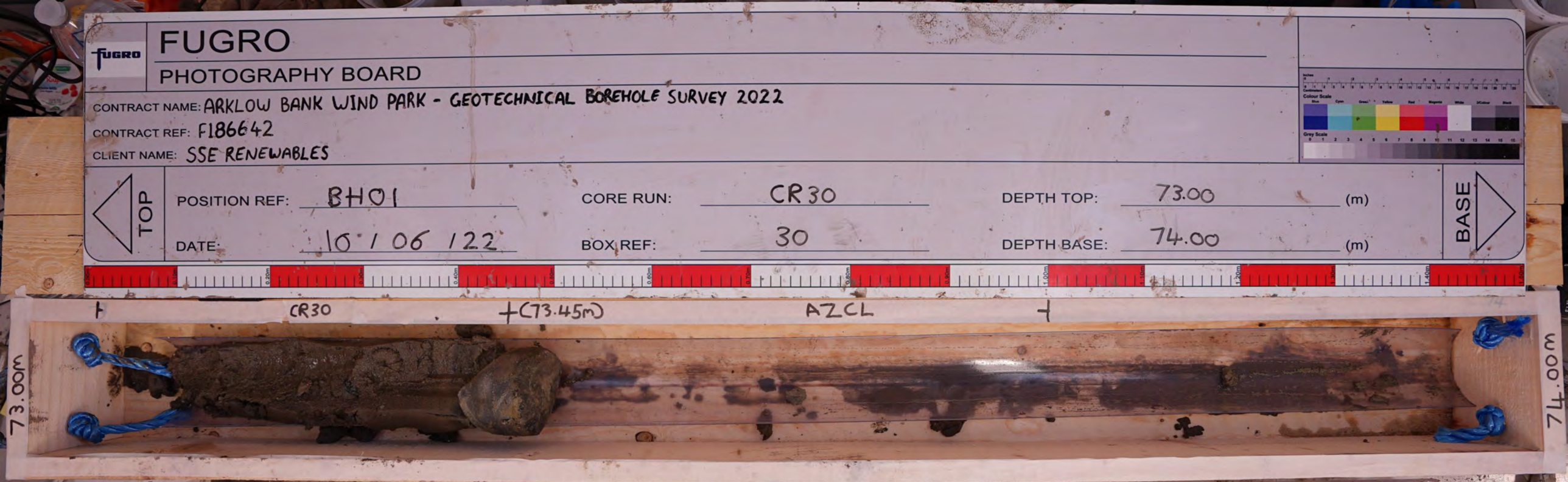

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 10/06/22
CORE RUN: CR30
BOX REF: 30
DEPTH TOP: 73.00 (m)
DEPTH BASE: 74.00 (m)
BASE
CR30
(73.45m)
AZCL
73.00m
74.00m

Plate 4.219

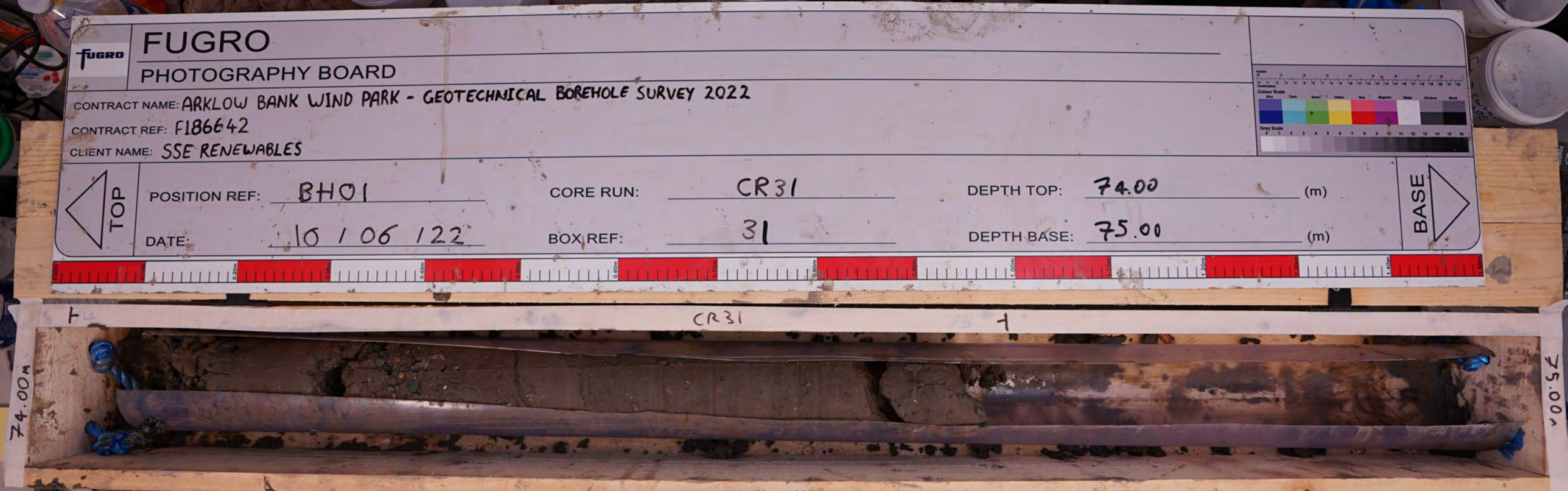

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
CORE RUN: CR31
DEPTH TOP: 74.00 (m)
DATE: 10/06/22
BOX REF: 31
DEPTH BASE: 75.00 (m)
BASE
CR31
74.00m
75.00m

Plate 4.220


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH01
DATE: 10/06/22
CORE RUN: CR31
BOX REF: 31
DEPTH TOP: 74.00 (m)
DEPTH BASE: 75.00 (m)
BASE
CR31
74.00m
75.00m

Plate 4.221

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: B1 DEPTH TOP: 0.00 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 0.50 (m)

BASE

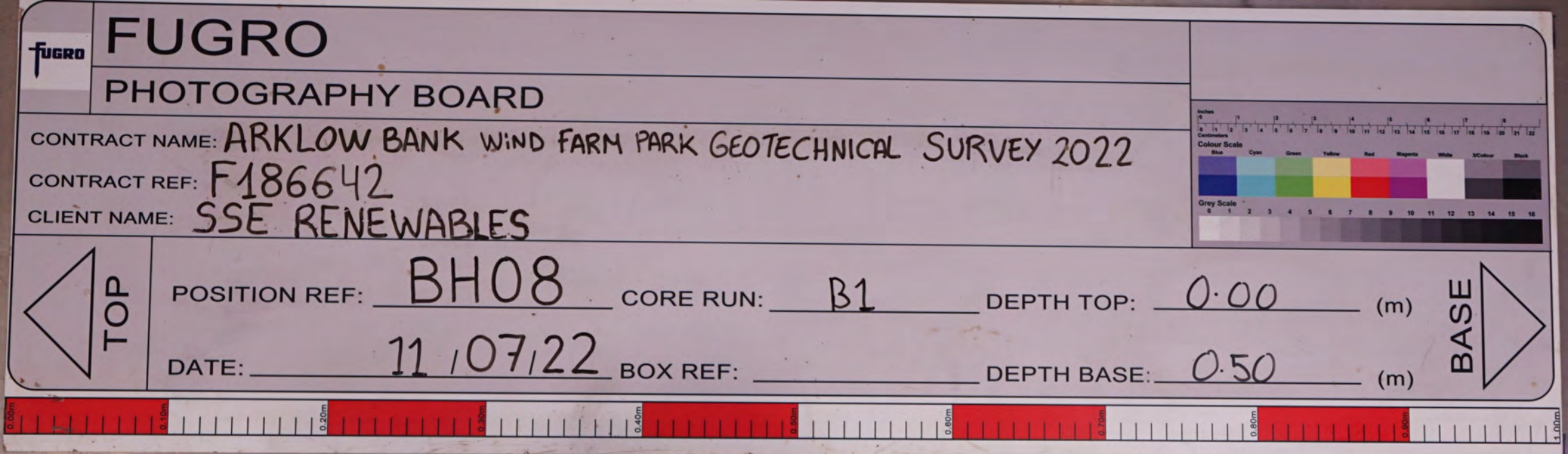


Plate 4.222

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: B2 DEPTH TOP: 0.50 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 1.00 (m)

BASE



Plate 4.223

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: B3 DEPTH TOP: 1.00 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 1.50 (m)

BASE



Plate 4.224


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: B 4
DEPTH TOP: 1·50 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 2·00 (m)
BASE

Plate 4.225

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: B5 DEPTH TOP: 2.00 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 2.50 (m)

BASE



Plate 4.226

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 6 DEPTH TOP: 2.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 3.80 (m)

BASE



Plate 4.227

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 6 DEPTH TOP: 2.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 3.80 (m)

BASE

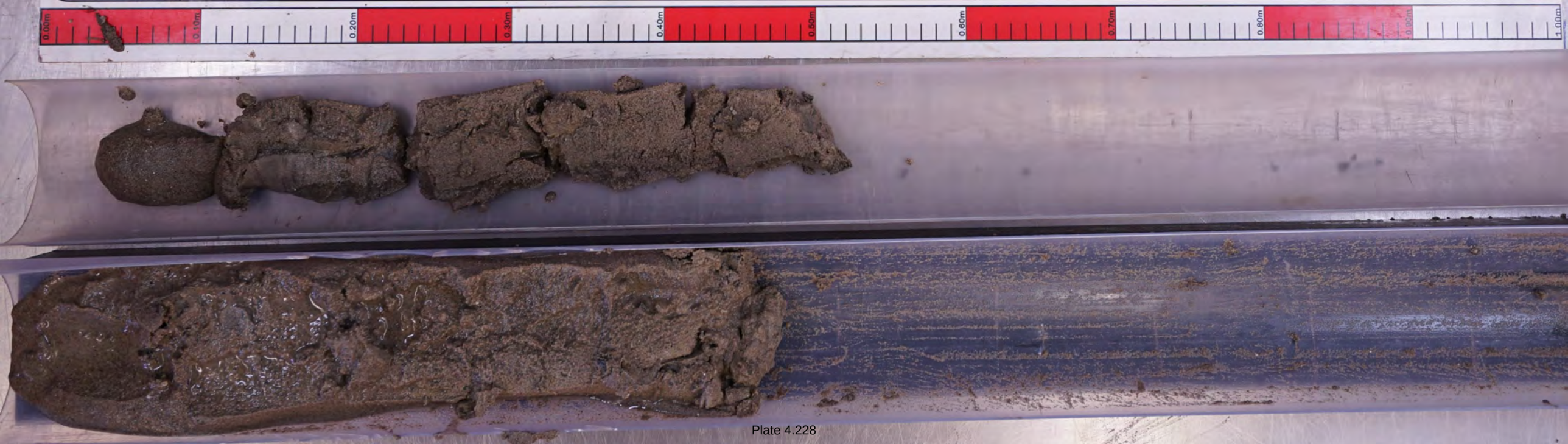


Plate 4.228

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 7 DEPTH TOP: 4.30 (m)

DATE: 11/07/22 BOX REF: _____ DEPTH BASE: 5.30 (m)

BASE





Plate 4.229

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 7 DEPTH TOP: 4.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 5.30 (m)

BASE



Plate 4.230

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 8 DEPTH TOP: 5.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 5.80 (m)

BASE



Plate 4.231

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 8 DEPTH TOP: 5.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 5.80 (m)

BASE



Plate 4.232

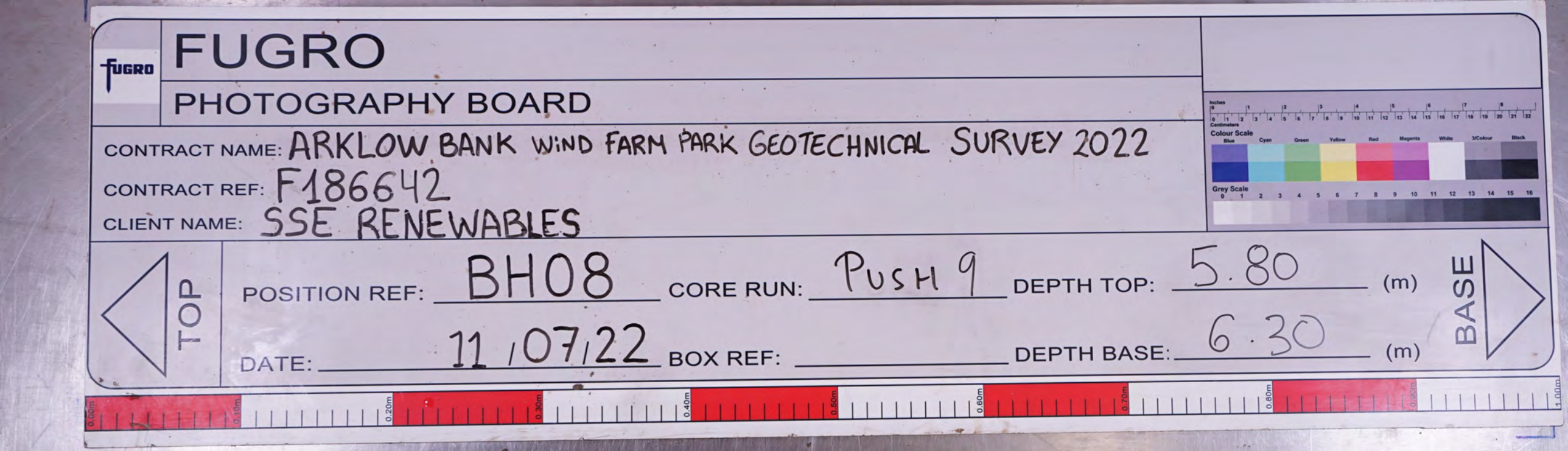

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 9
DEPTH TOP: 5.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 6.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.233

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 9 DEPTH TOP: 5.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 6.30 (m)

BASE



Plate 4.234

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 10 DEPTH TOP: 6.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 7.80 (m)

BASE



Plate 4.235

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 10 DEPTH TOP: 6.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 7.80 (m)

BASE



Plate 4.236

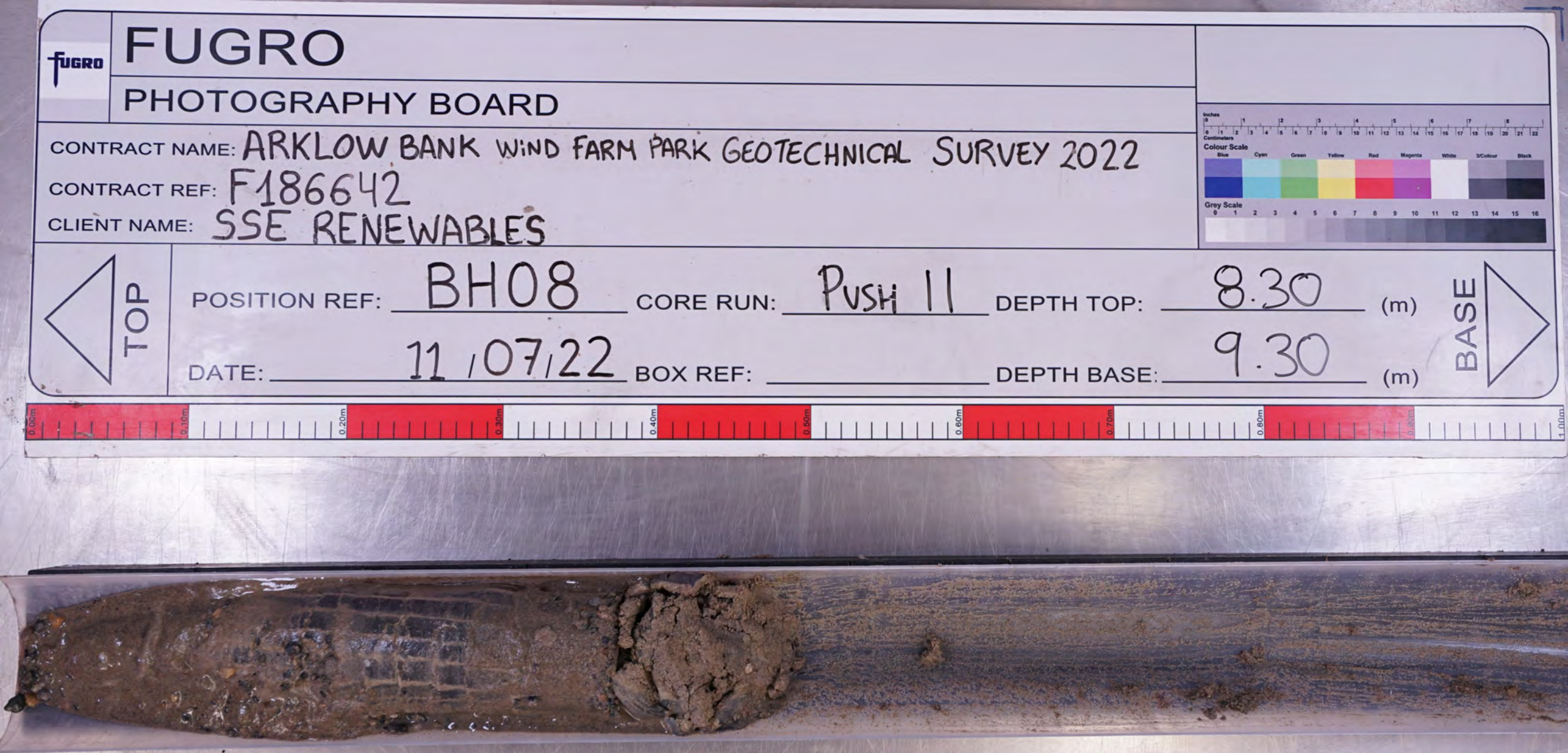

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 11
DEPTH TOP: 8.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 9.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.237

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 11 DEPTH TOP: 8.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 9.30 (m)

BASE



Plate 4.238

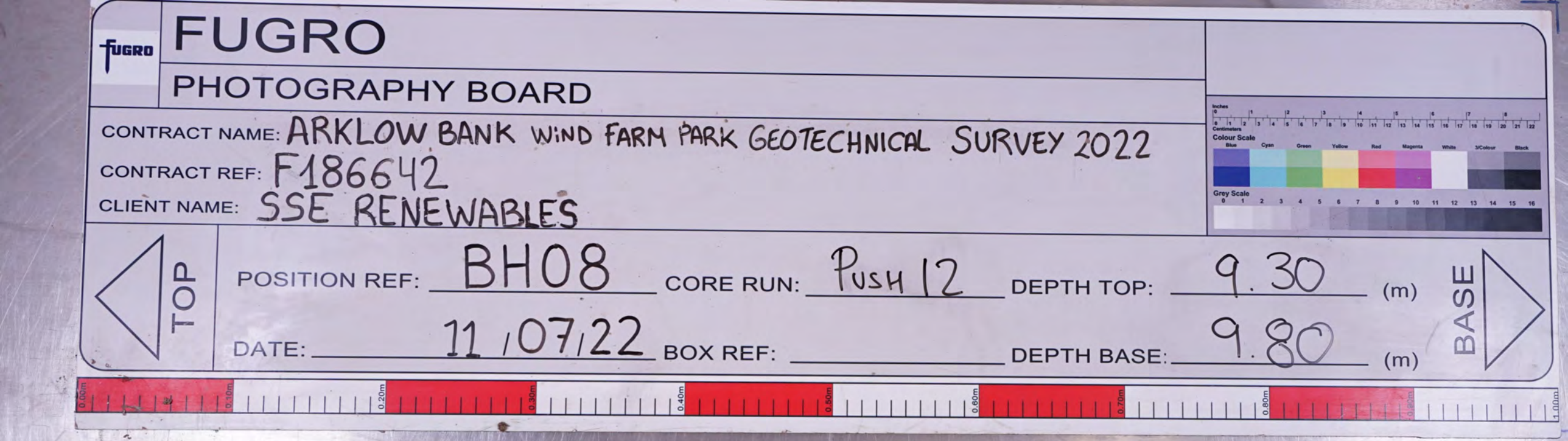

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 12
DEPTH TOP: 9.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 9.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.92m
1.00m

Plate 4.239

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 12 DEPTH TOP: 9.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 9.80 (m)

BASE



Plate 4.240

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 13 DEPTH TOP: 9.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 10.30 (m)

BASE

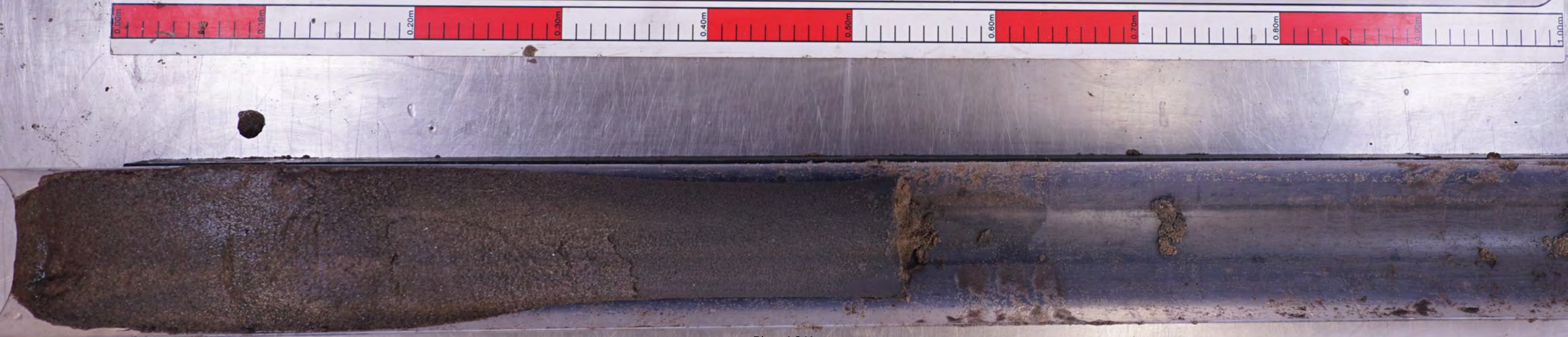


Plate 4.241

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 13 DEPTH TOP: 9.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 10.30 (m)

BASE



Plate 4.242

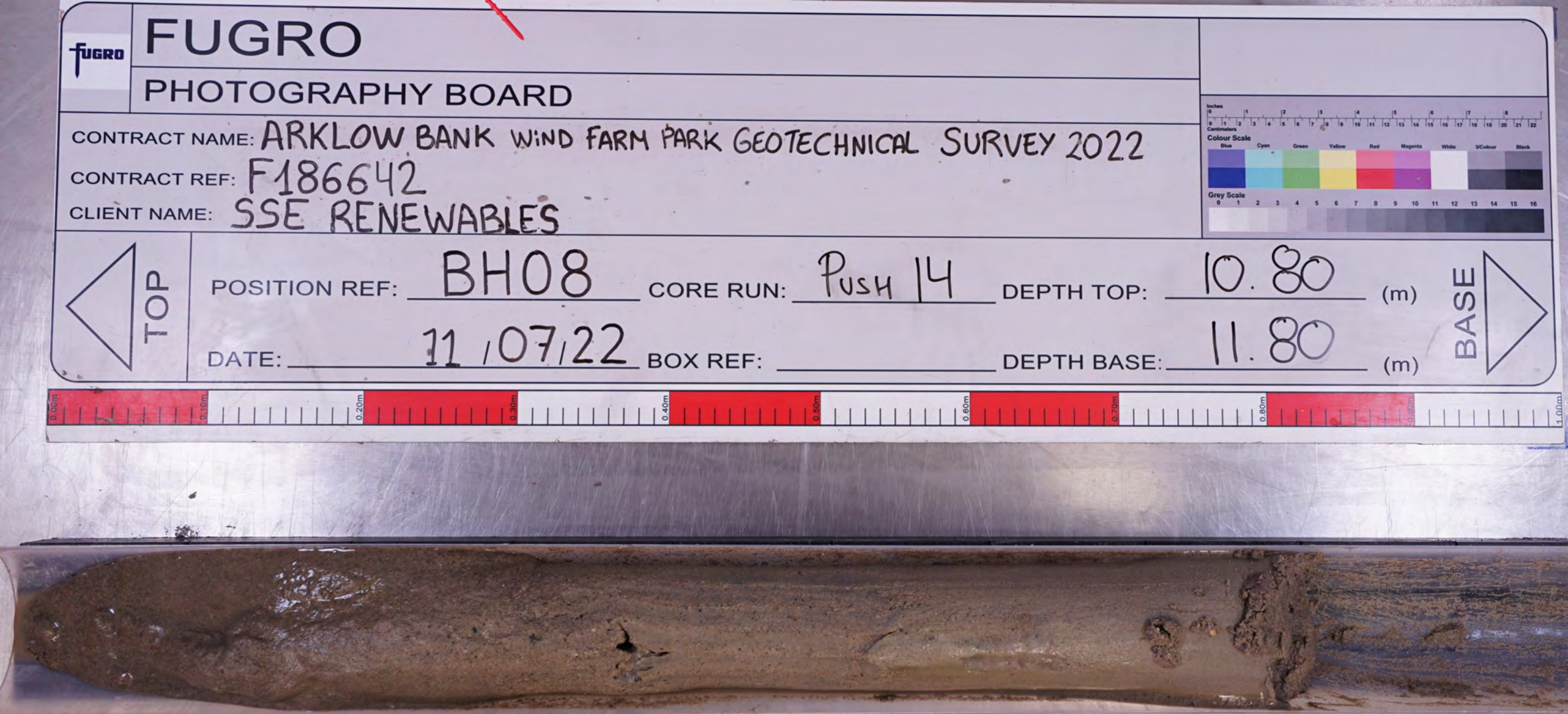

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 14
DEPTH TOP: 10.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 11.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.243

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 14 DEPTH TOP: 10.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 11.80 (m)

BASE



Plate 4.244

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 15 DEPTH TOP: 12.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 13.30 (m)

BASE

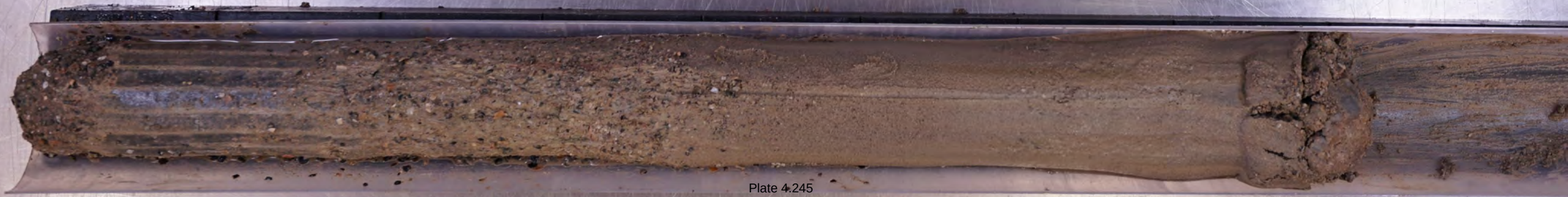


Plate 4.245

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 15 DEPTH TOP: 12.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 13.30 (m)

BASE



Plate 4.246

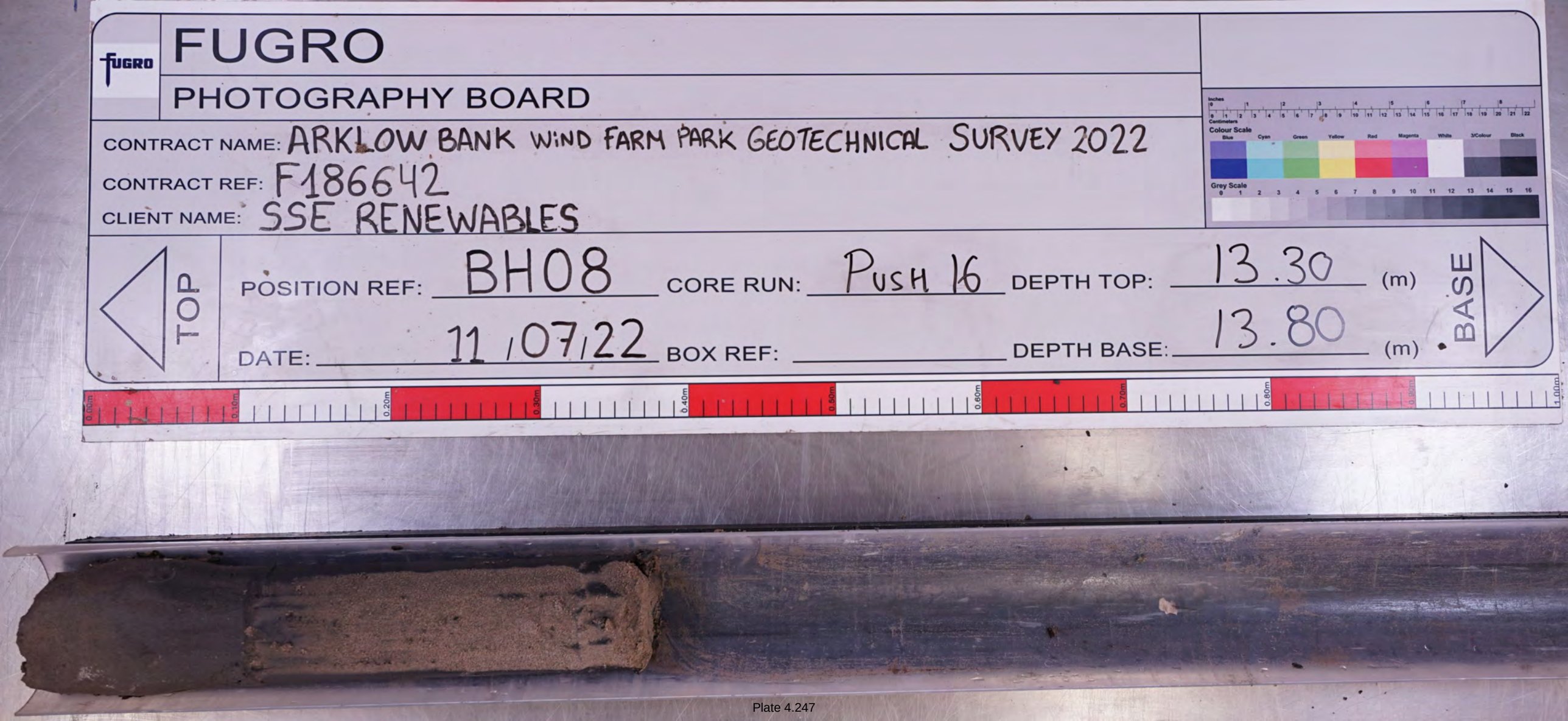

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 16
DEPTH TOP: 13.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 13.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
1.00m

Plate 4.247

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 16 DEPTH TOP: 13.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 13.80 (m)

BASE

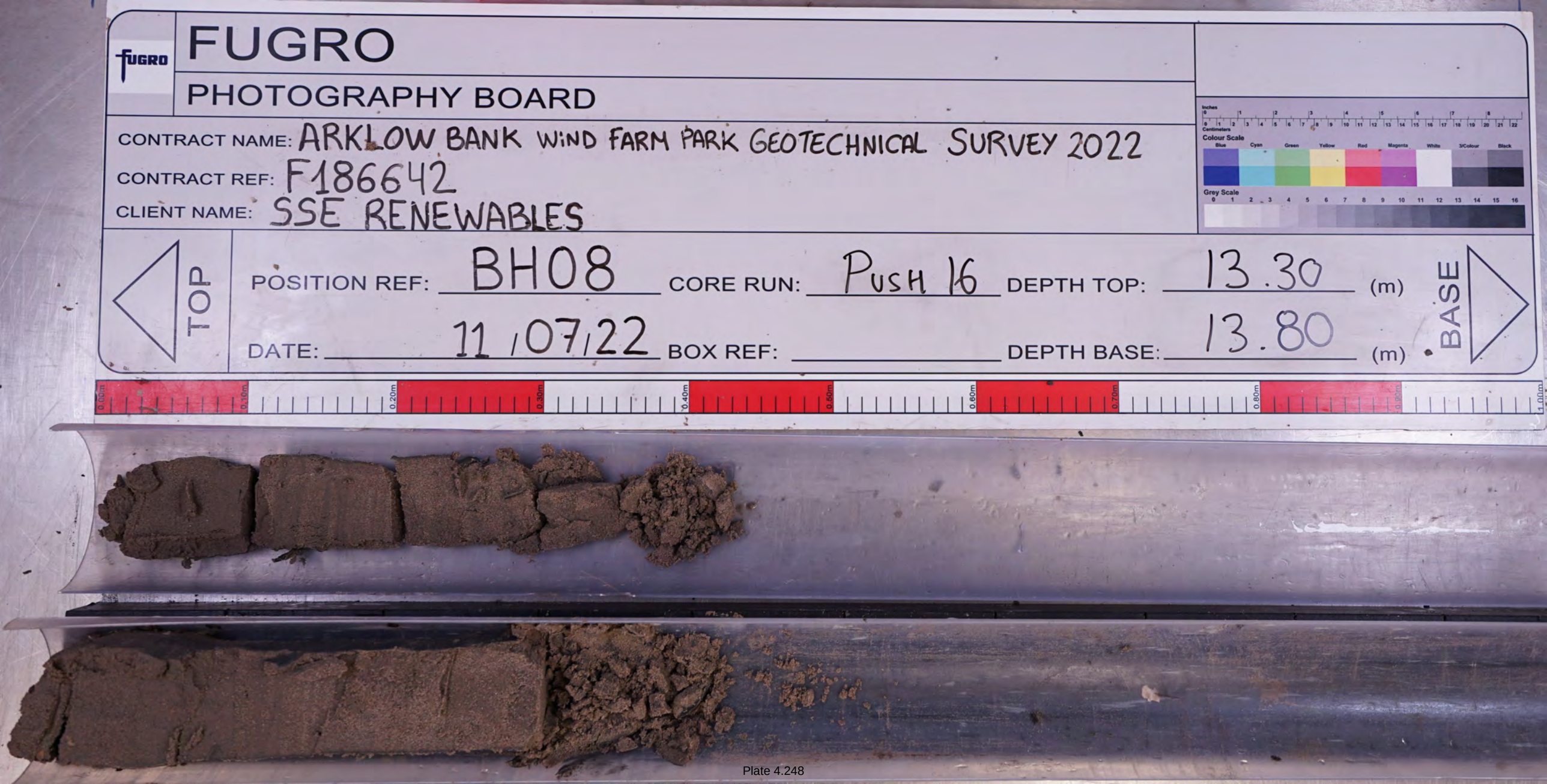


Plate 4.248

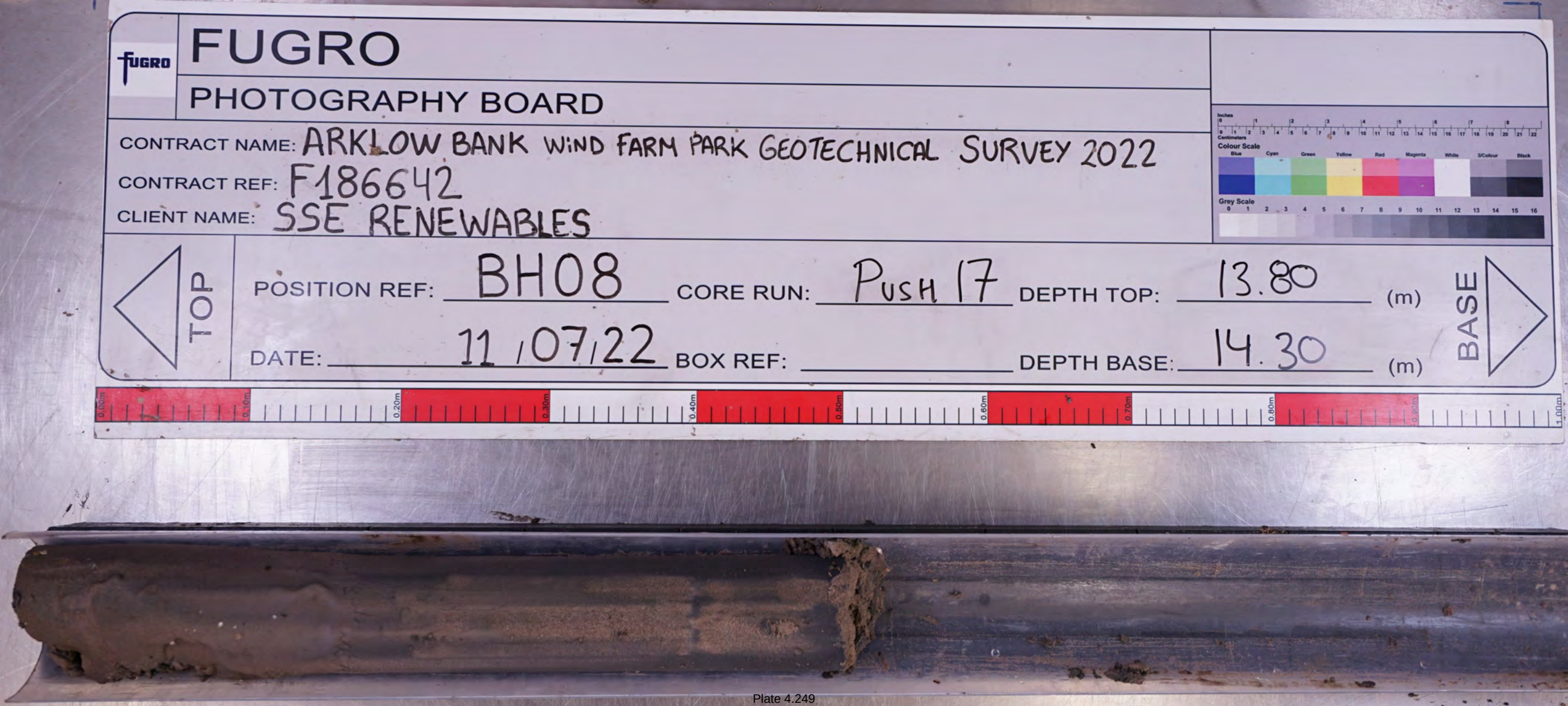

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 17
DEPTH TOP: 13.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 14.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.249

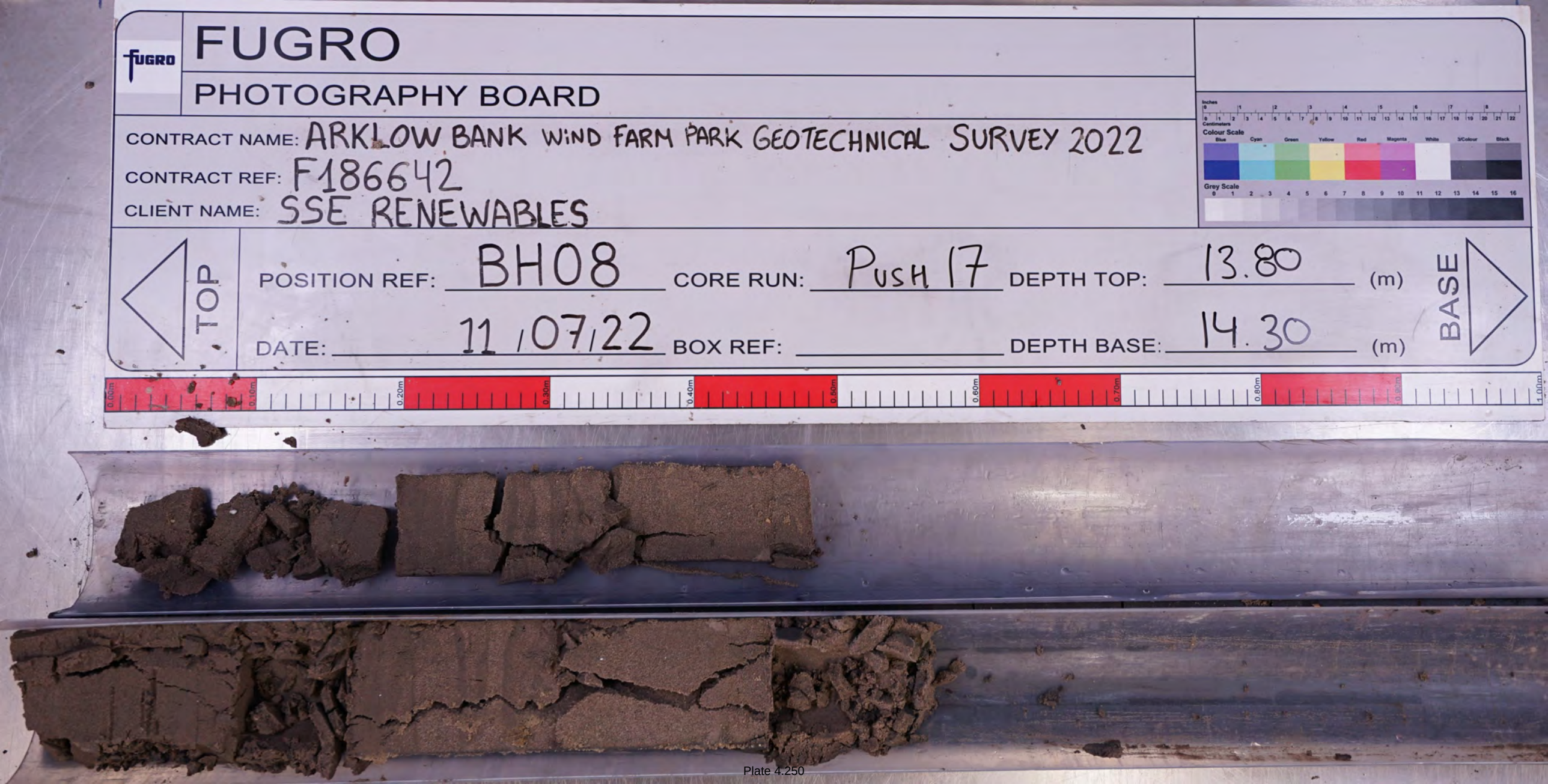

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 17
DEPTH TOP: 13.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 14.30 (m)
BASE

Plate 4.250

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 18 DEPTH TOP: 14.80 (m)

DATE: 11/07/22 BOX REF: _____ DEPTH BASE: 15.80 (m)

BASE



Plate 4.251

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 18 DEPTH TOP: 14.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 15.80 (m)

BASE



Plate 4.252

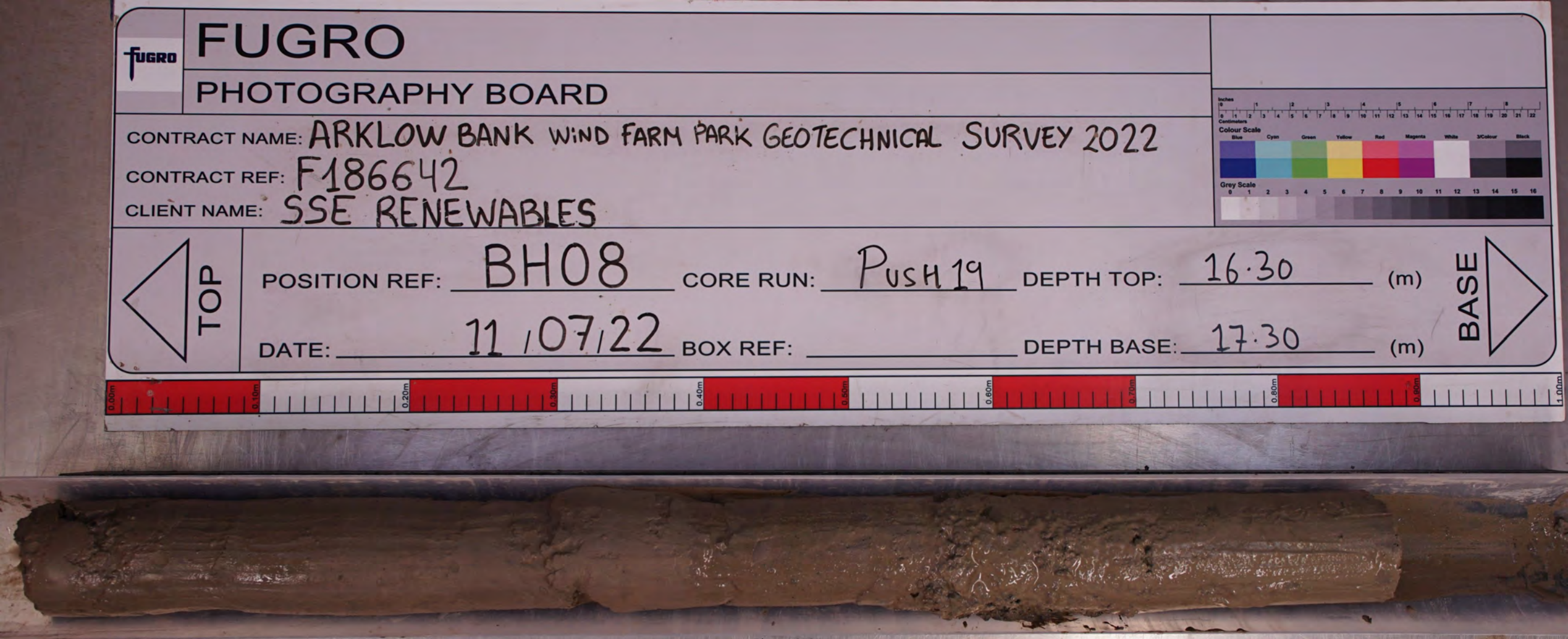

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 19
DEPTH TOP: 16.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 17.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.253

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 19 DEPTH TOP: 16.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 17.30 (m)

BASE



Plate 4.254

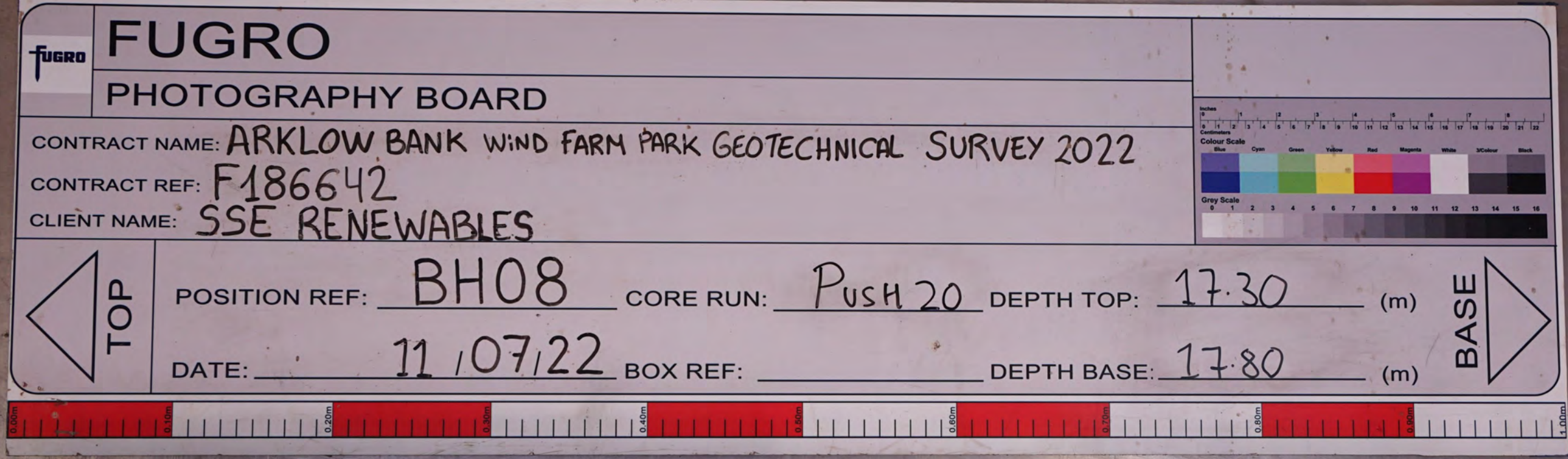

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 20
DEPTH TOP: 17.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 17.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.255

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 20 DEPTH TOP: 17.30 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 17.80 (m)

BASE

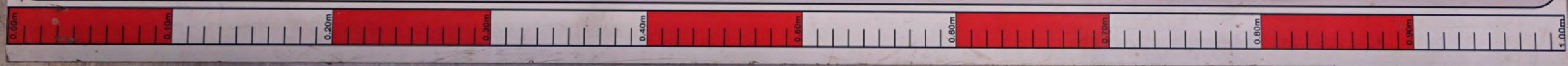




Plate 4.256

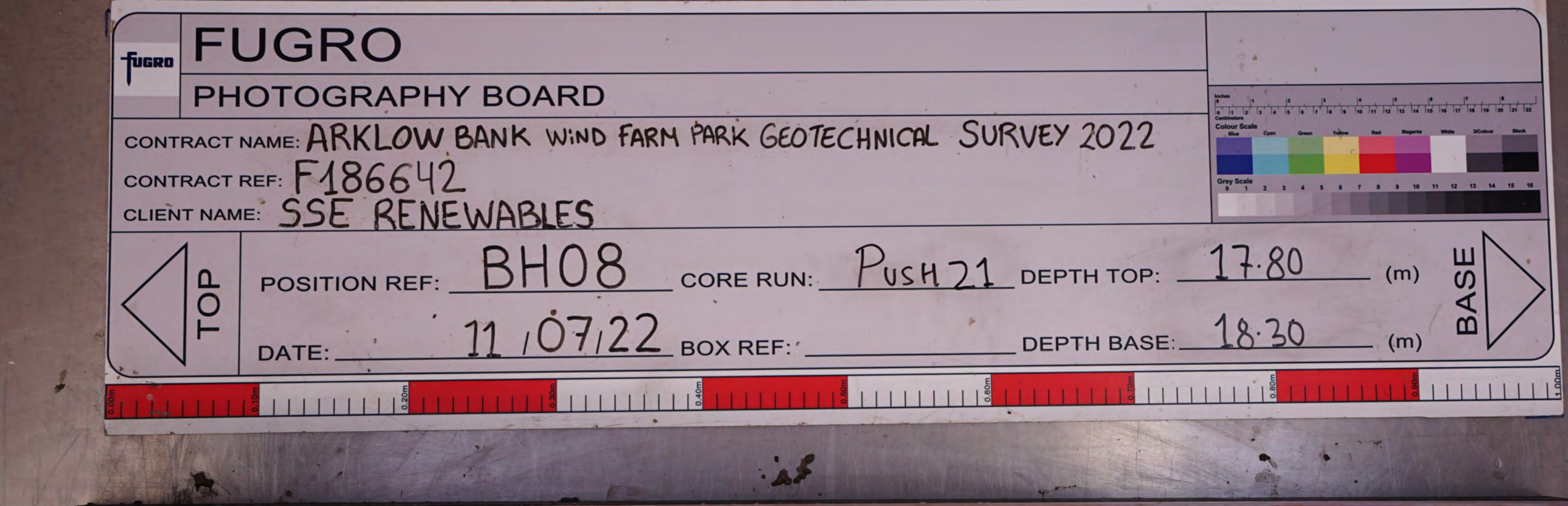

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 21
DEPTH TOP: 17.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 18.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.257

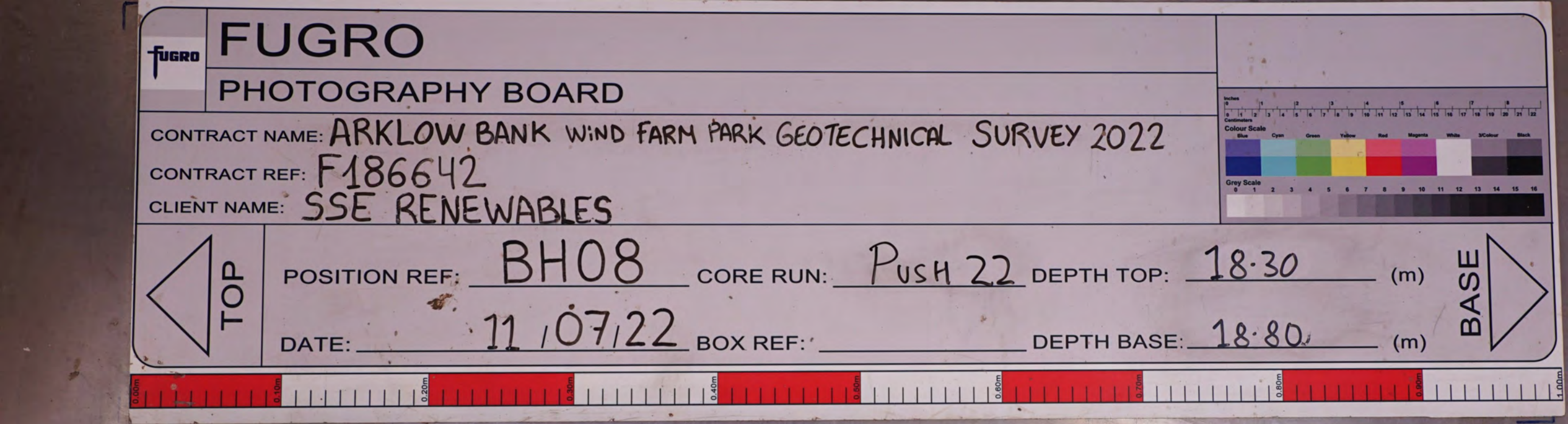

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 22
DEPTH TOP: 18.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 18.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.258

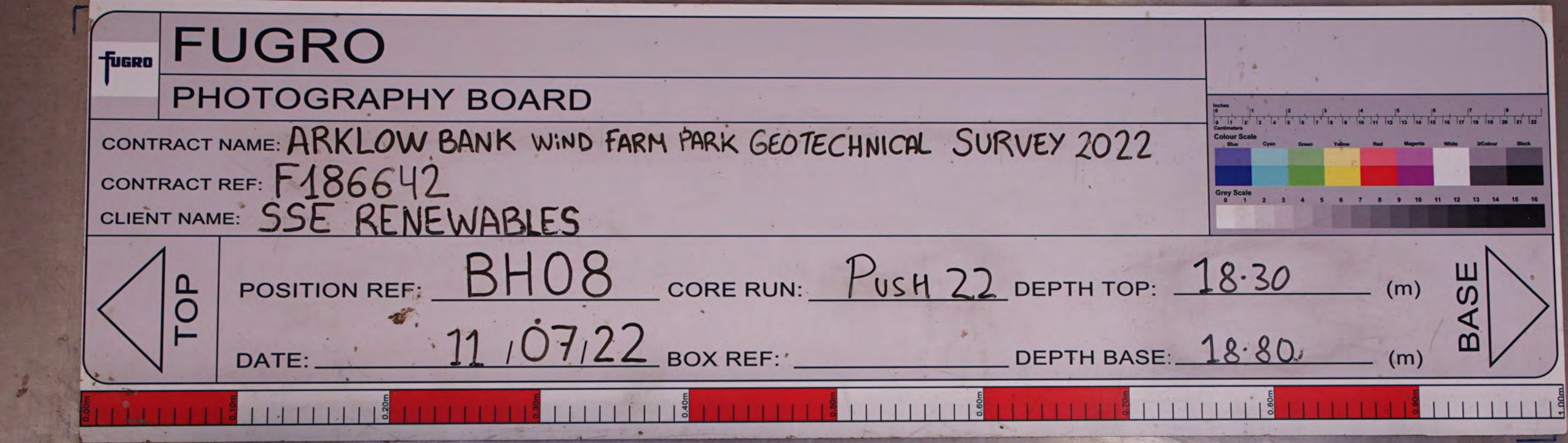

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 22
DEPTH TOP: 18.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 18.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.259

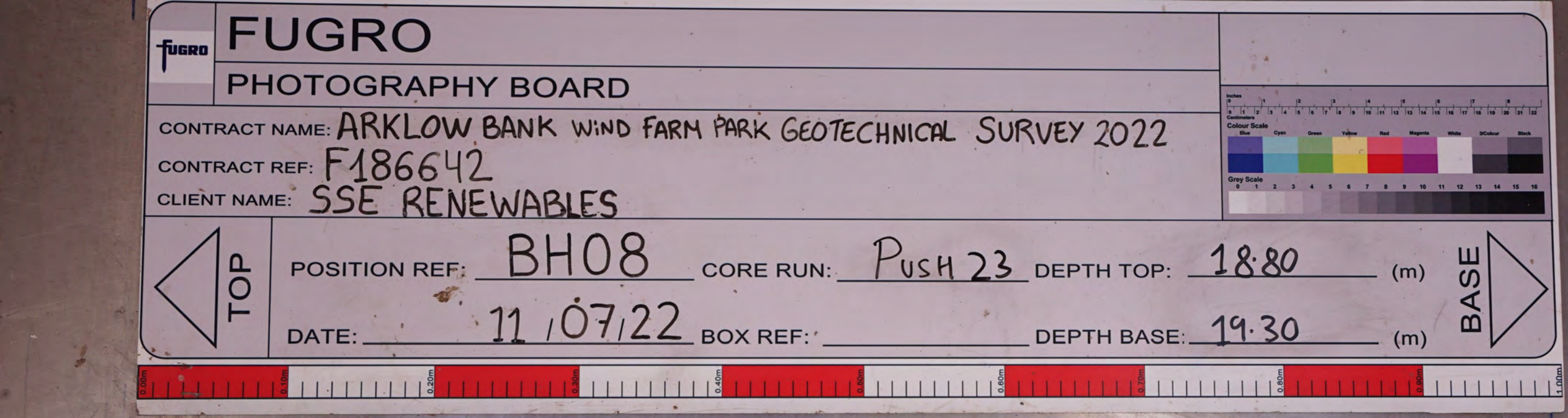

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 23
DEPTH TOP: 18.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 19.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.260

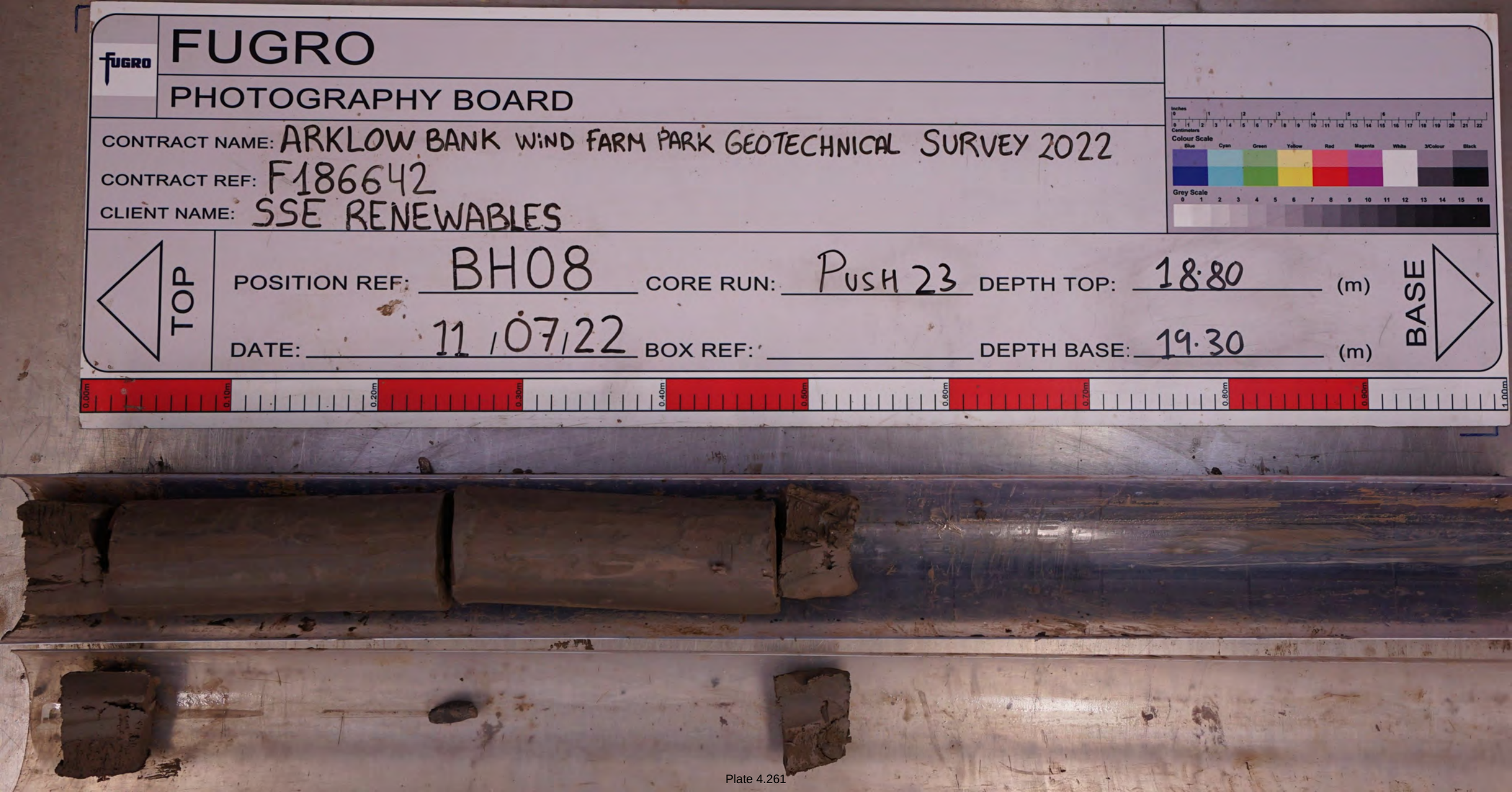

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 23
DEPTH TOP: 18.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 19.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.261

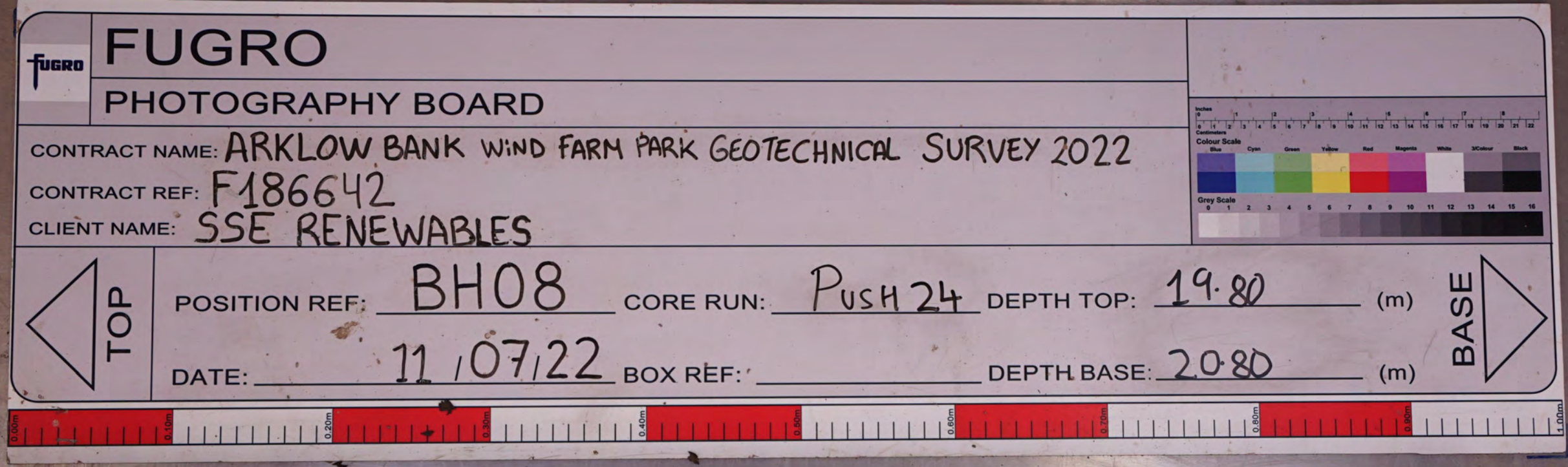

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 24
DEPTH TOP: 19.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 20.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.262

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 24 DEPTH TOP: 19.80 (m)

DATE: 11/07/22 BOX REF: DEPTH BASE: 20.80 (m)

BASE



Plate 4.263

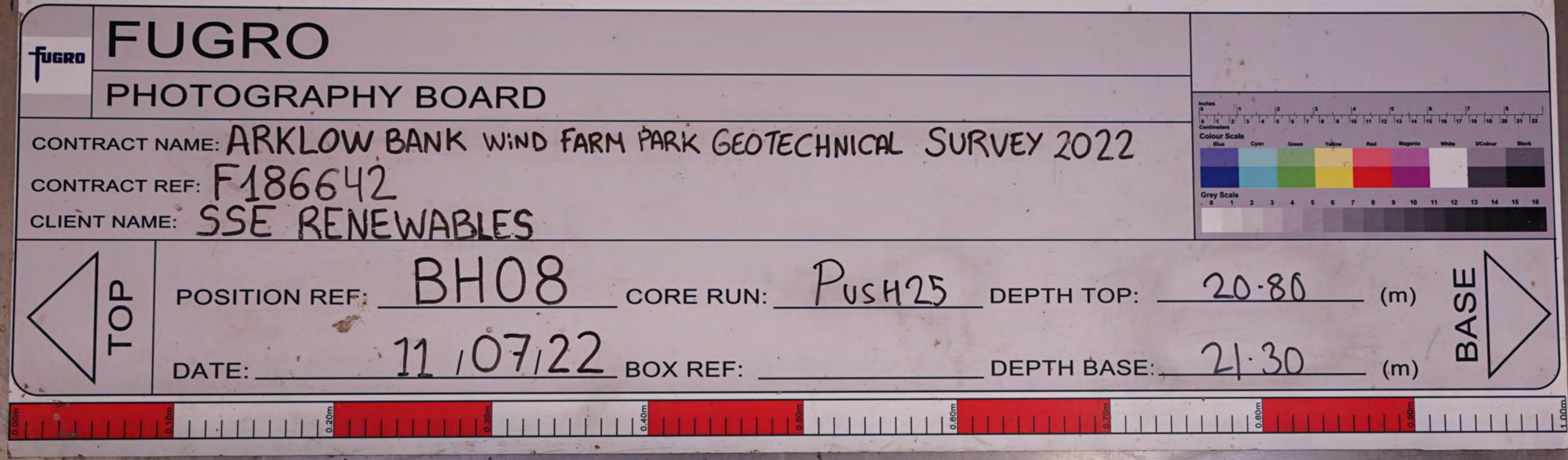

FUGRO
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH25
DEPTH TOP: 20.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 21.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.264

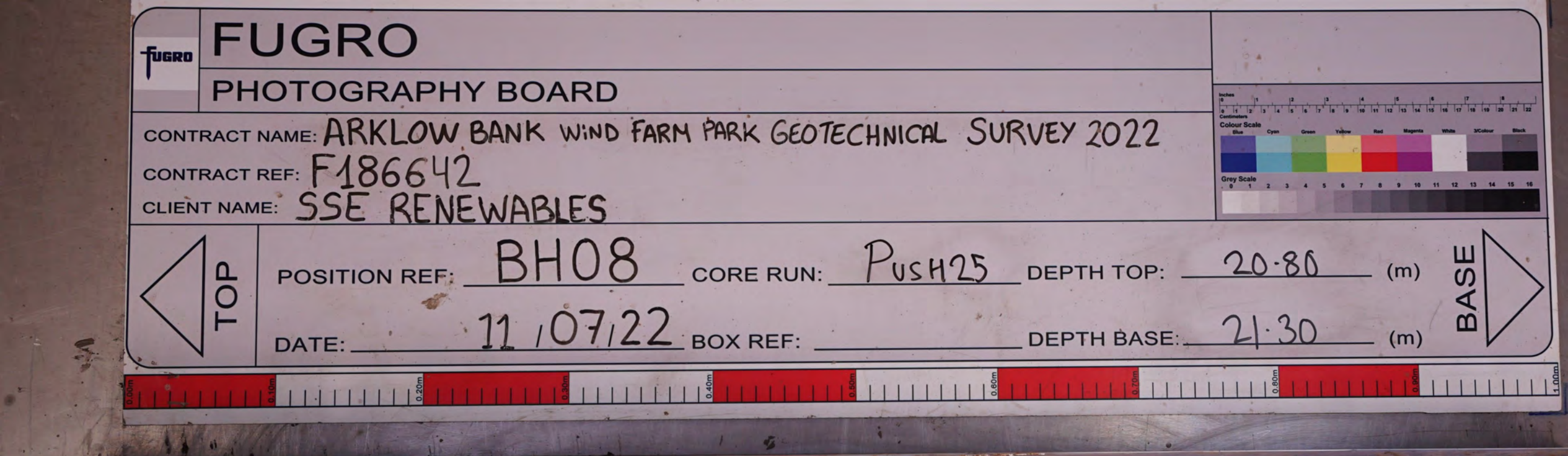
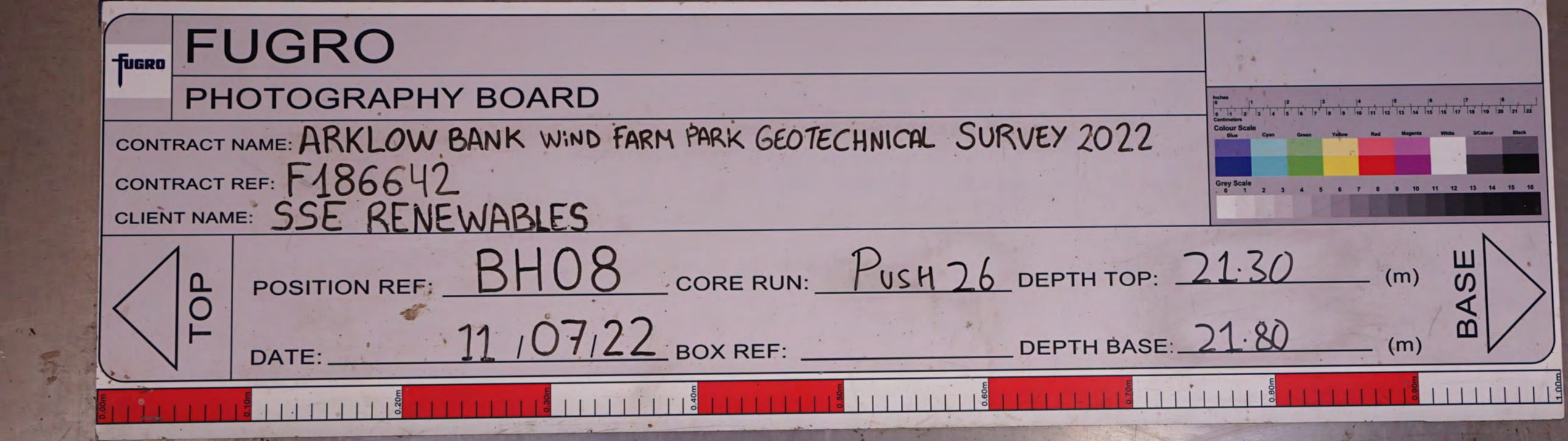

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH25
DEPTH TOP: 20.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 21.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.265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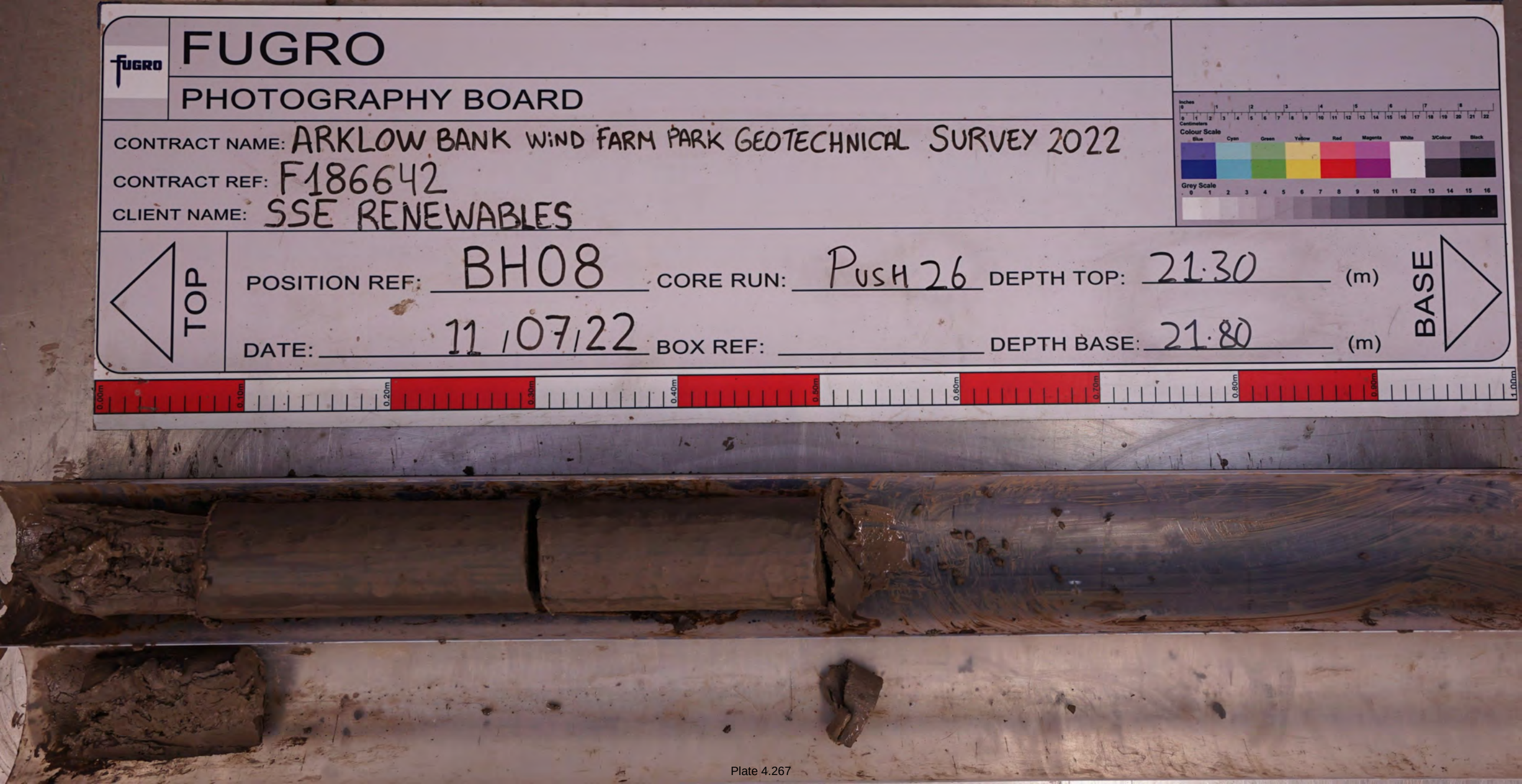
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 26
DEPTH TOP: 21.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 21.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.266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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 26
DEPTH TOP: 21.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 21.80 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.267

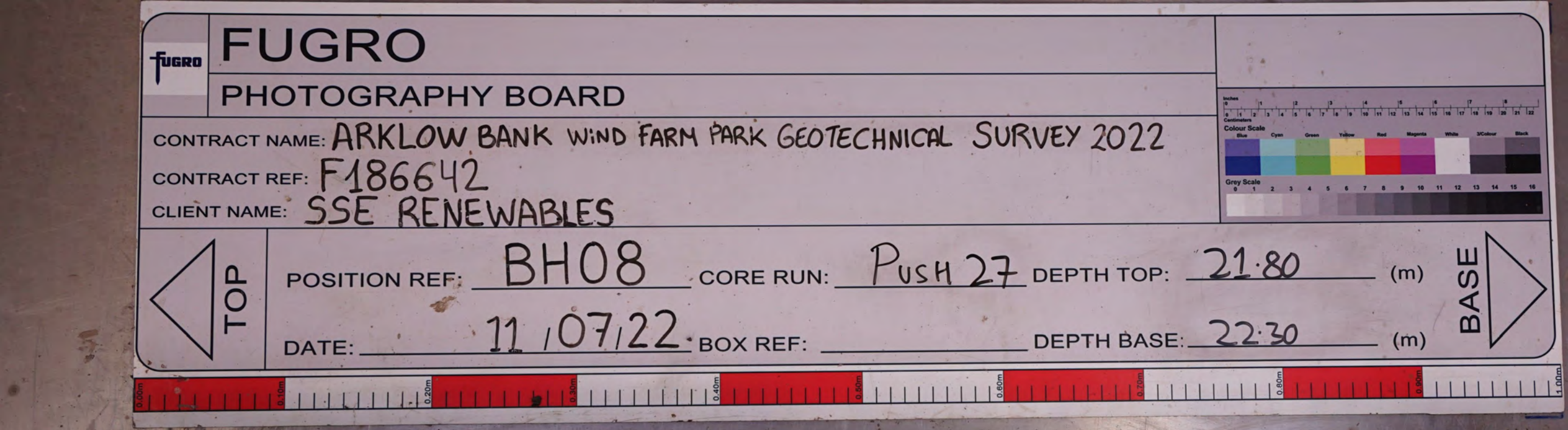

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 27
DEPTH TOP: 21.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 22.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.268

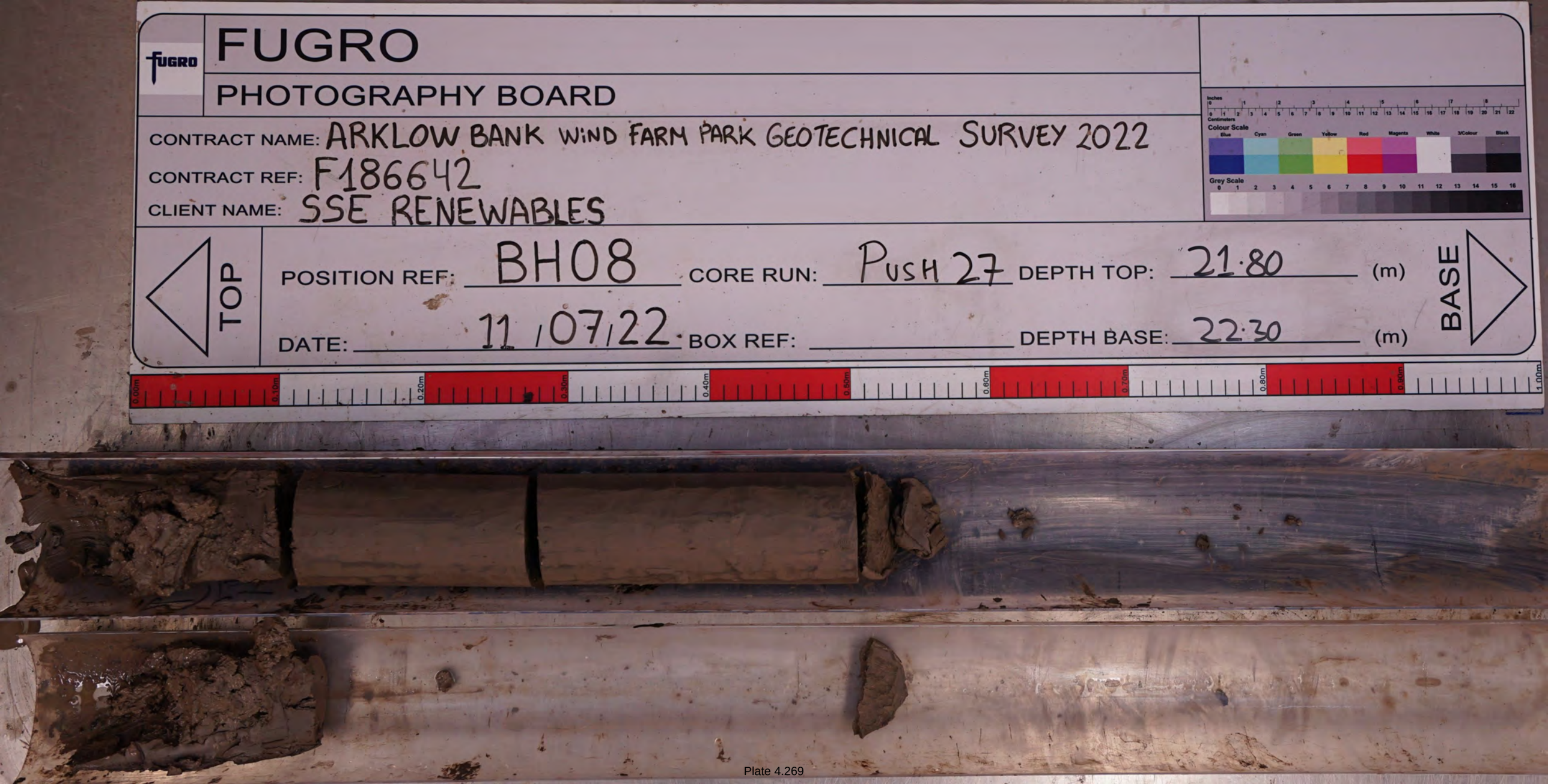
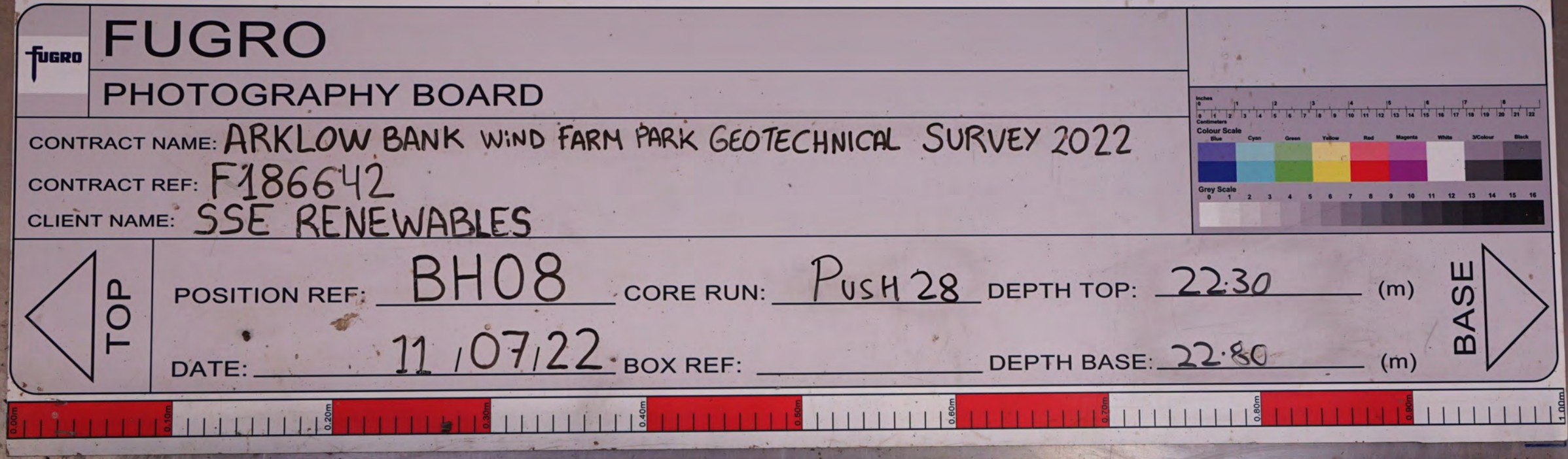

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 27
DEPTH TOP: 21.80 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 22.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.269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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 28
DEPTH TOP: 22.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 22.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.270


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 28
DEPTH TOP: 22.30 (m)
DATE: 11/07/22
BOX REF:
DEPTH BASE: 22.80 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.271

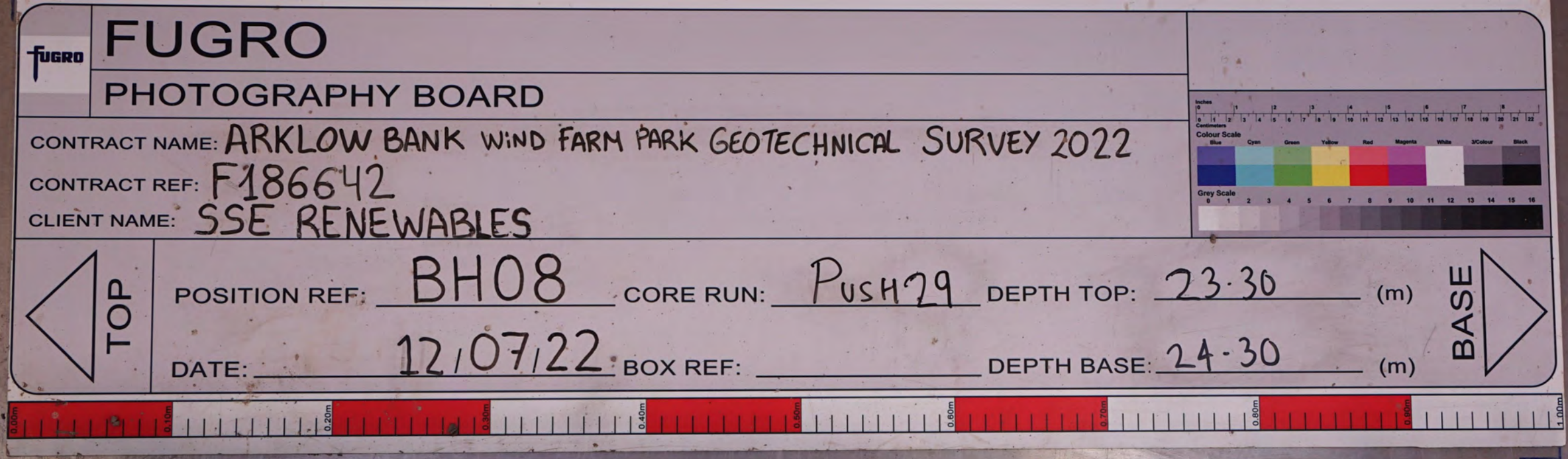
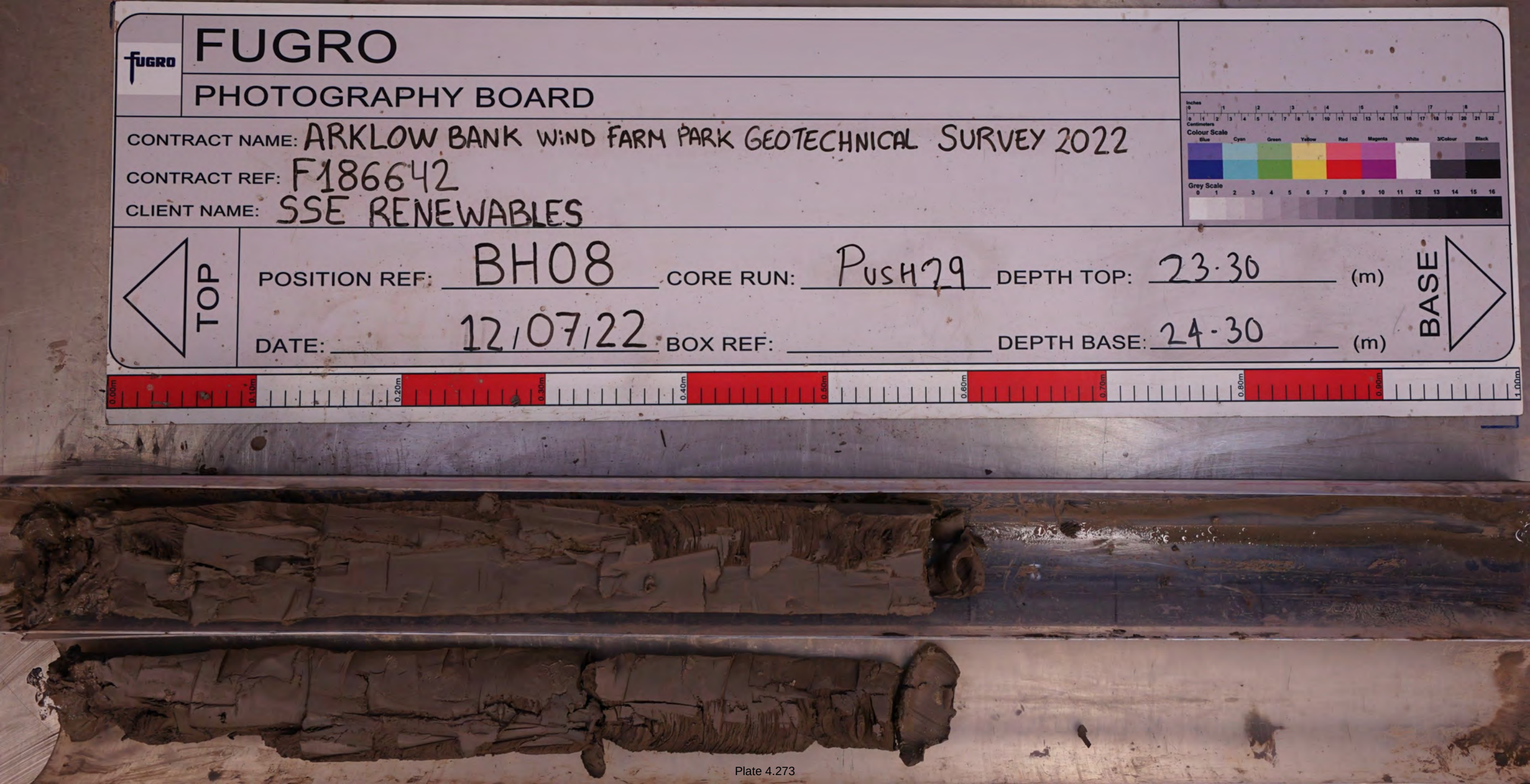

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH29
DEPTH TOP: 23.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 24.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.272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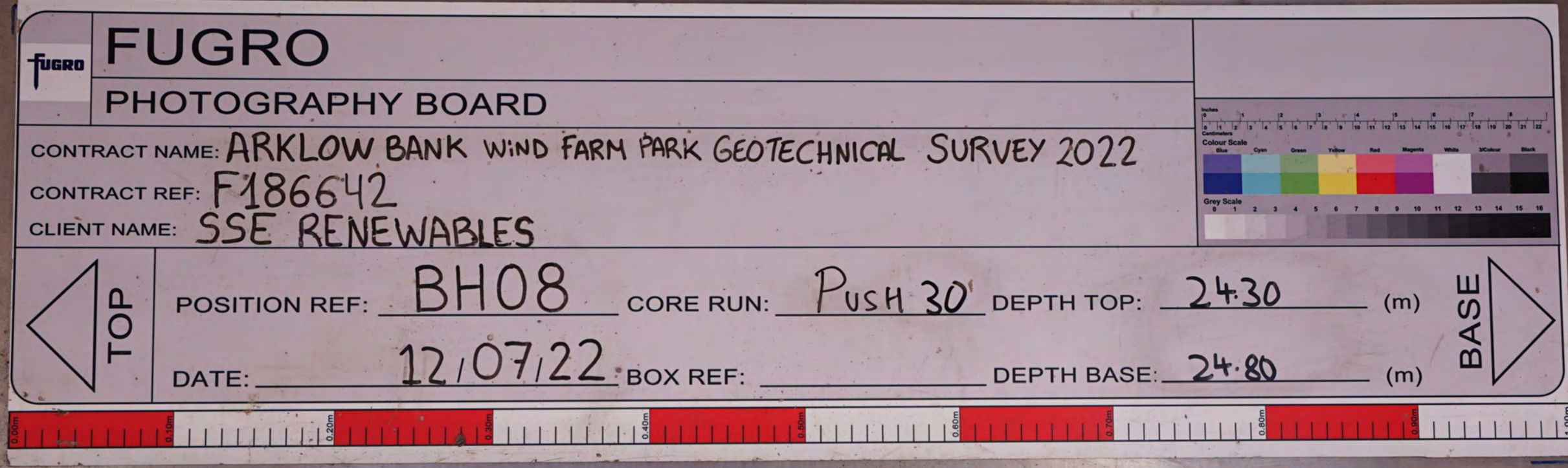
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH29
DEPTH TOP: 23.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 24.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.273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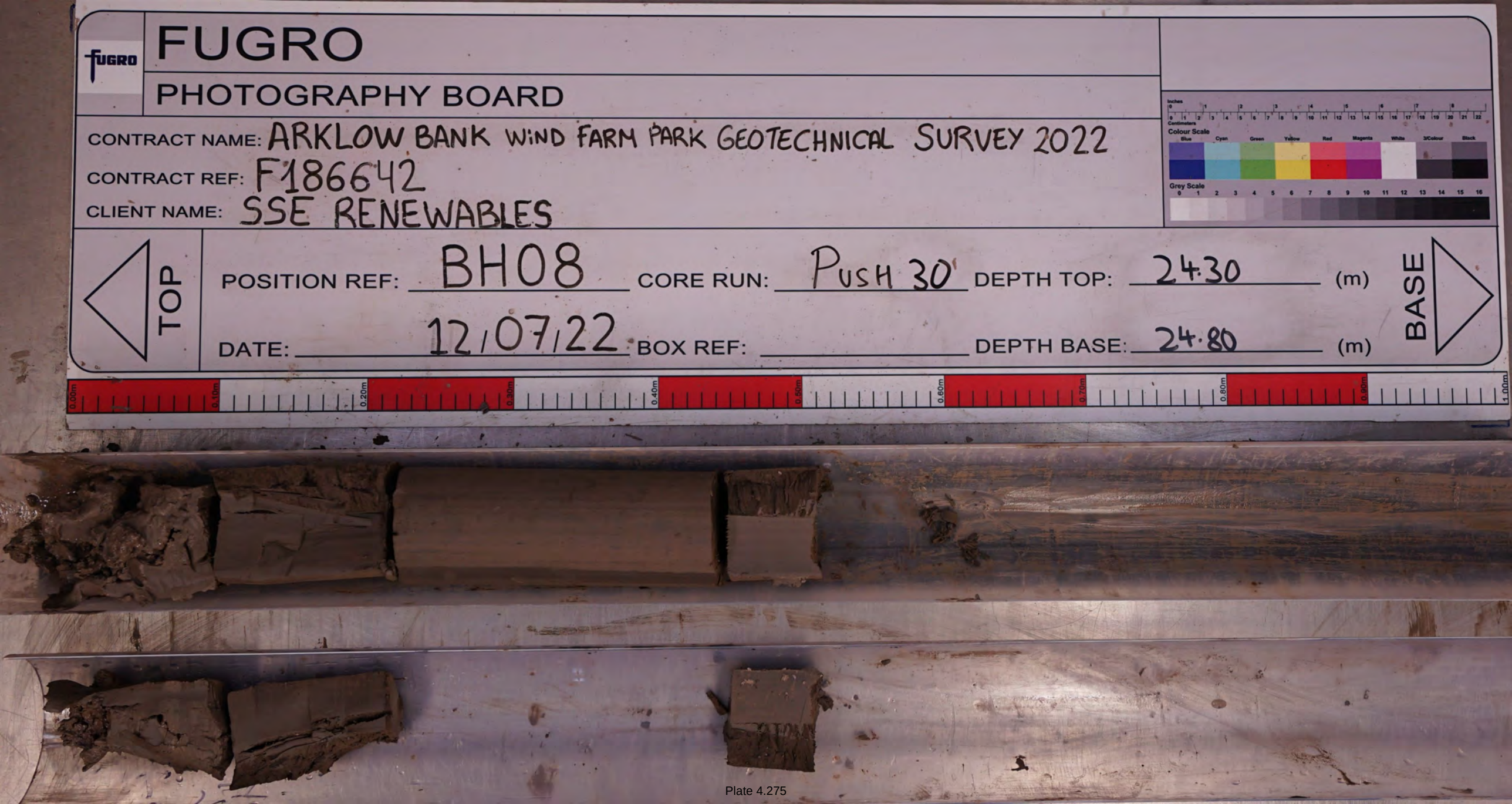
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 30
DEPTH TOP: 24.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 24.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.274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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 30
DEPTH TOP: 24.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 24.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.275

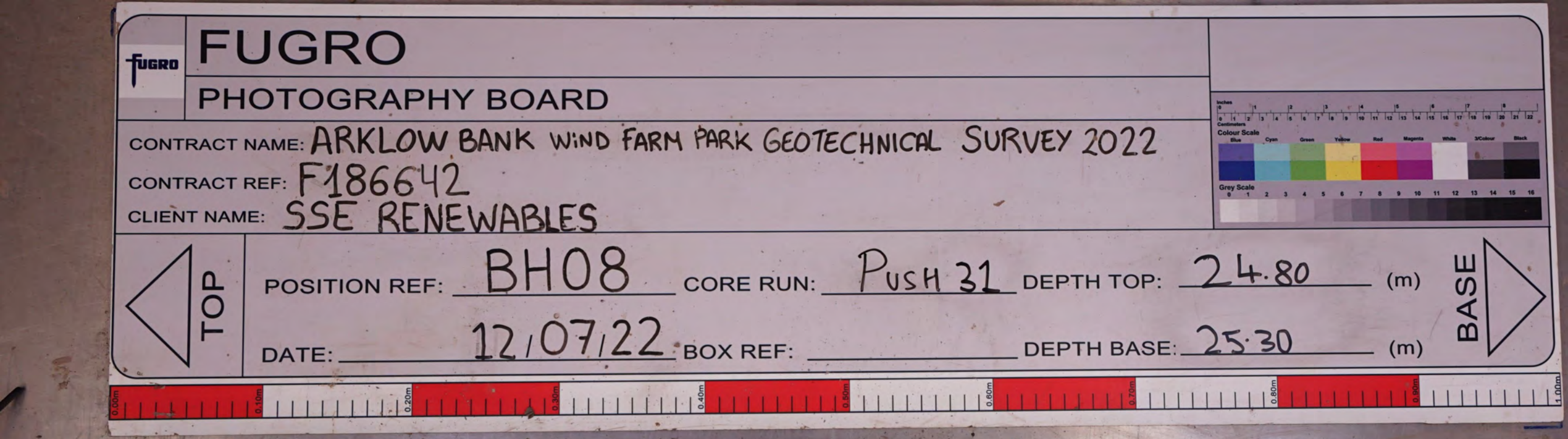
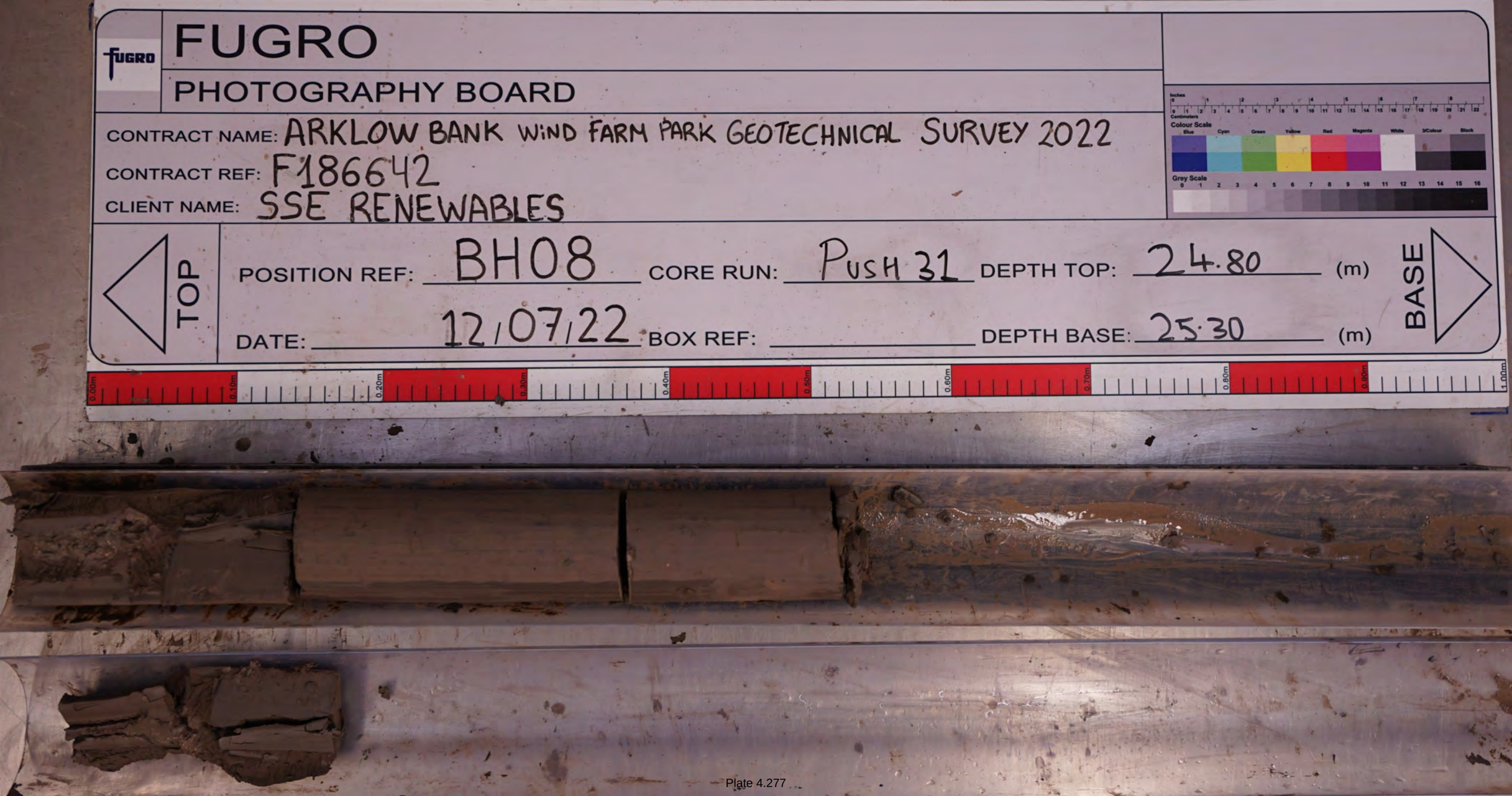

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 31
DEPTH TOP: 24.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 25.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.276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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 31
DEPTH TOP: 24.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 25.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.277

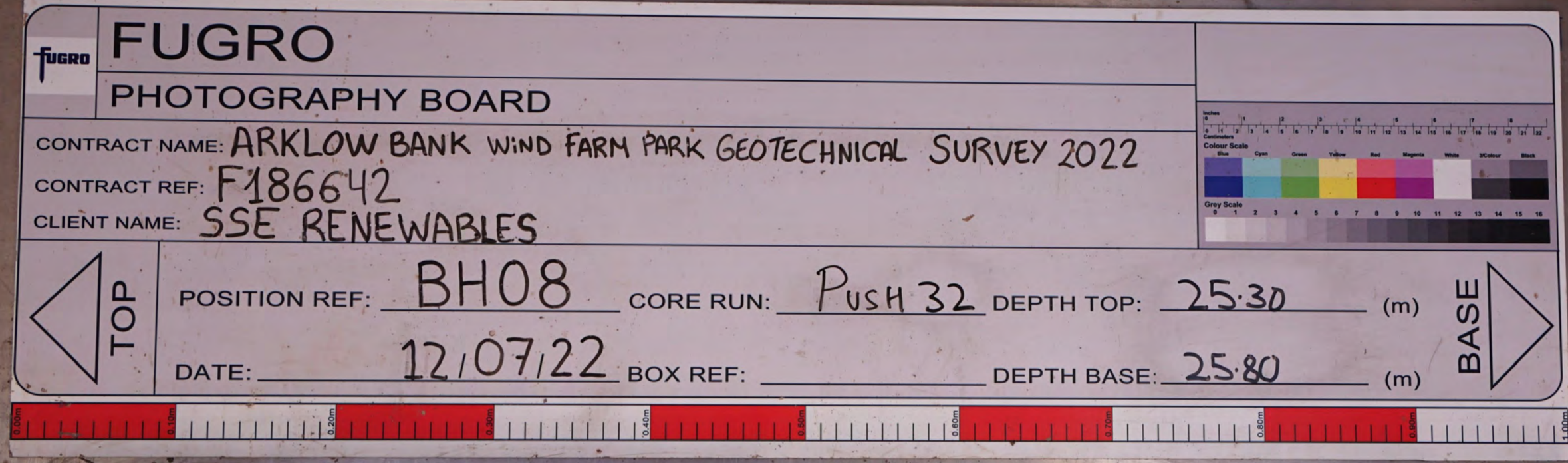

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 32
DEPTH TOP: 25.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 25.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.278

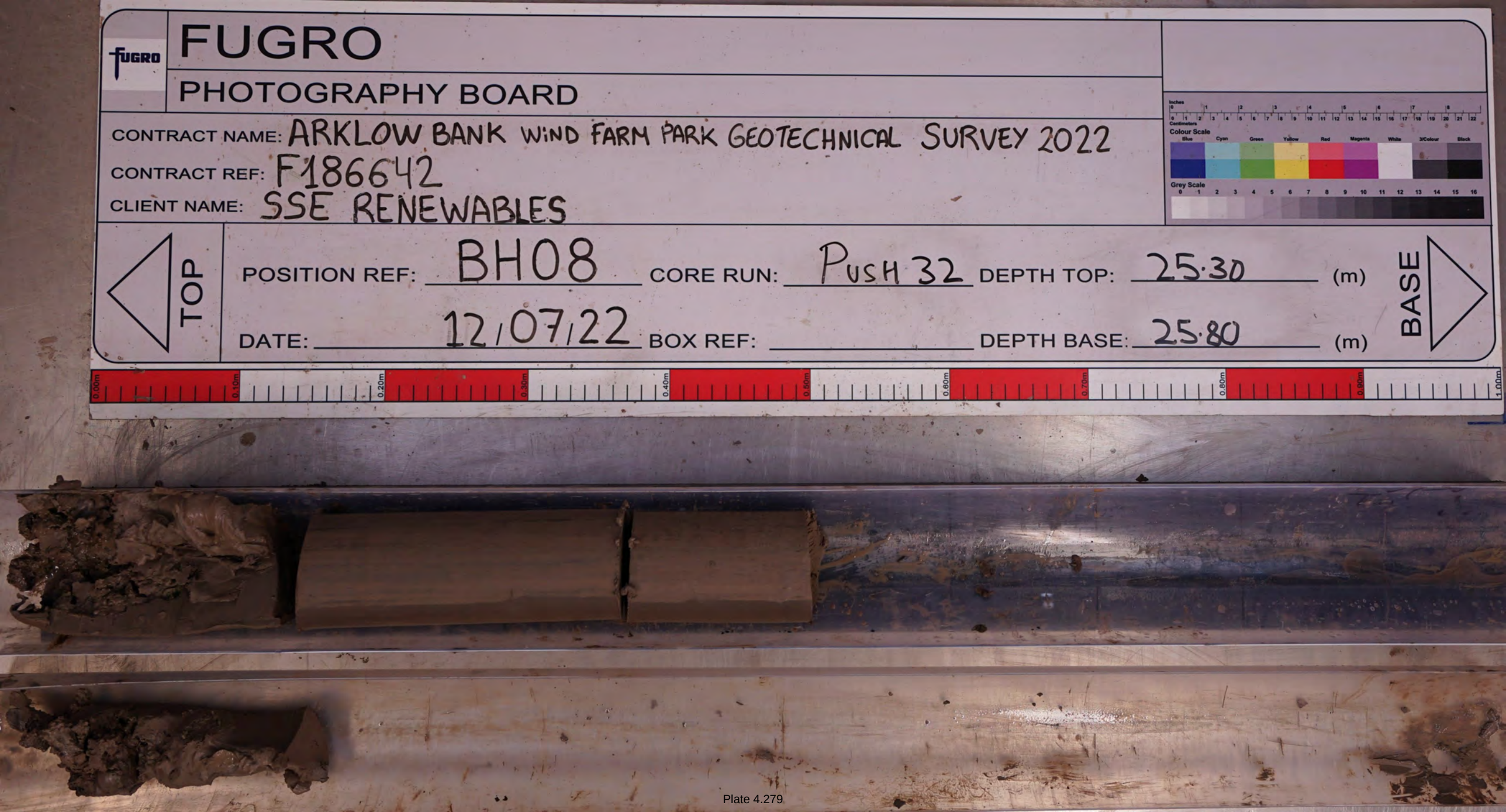

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 32
DEPTH TOP: 25.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 25.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.279

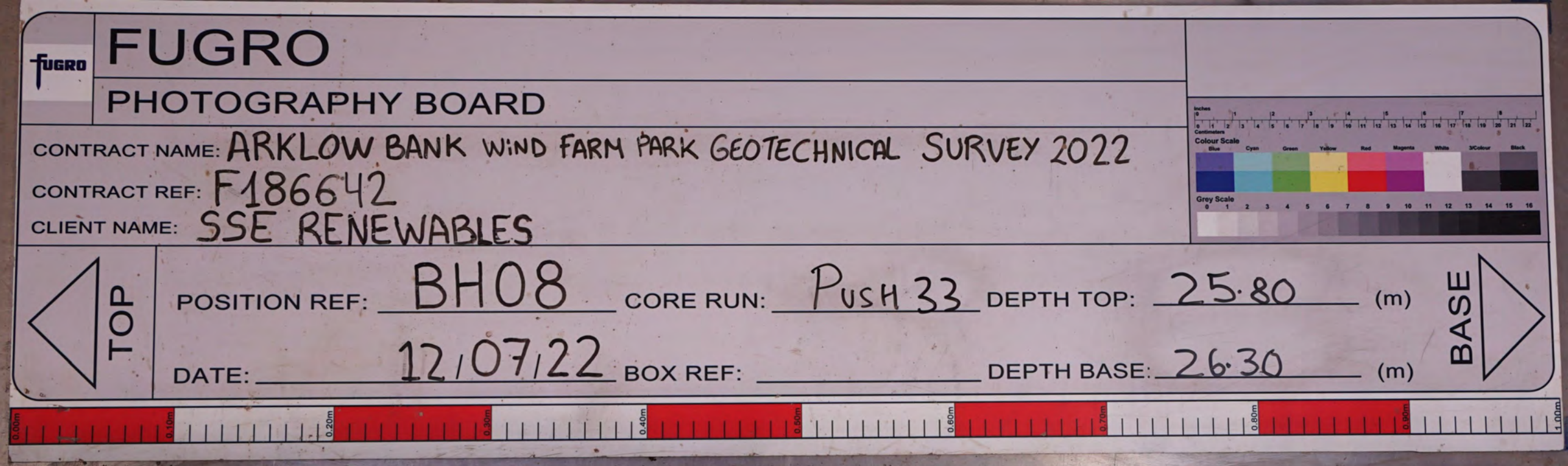

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 33
DEPTH TOP: 25.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 26.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.280

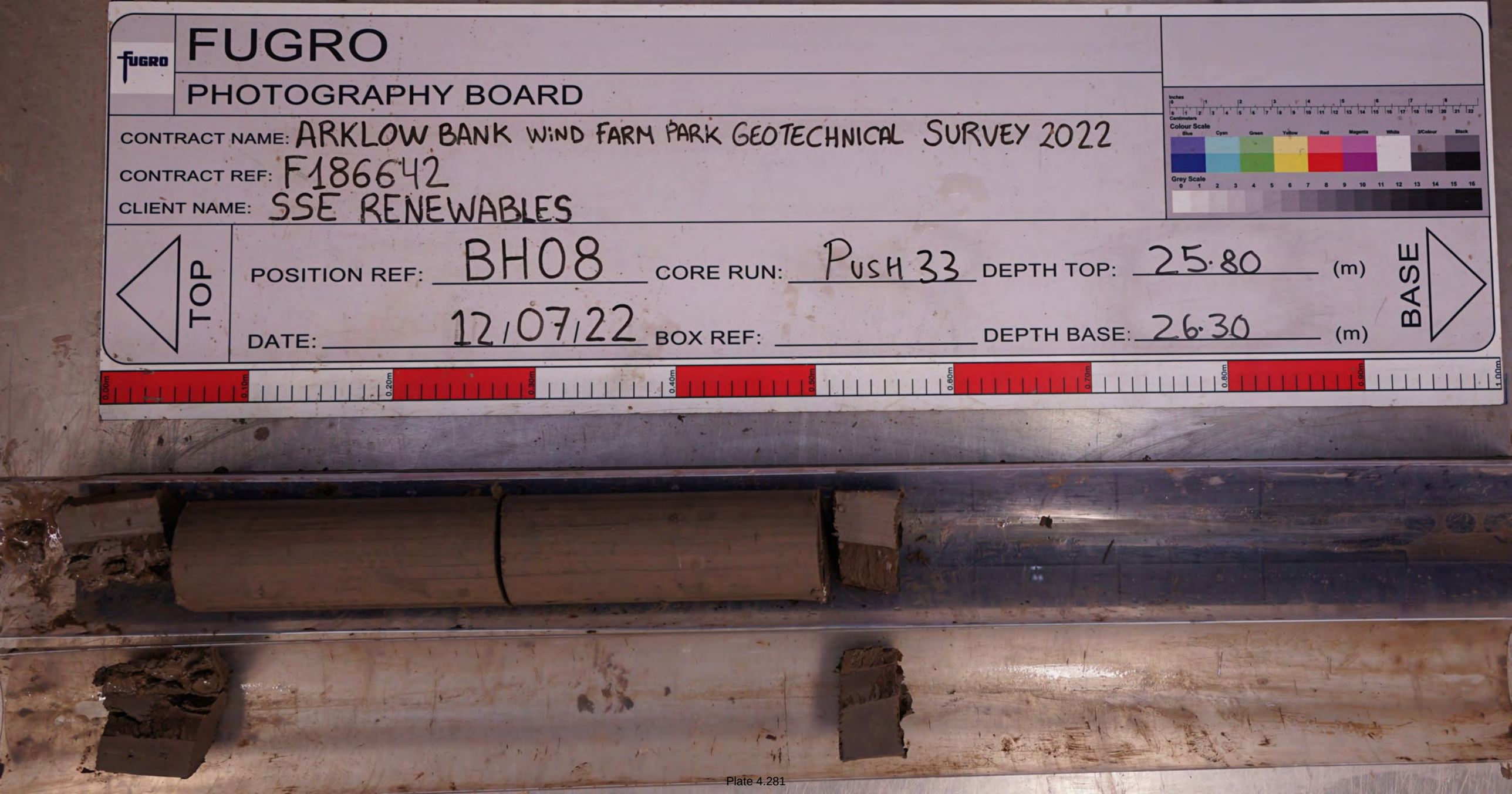

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 33
DEPTH TOP: 25.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 26.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.281

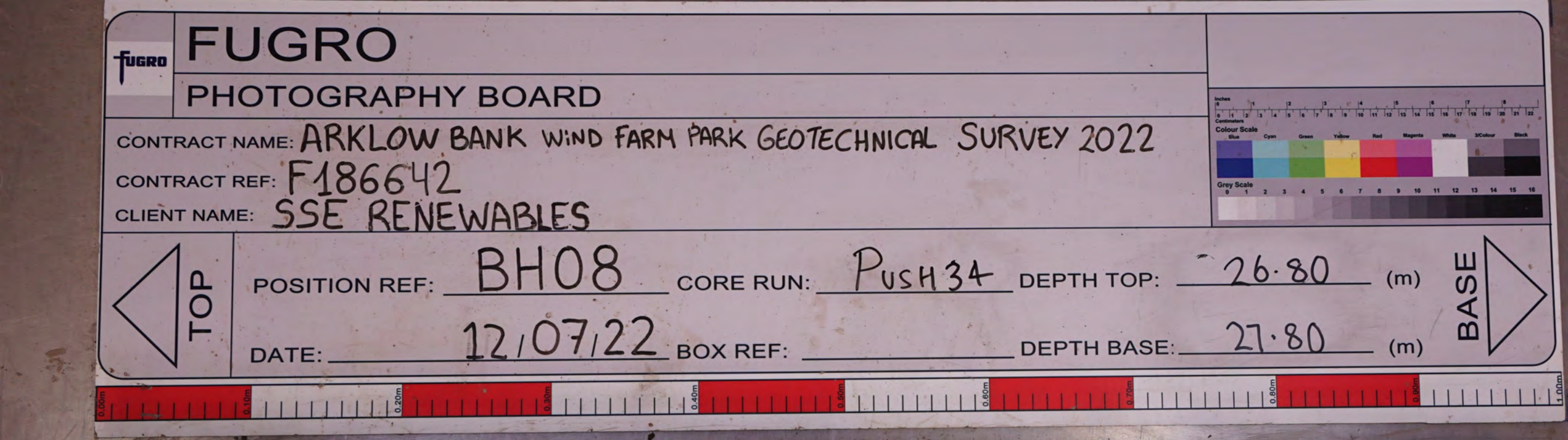
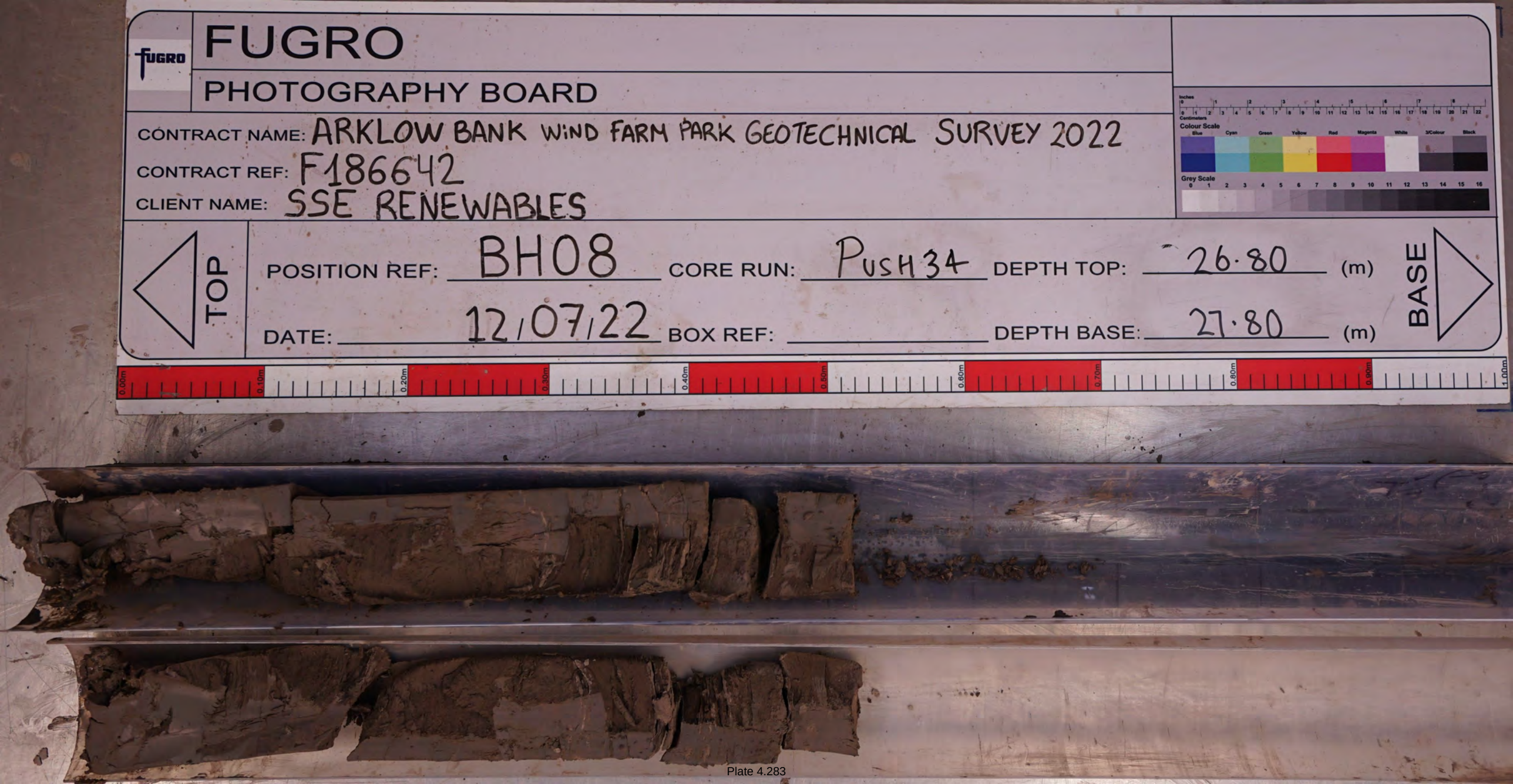

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH34
DEPTH TOP: 26.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 27.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.282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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH34
DEPTH TOP: 26.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 27.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.283

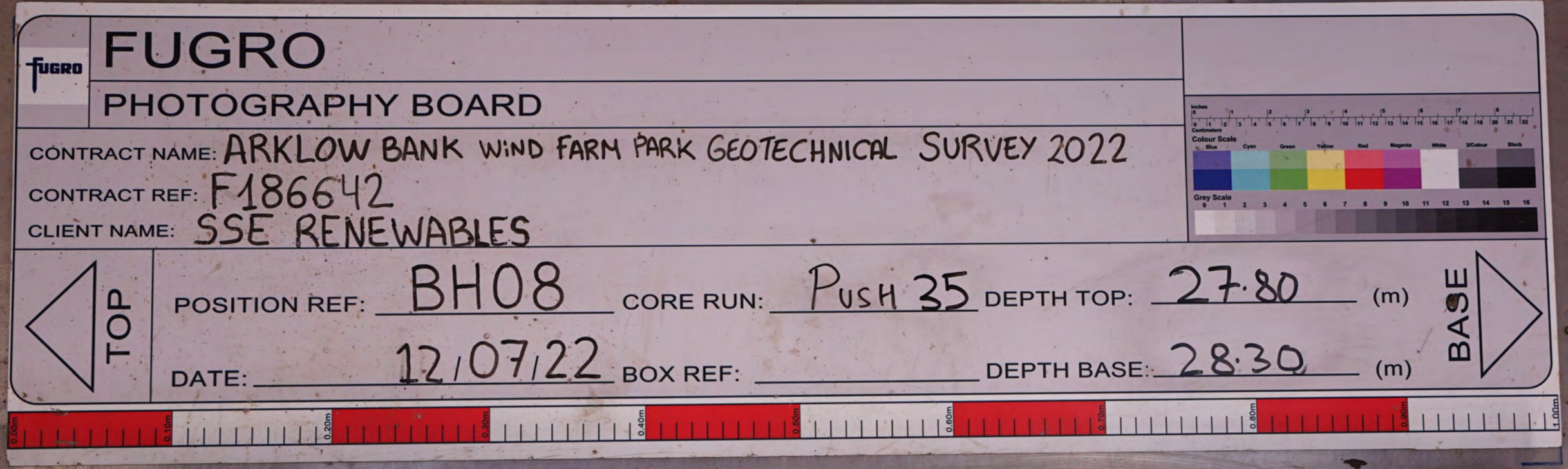
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 35
DEPTH TOP: 27.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 28.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.284

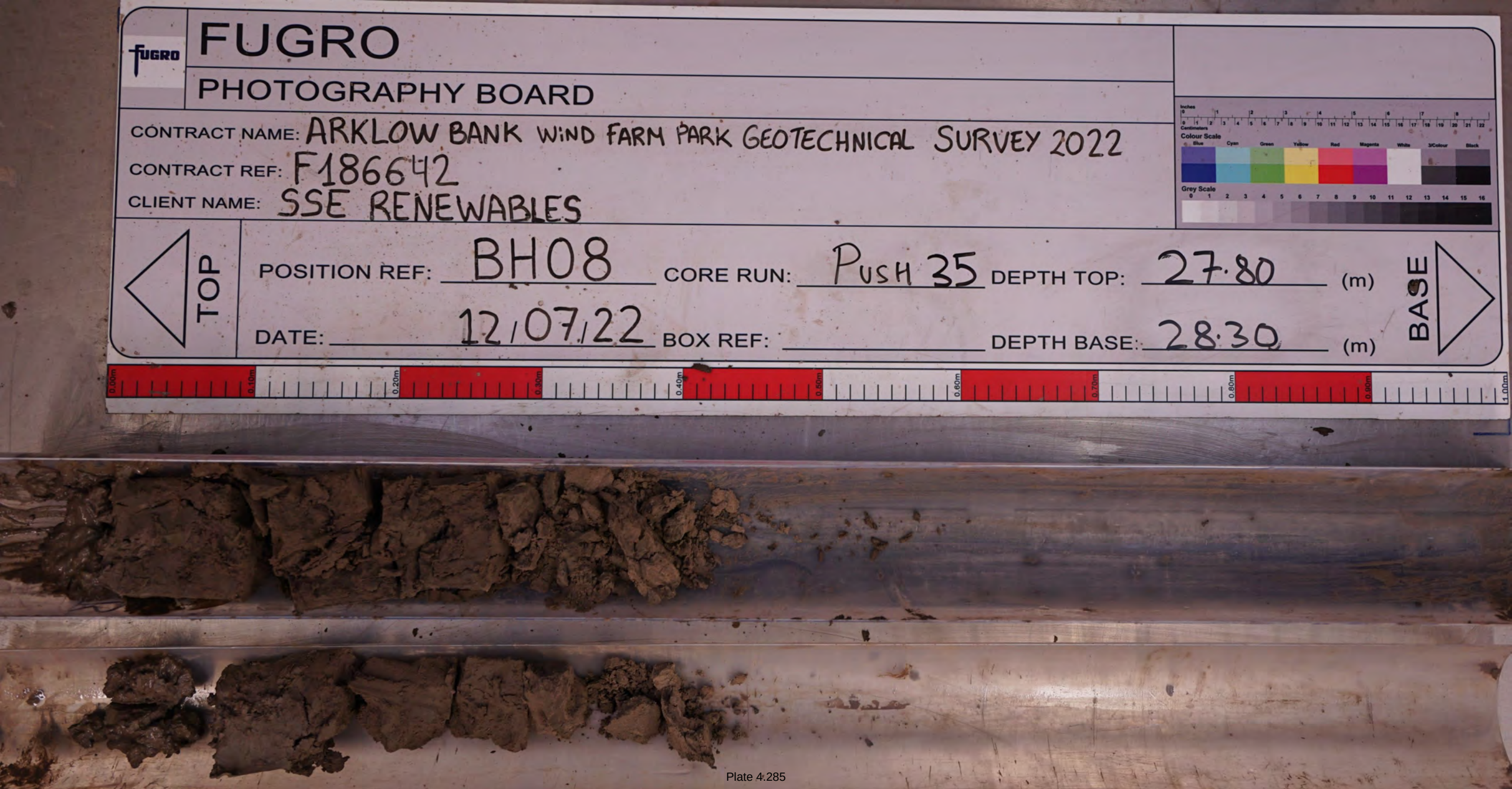
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 35
DEPTH TOP: 27.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 28.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.285

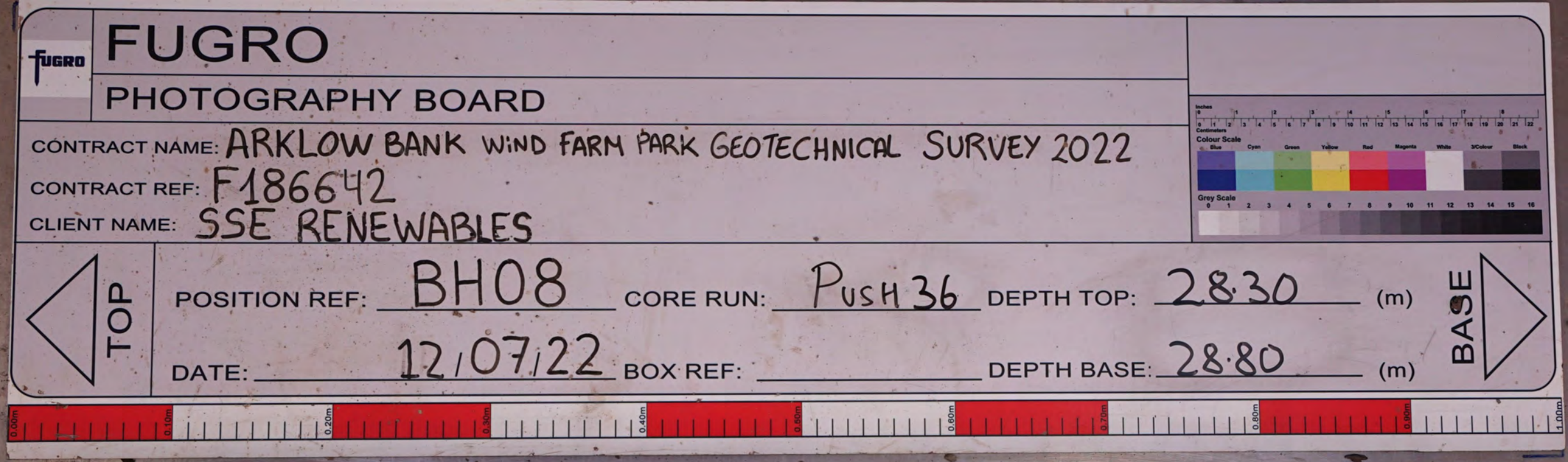
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 36
DEPTH TOP: 28.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 28.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.286

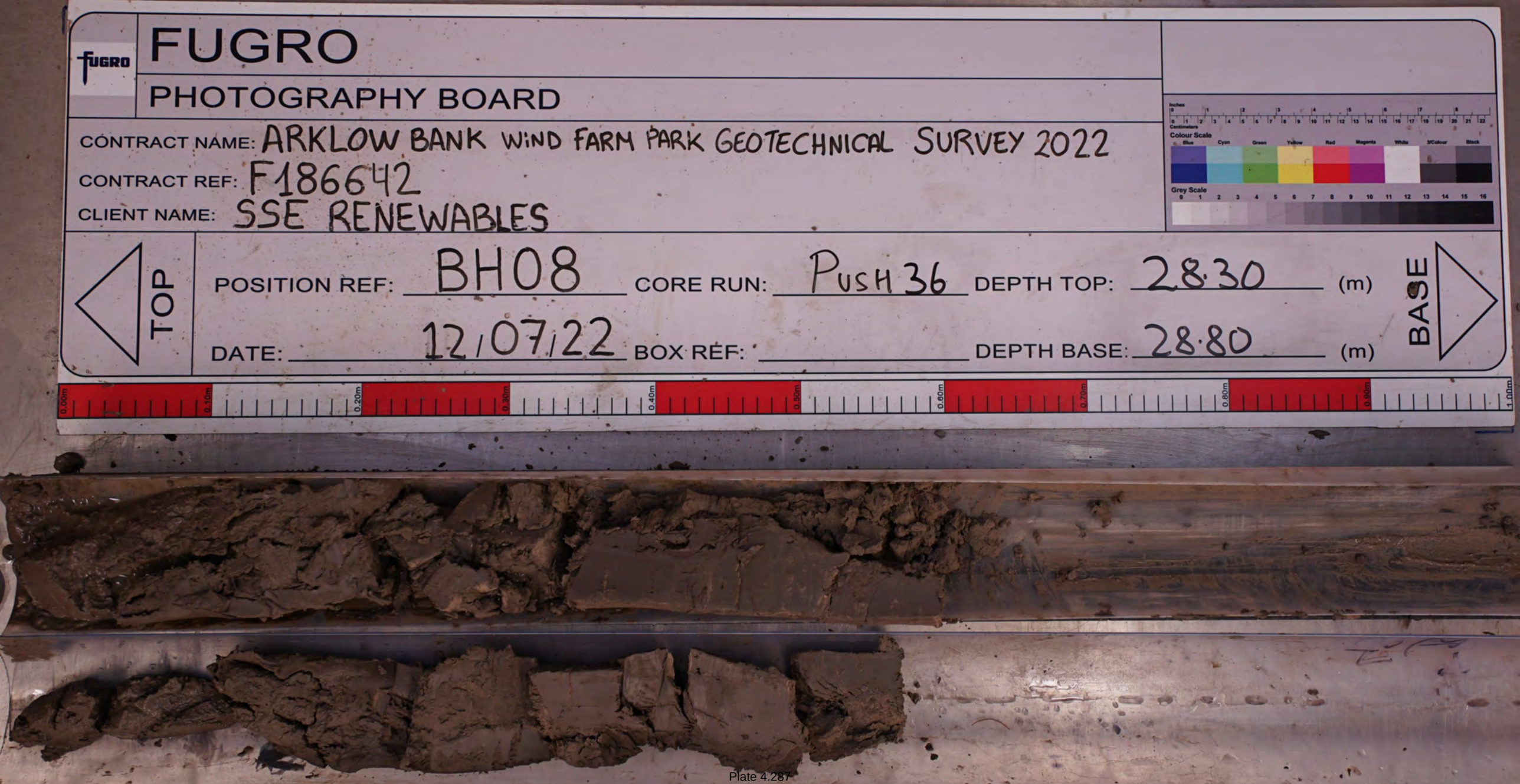
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 36
DEPTH TOP: 28.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 28.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.287

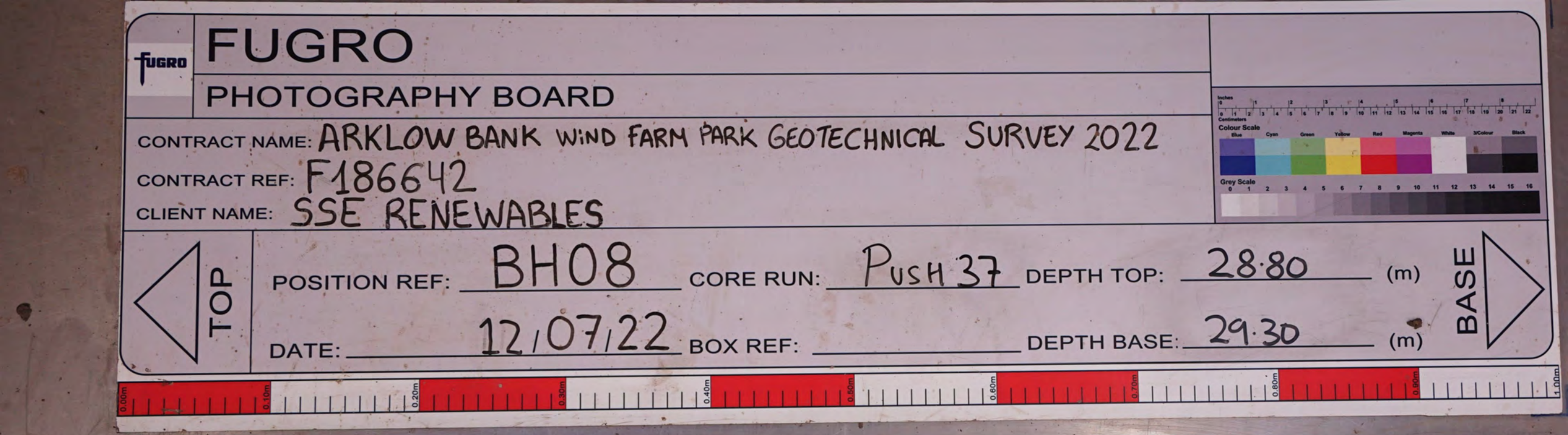
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 37
DEPTH TOP: 28.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 29.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.288


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 37
DEPTH TOP: 28.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 29.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.289

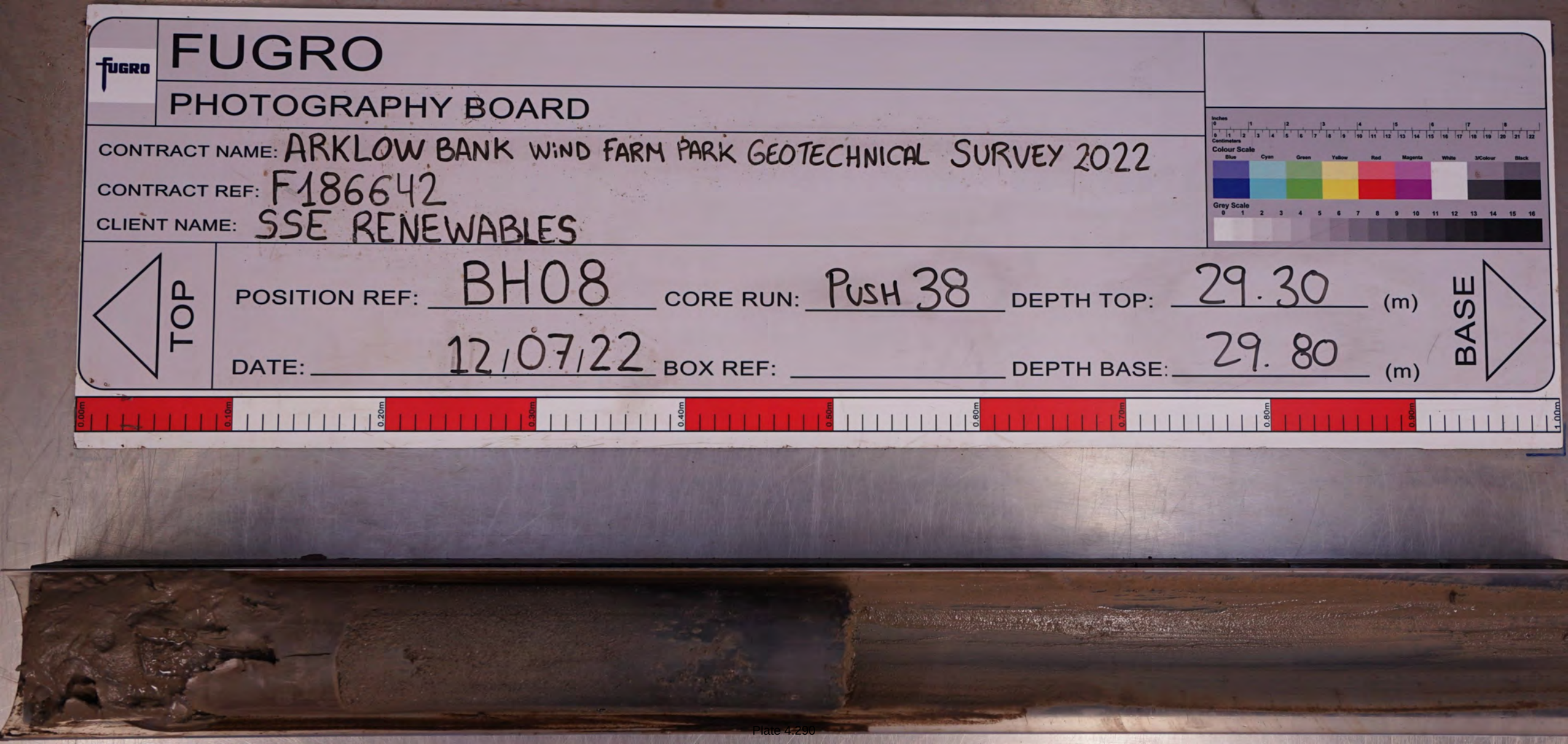
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 38
DEPTH TOP: 29.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 29.80 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.290

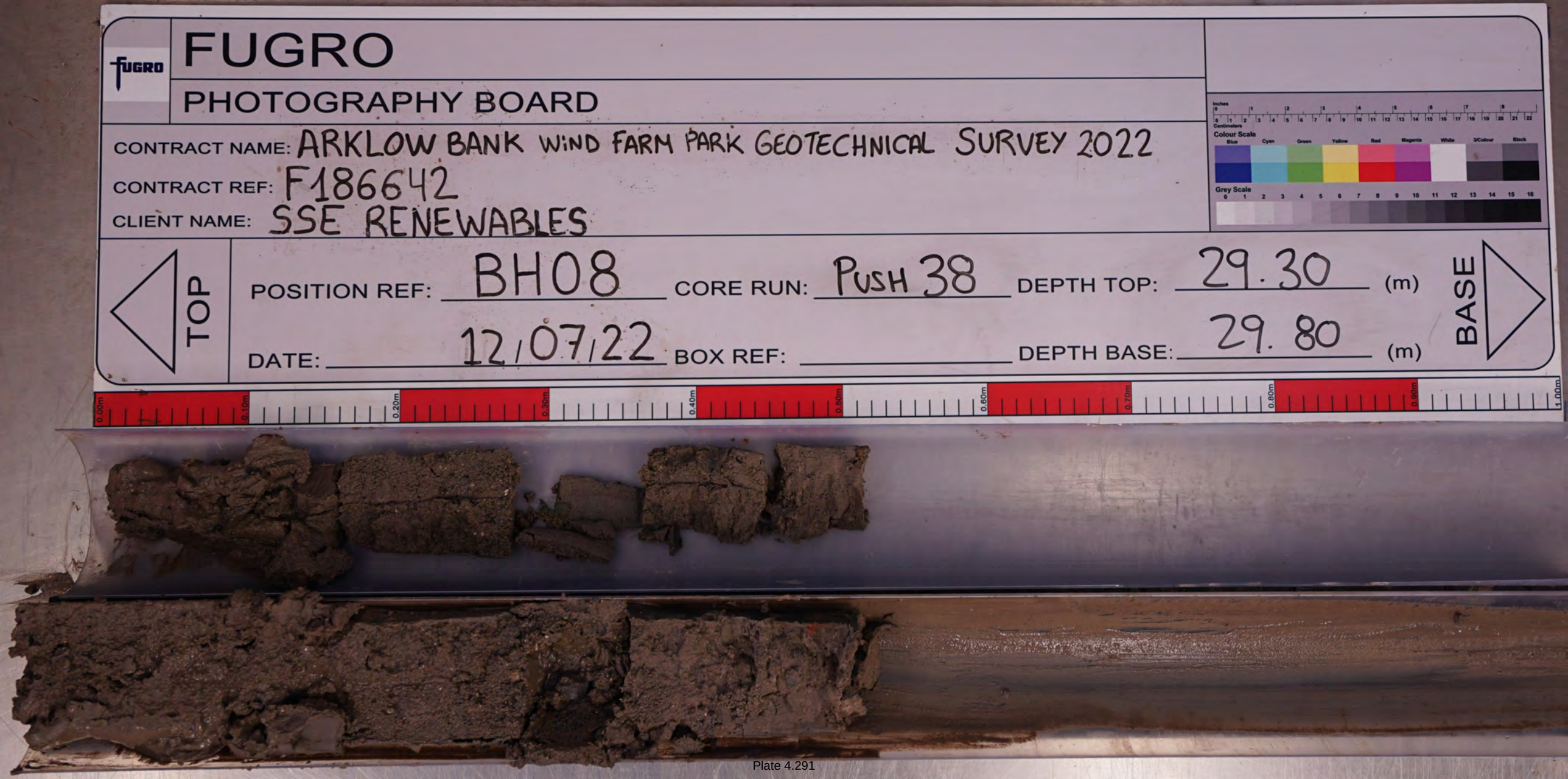
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 38
DEPTH TOP: 29.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 29.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.291

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR1

BOX REF: 1

DEPTH TOP: 29.80 (m)

DEPTH BASE: 31.30 (m)

BASE

CR1

29.80m

31.30m

Plate 4.292

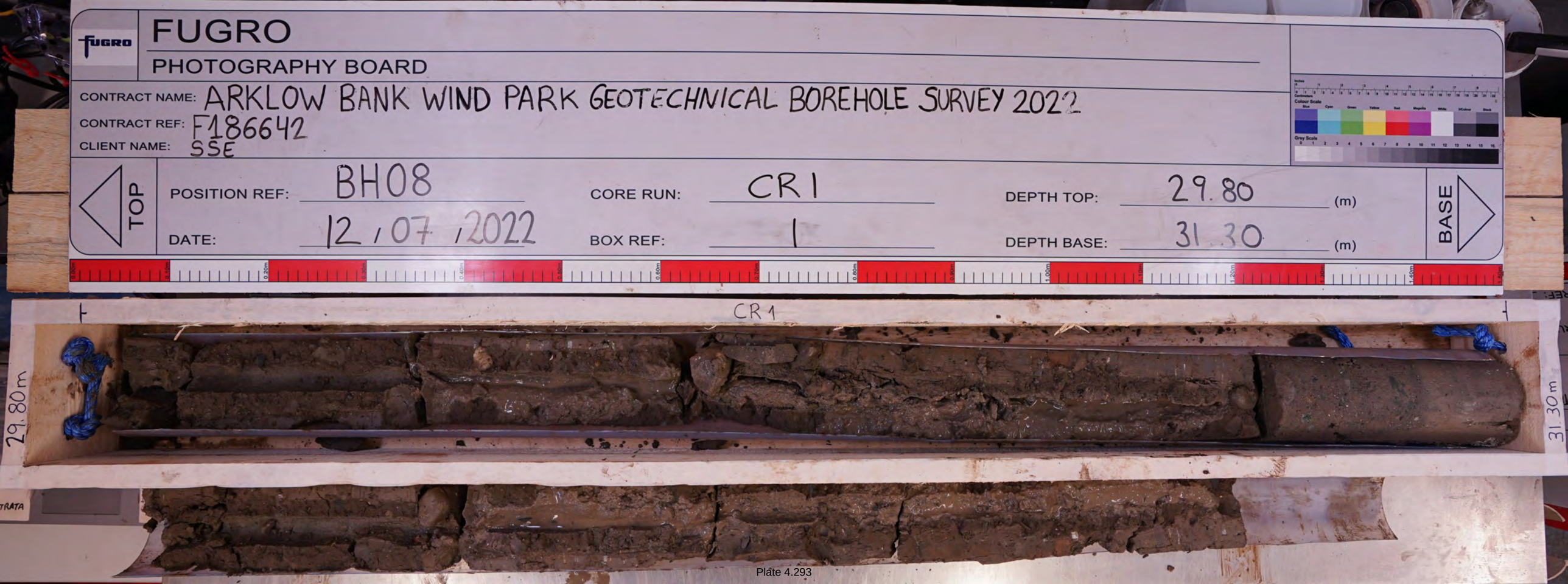
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR1
DEPTH TOP: 29.80 (m)
DATE: 12/07/2022
BOX REF: 1
DEPTH BASE: 31.30 (m)
BASE
CR1
29.80m
31.30m

Plate 4.293

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR2

BOX REF: 2

DEPTH TOP: 31.30 (m)

DEPTH BASE: 32.30 (m)

BASE

CR2

31.30 m

32.30 m

Plate 4.294

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR2

BOX REF: 2

DEPTH TOP: 31.30 (m)

DEPTH BASE: 32.30 (m)

BASE



Plate 4.295

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CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR3

BOX REF: 3

DEPTH TOP: 32.30 (m)

DEPTH BASE: 33.30 (m)

BASE

CR 3

32.30m

33.30m

Plate 4.296

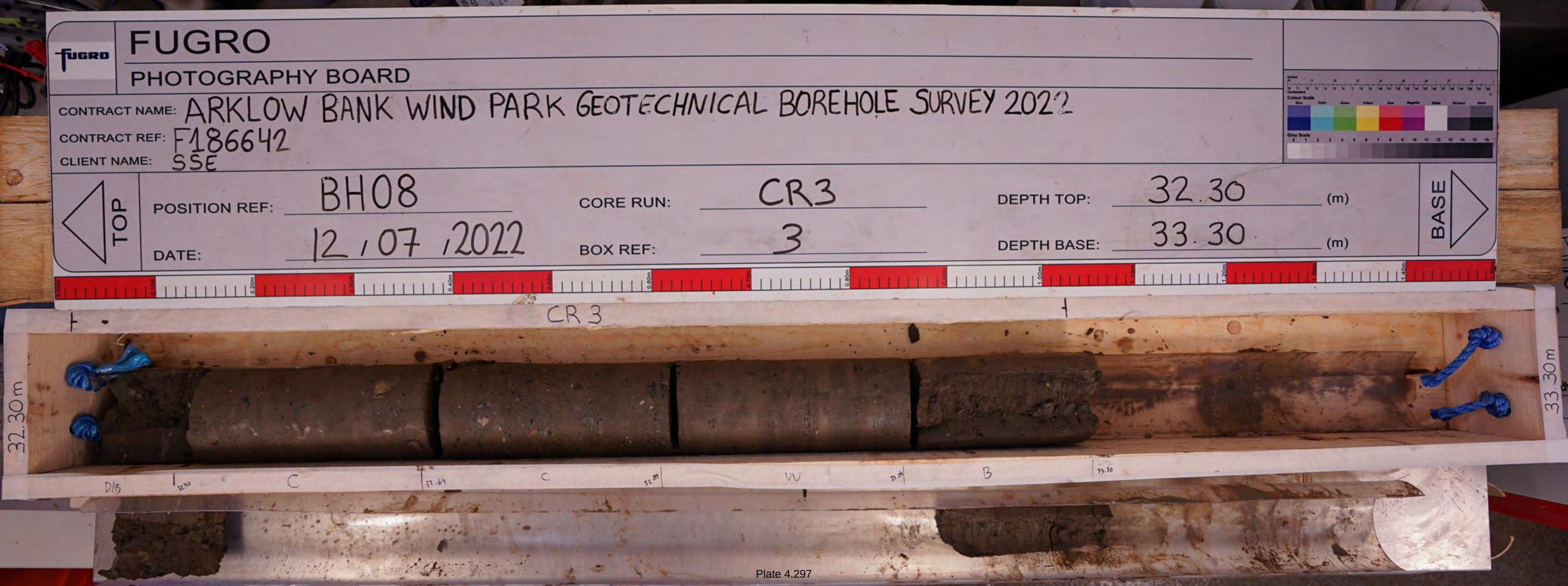

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR3
BOX REF: 3
DEPTH TOP: 32.30 (m)
DEPTH BASE: 33.30 (m)
BASE
CR 3
32.30m
33.30m

Plate 4.297

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR4

BOX REF: 4

DEPTH TOP: 33.30 (m)

DEPTH BASE: 34.80 (m)

BASE

CR4

33.30m

34.80m

Plate 4.293

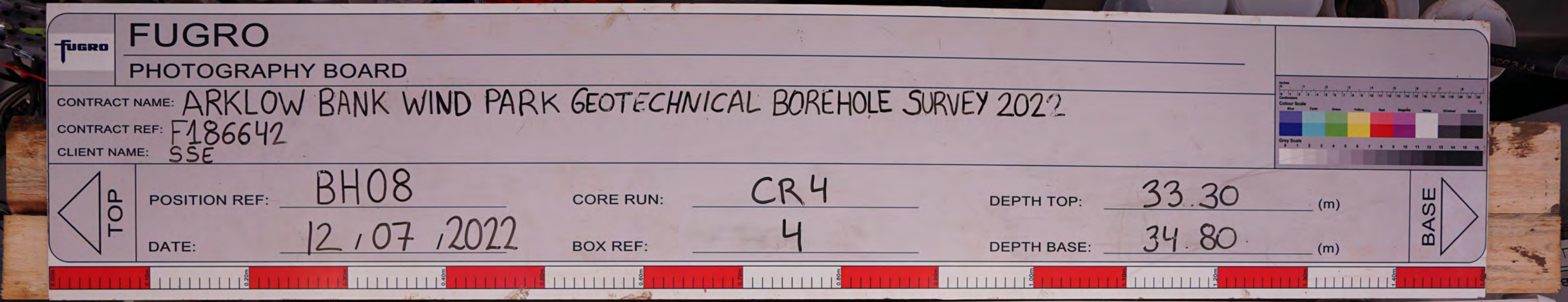
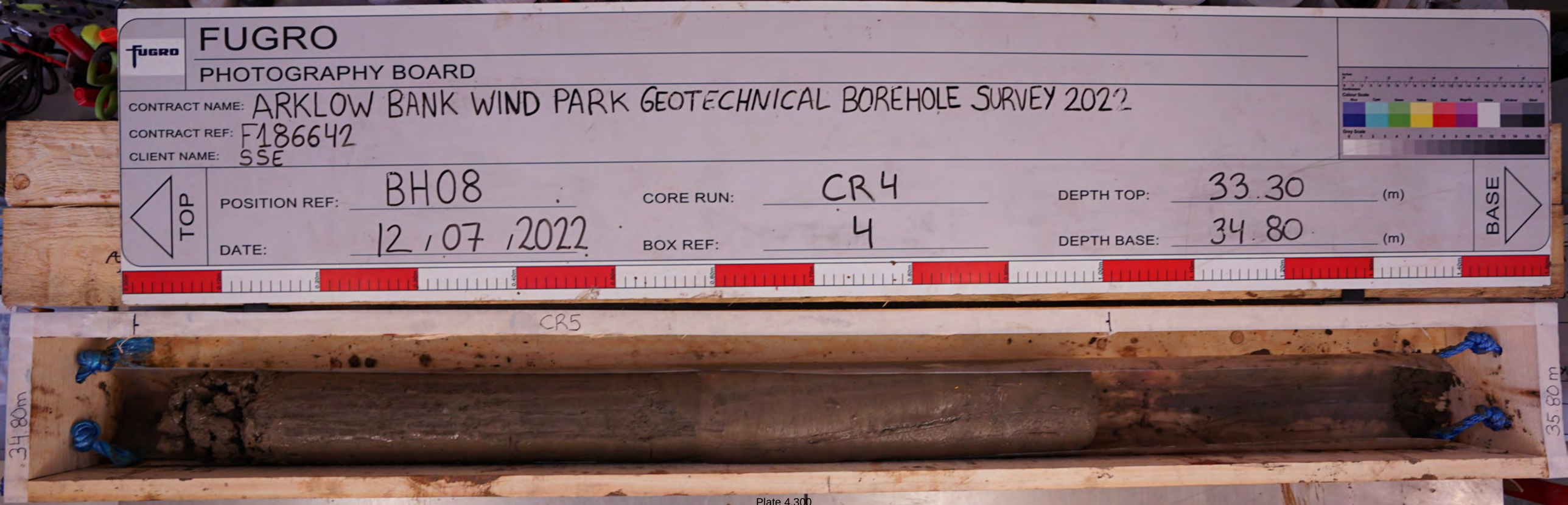

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR4
DEPTH TOP: 33.30 (m)
DATE: 12/07/2022
BOX REF: 4
DEPTH BASE: 34.80 (m)
BASE
CR4
33.30m
34.80m

Plate 4.299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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR4
BOX REF: 4
DEPTH TOP: 33.30 (m)
DEPTH BASE: 34.80 (m)
BASE
CR5
34.80m
35.80m

Plate 4.300

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR4

BOX REF: 4

DEPTH TOP: 33.30 (m)

DEPTH BASE: 34.80 (m)

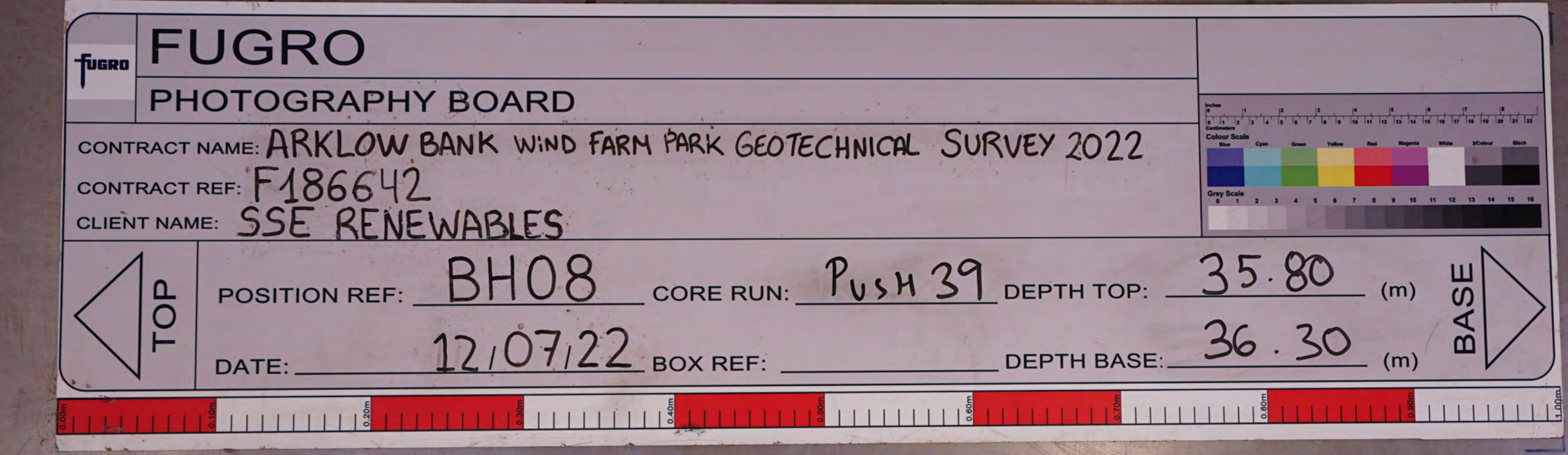
BASE

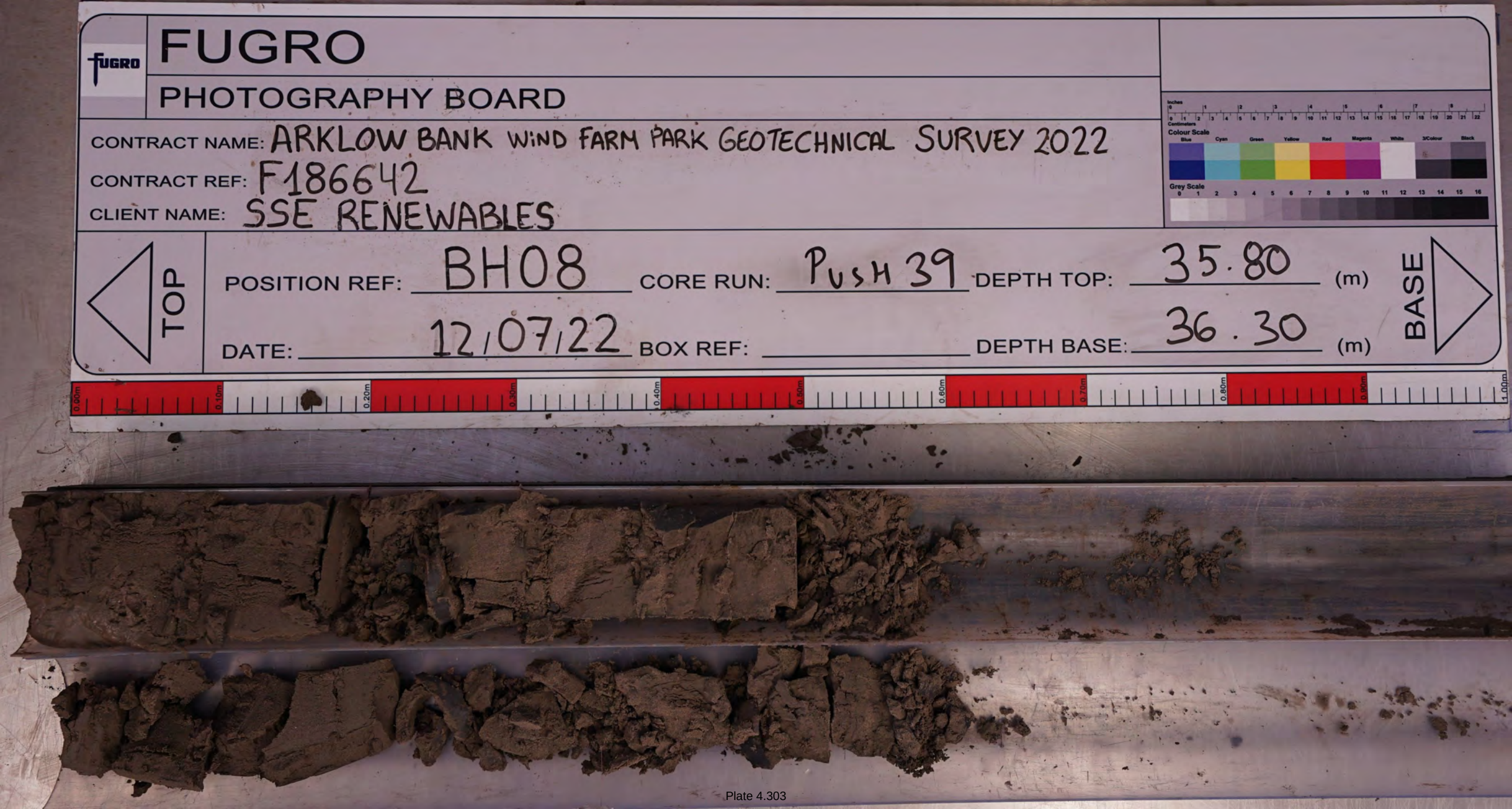
CR5

34.80m

35.80m

Plate 4.301


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 39
DEPTH TOP: 35.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 36.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 39
DEPTH TOP: 35.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 36.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.303

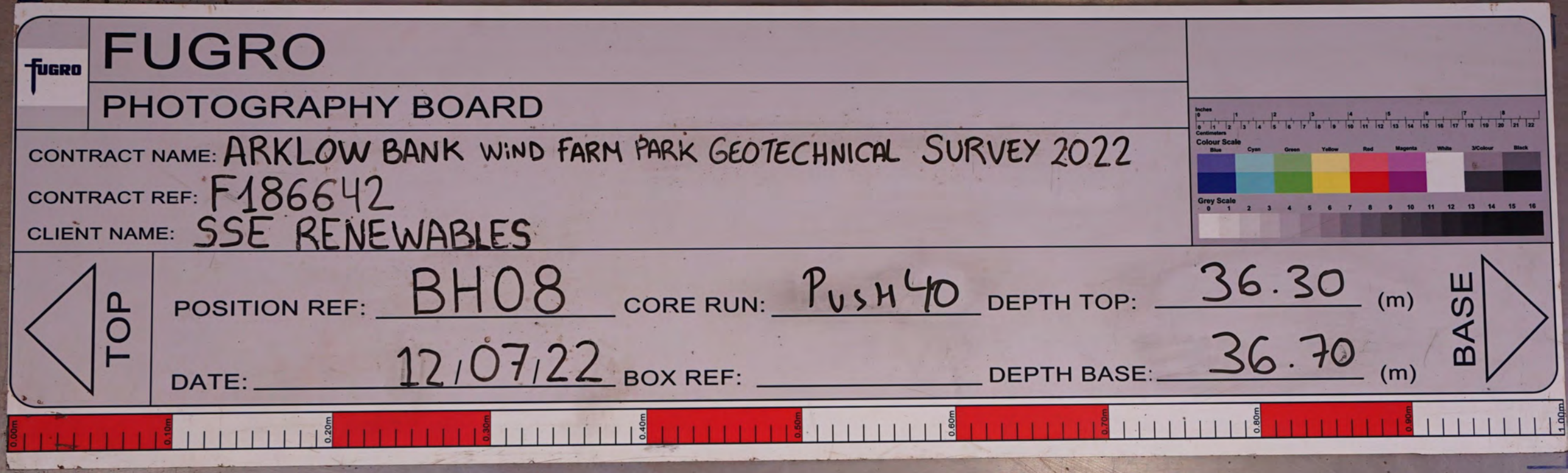
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH40
DEPTH TOP: 36.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 36.70 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.304

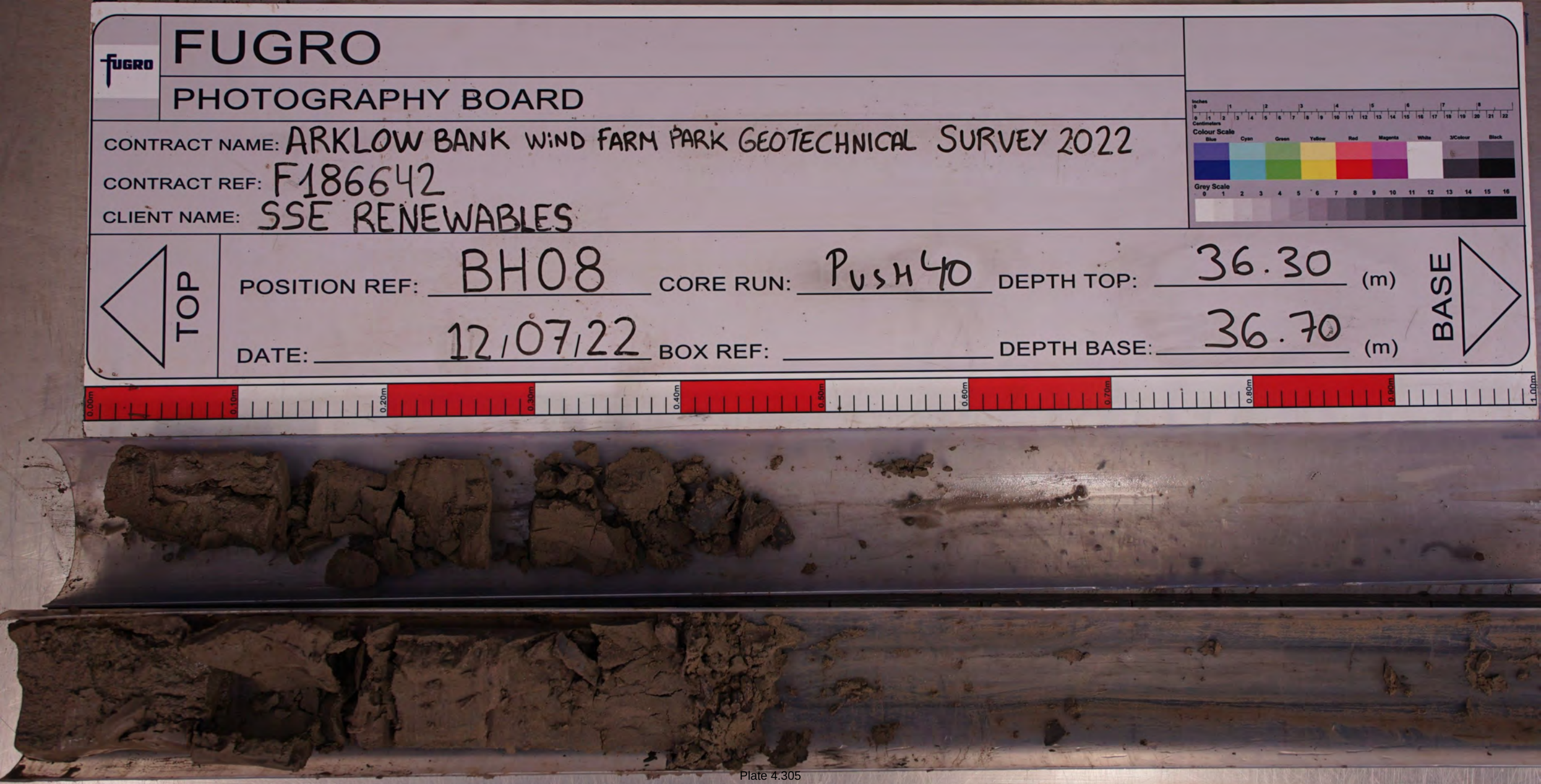
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH40
DEPTH TOP: 36.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 36.70 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.305

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 1 / 07 / 2022

CORE RUN: CR6

BOX REF: 6

DEPTH TOP: 36.80 (m)

DEPTH BASE: 38.30 (m)

BASE

CR6

36.80 m

38.30m

Plate 4.306

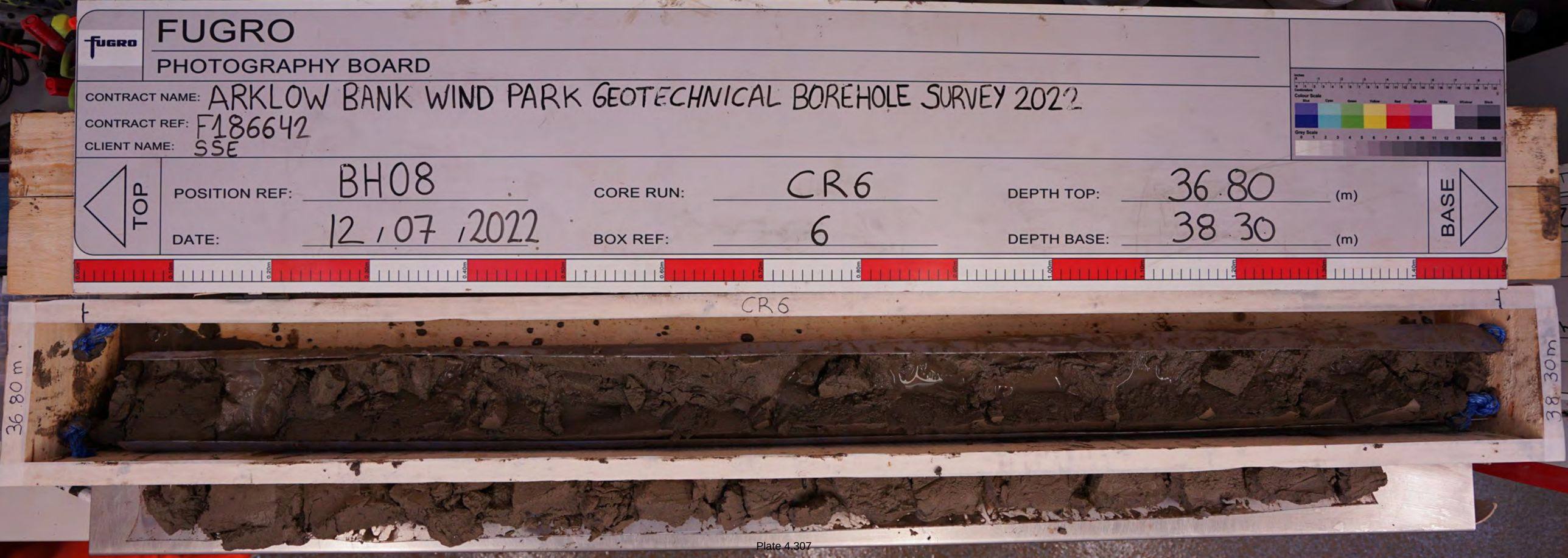
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR6
DEPTH TOP: 36.80 (m)
DATE: 12/07/2022
BOX REF: 6
DEPTH BASE: 38.30 (m)
BASE
CR6
36.80m
38.30m

Plate 4.307

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR7

BOX REF: 7

DEPTH TOP: 38.30 (m)

DEPTH BASE: 39.80 (m)

BASE



Plate 4.308

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR7

BOX REF: 7

DEPTH TOP: 38.30 (m)

DEPTH BASE: 39.80 (m)

BASE



FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR8

BOX REF: 8

DEPTH TOP: 39.80 (m)

DEPTH BASE: 40.80 (m)

BASE

CR8 + (40.10m) AZCL

39.80m

40.80m

Plate 4.310

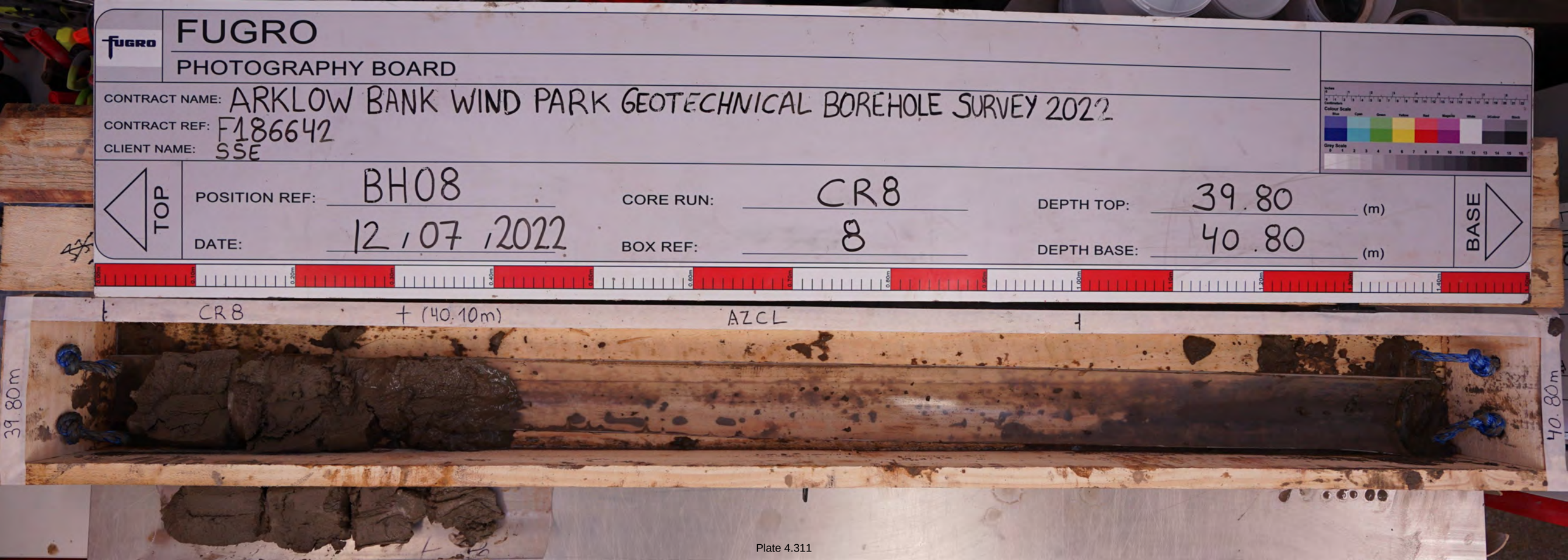

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR8
DEPTH TOP: 39.80 (m)
DATE: 12/07/2022
BOX REF: 8
DEPTH BASE: 40.80 (m)
BASE
CR8
+ (40.10m)
AZCL
39.80m
40.80m

Plate 4.311

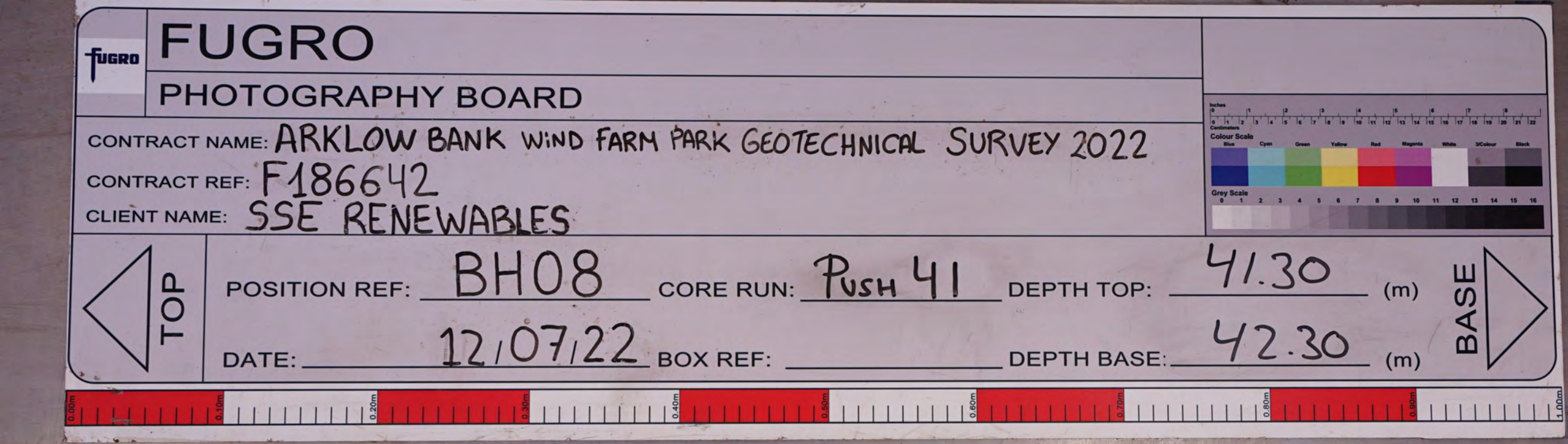

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 41
DEPTH TOP: 41.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 42.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.312

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 41 DEPTH TOP: 41.30 (m)

DATE: 12/07/22 BOX REF: DEPTH BASE: 42.30 (m)

BASE



Plate 4.313

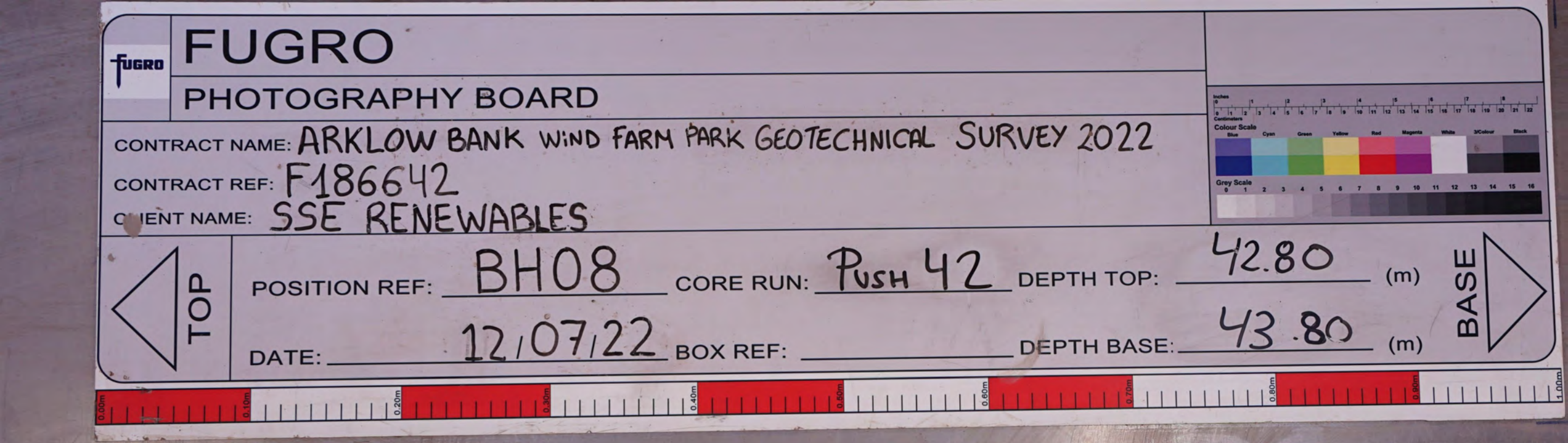

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 42
DEPTH TOP: 42.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 43.80 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.314


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 42
DEPTH TOP: 42.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 43.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.315

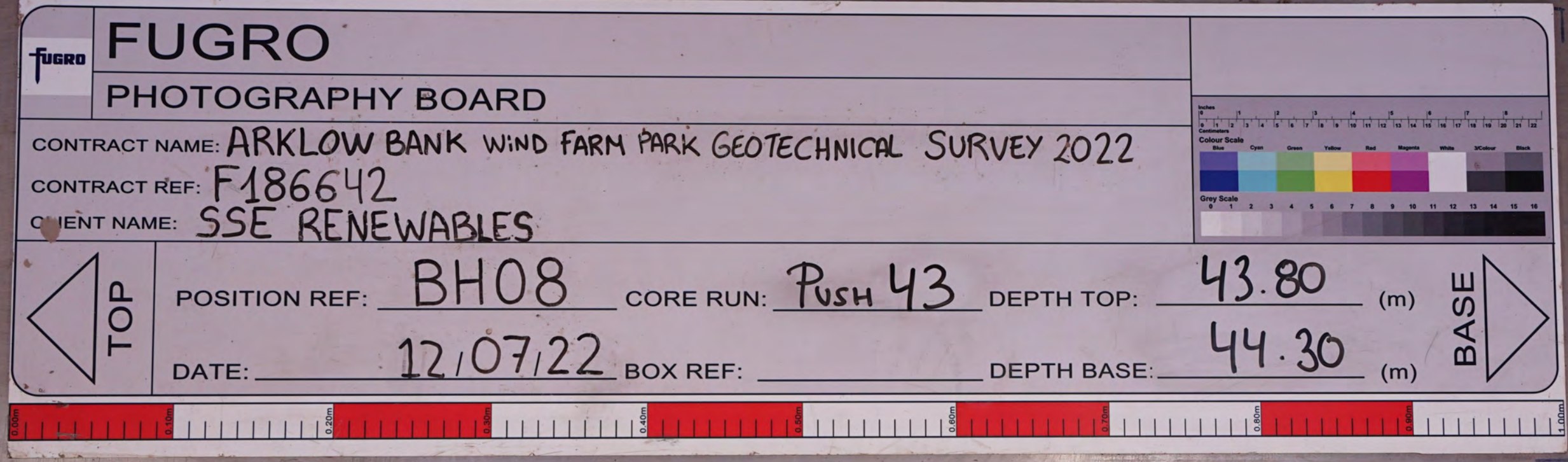

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 43
DEPTH TOP: 43.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 44.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.316

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 43 DEPTH TOP: 43.80 (m)

DATE: 12/07/22 BOX REF: DEPTH BASE: 44.30 (m)

BASE

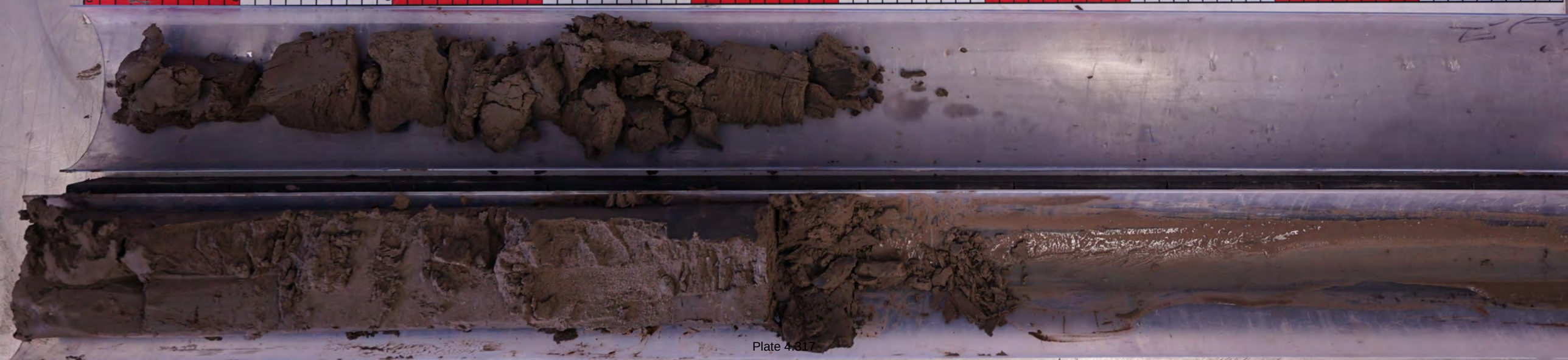
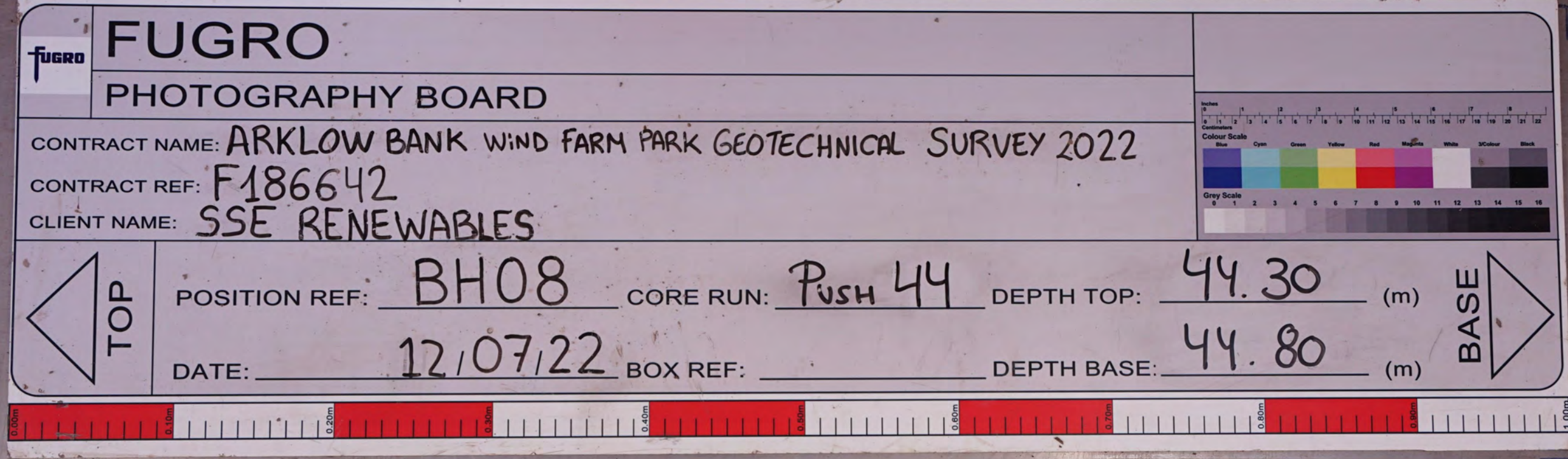


Plate 4.317


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 44
DEPTH TOP: 44.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 44.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 44 DEPTH TOP: 44.30 (m)

DATE: 12/07/22 BOX REF: _____ DEPTH BASE: 44.80 (m)

BASE



Plate 4.319

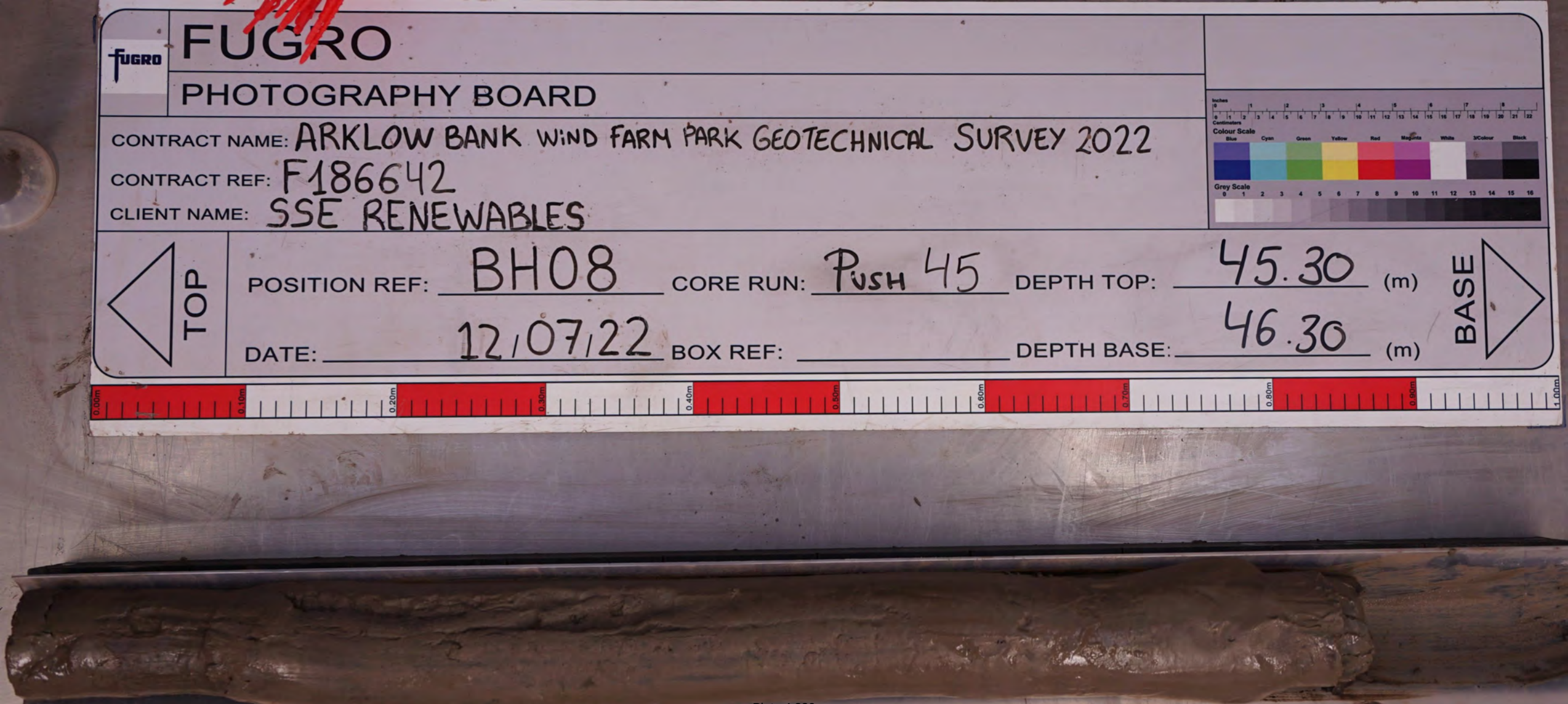

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 45
DEPTH TOP: 45.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 46.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.320

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 45 DEPTH TOP: 45.30 (m)

DATE: 12/07/22 BOX REF: DEPTH BASE: 46.30 (m)

BASE

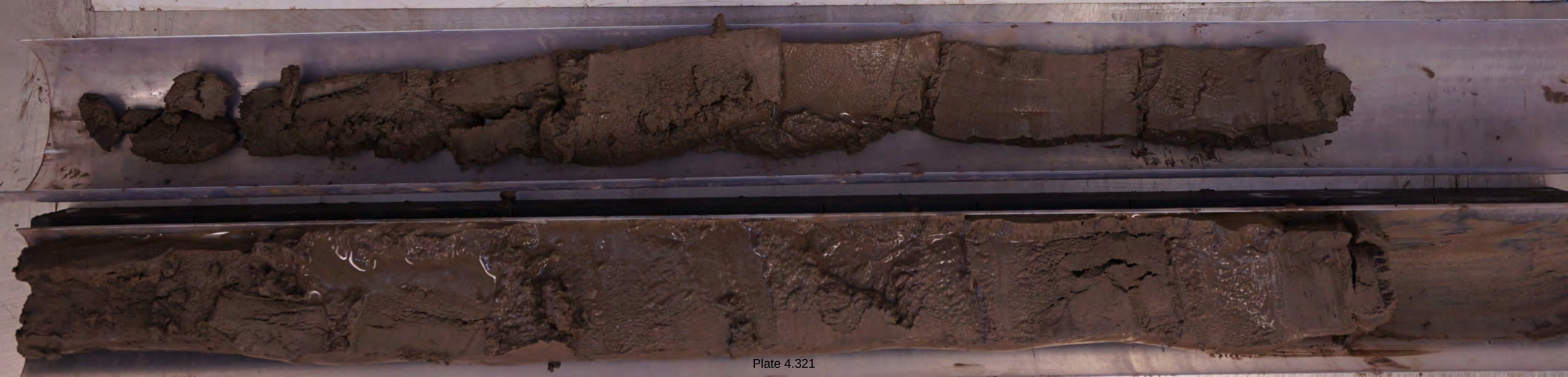


Plate 4.321

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: PUSH 46 DEPTH TOP: 46.80 (m)

DATE: 12/07/22 BOX REF: DEPTH BASE: 47.30 (m)

BASE



Plate 4.322


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: PUSH 46
DEPTH TOP: 46.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 47.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.323

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH08 CORE RUN: Push 47 DEPTH TOP: 47.80 (m)

DATE: 12/07/22 BOX REF: DEPTH BASE: 48.30 (m)

BASE



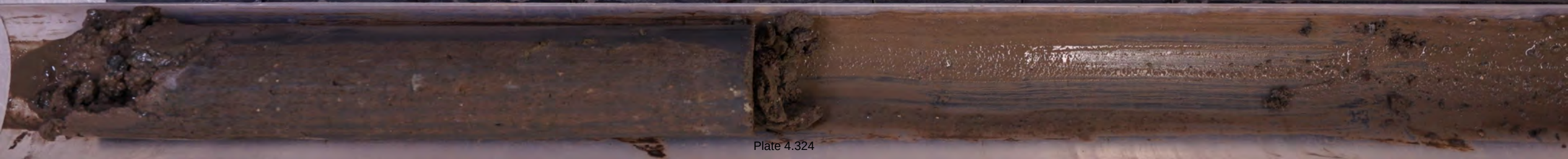


Plate 4.324

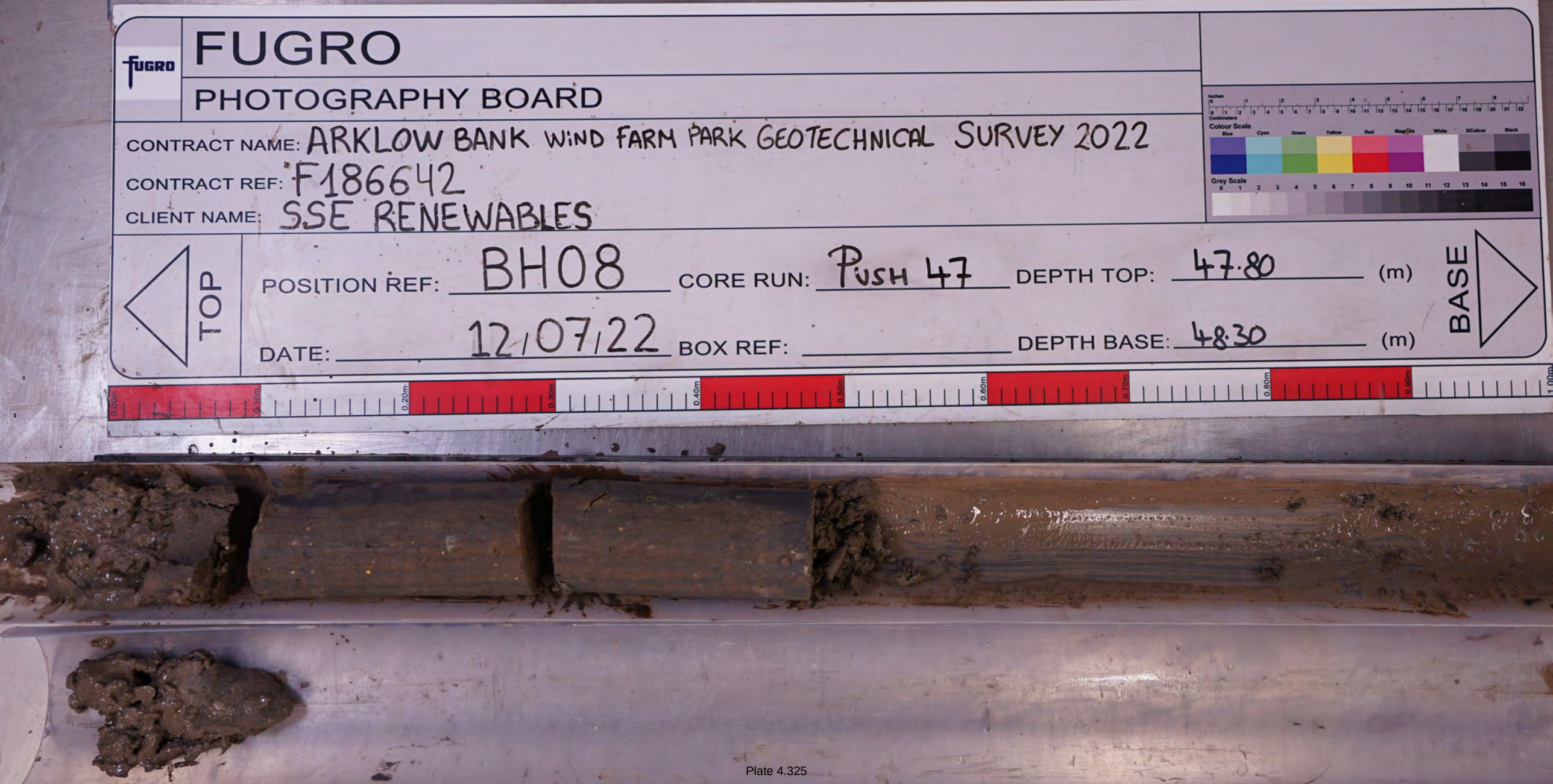

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 47
DEPTH TOP: 47.80 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 48.30 (m)
BASE
Colour Scale
Grey Scale

Plate 4.325

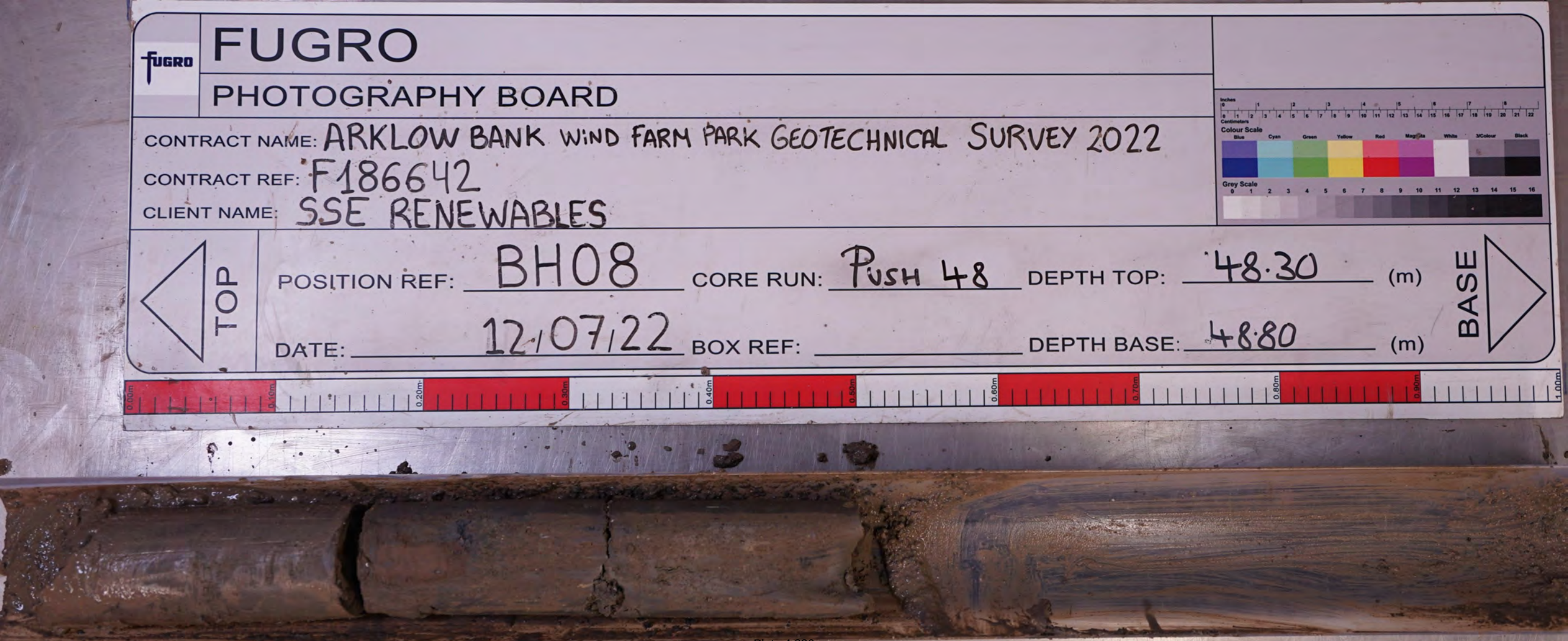

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 48
DEPTH TOP: 48.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 48.80 (m)
BASE
Colour Scale
Grey Scale

Plate 4.326


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH08
CORE RUN: Push 48
DEPTH TOP: 48.30 (m)
DATE: 12/07/22
BOX REF:
DEPTH BASE: 48.80 (m)
BASE

Plate 4.327

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 12/07/2022

CORE RUN: CR10

BOX REF: Box 10

DEPTH TOP: 48.80 (m)

DEPTH BASE: 49.80 (m)

BASE

AZCL +(49.06m) CR10

48.80m

49.80m

Plate 4.328

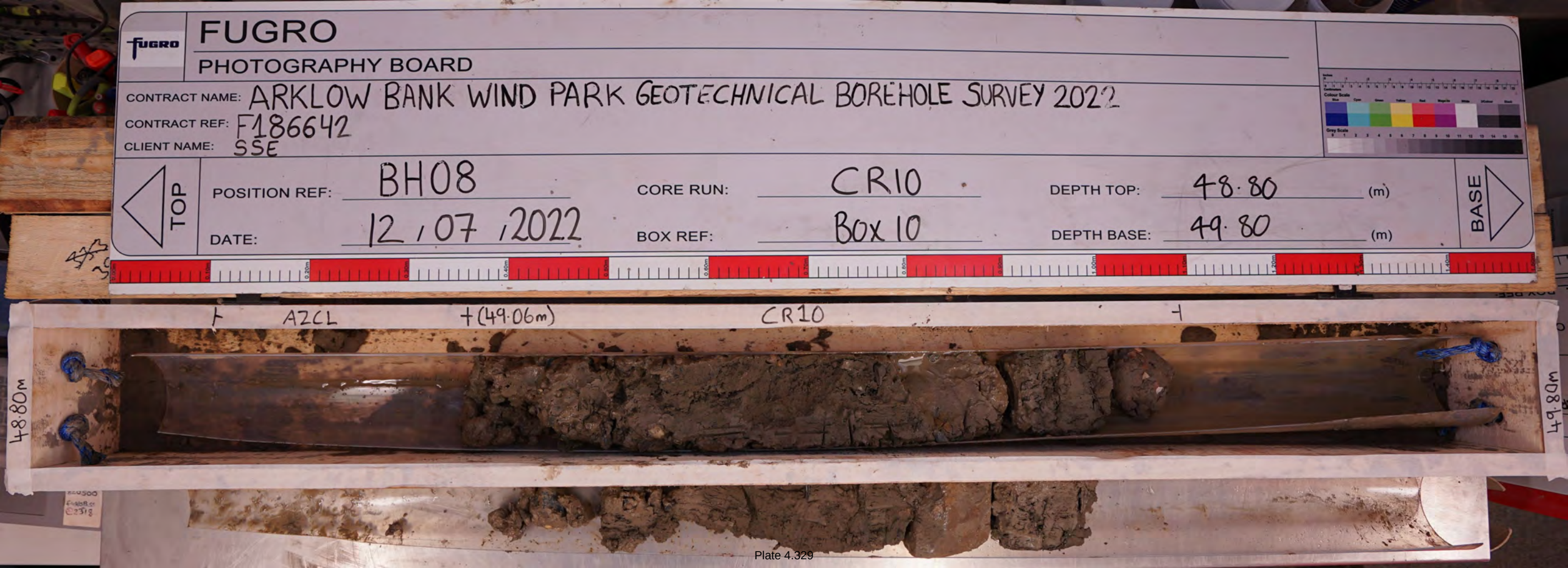

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR10
BOX REF: Box 10
DEPTH TOP: 48.80 (m)
DEPTH BASE: 49.80 (m)
BASE
AZCL
+(49.06m)
CR10
48.80m
49.80m

Plate 4.329

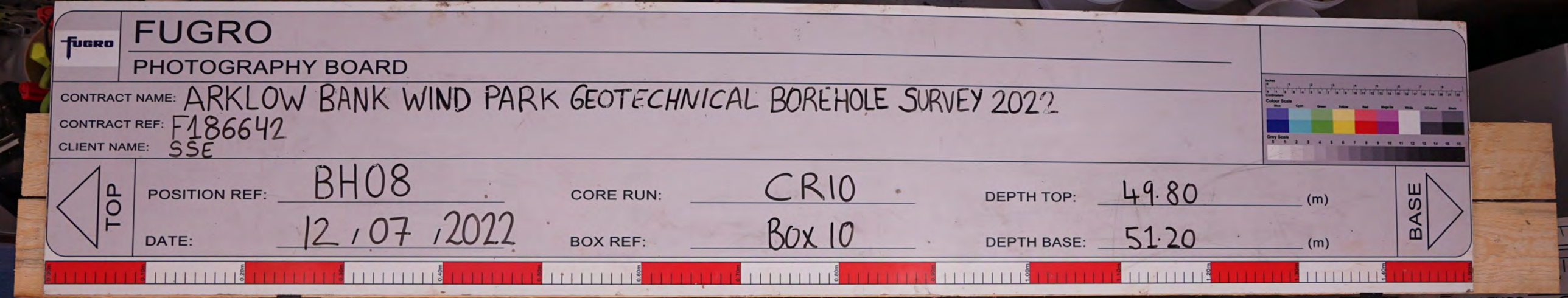

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR10
BOX REF: Box 10
DEPTH TOP: 49.80 (m)
DEPTH BASE: 51.20 (m)
BASE
A2CL
(50.48m)
CR10
49.80m
51.20m

Plate 4.330

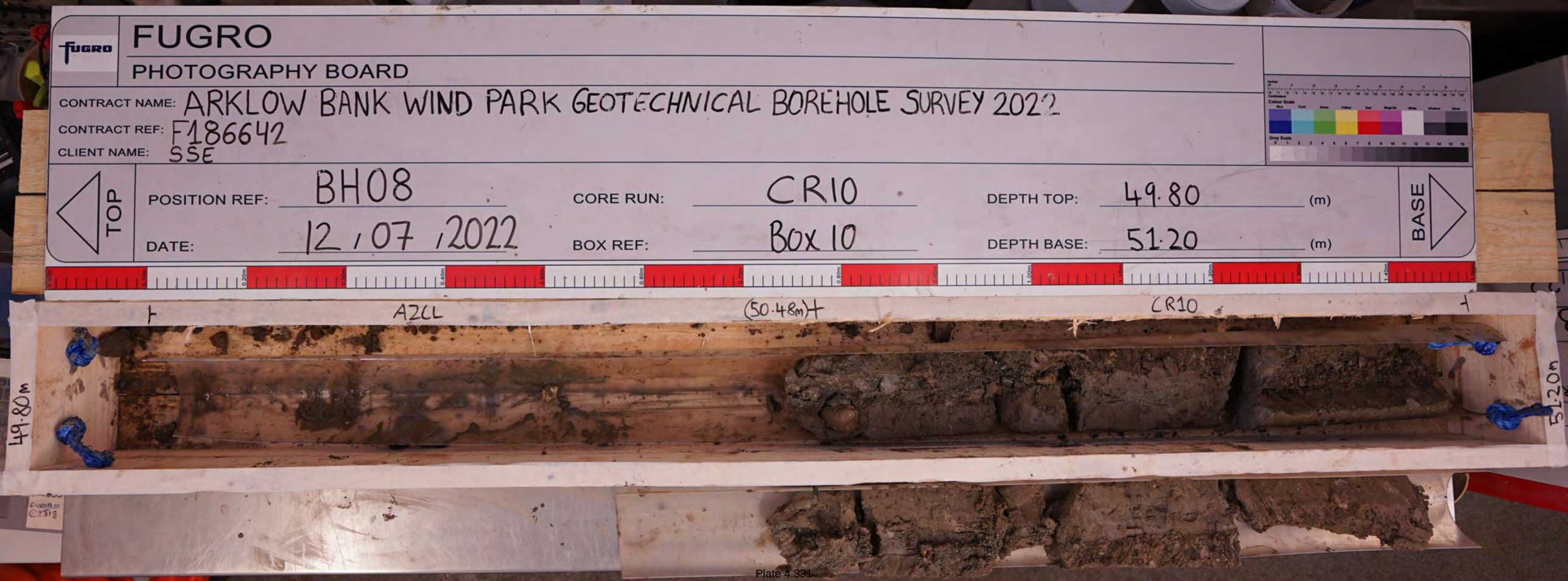

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR10
BOX REF: Box 10
DEPTH TOP: 49.80 (m)
DEPTH BASE: 51.20 (m)
BASE
A2CL
(50.48m)
CR10
49.80m
51.20m

Plate 4.331

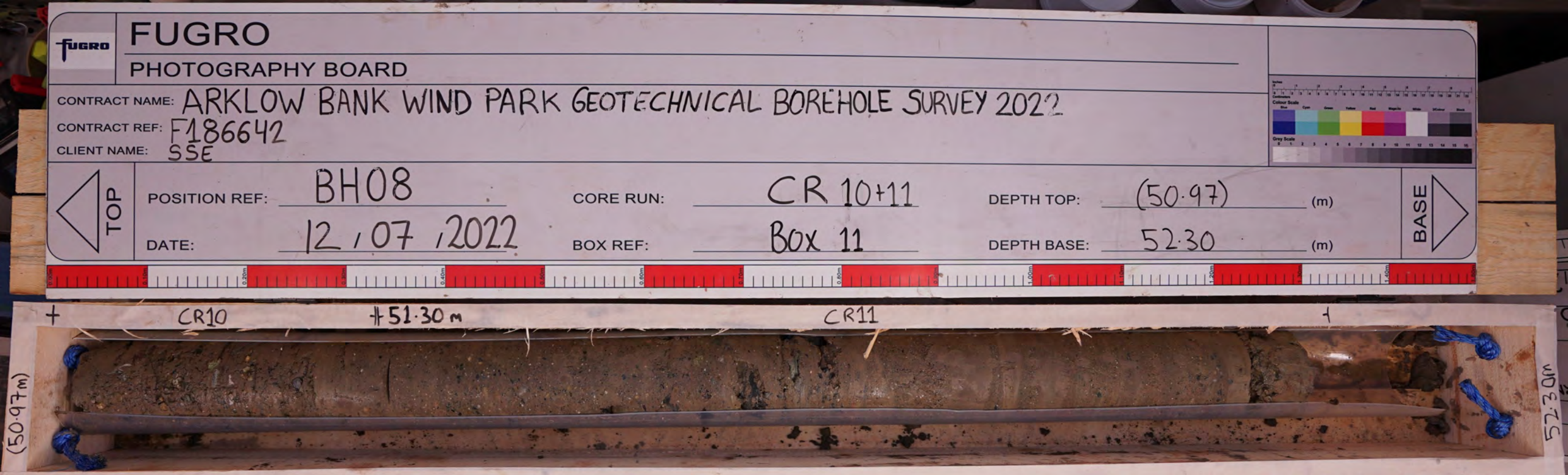

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR 10+11
BOX REF: Box 11
DEPTH TOP: (50.97) (m)
DEPTH BASE: 52.30 (m)
BASE
CR10
51.30 m
CR11
(50.97m)
52.30m

Plate 4.332

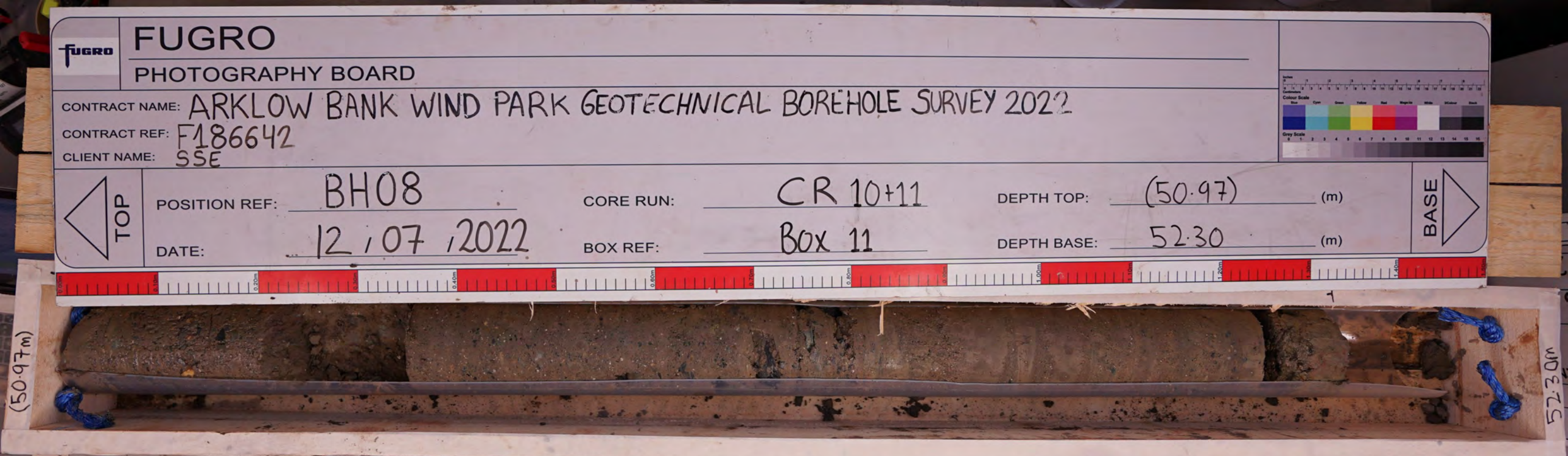
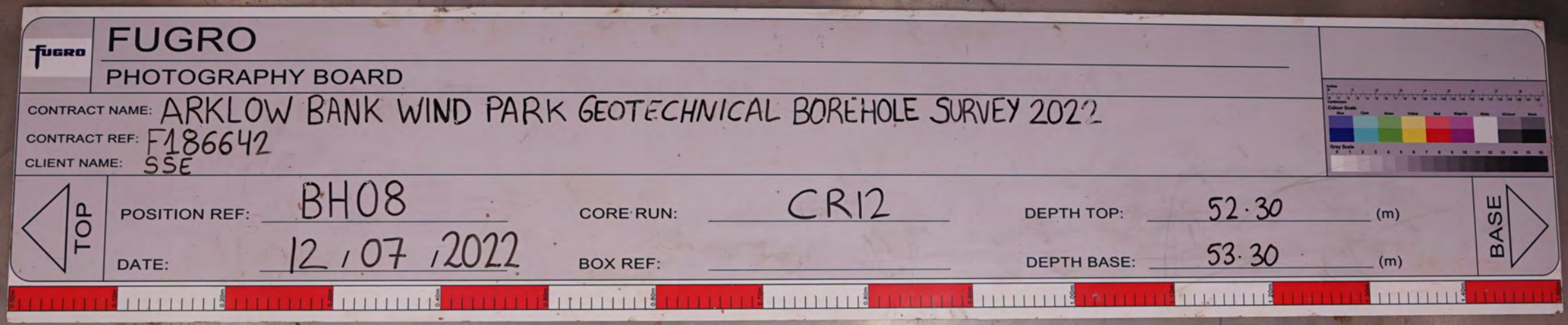

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
DATE: 12/07/2022
CORE RUN: CR 10+11
BOX REF: Box 11
DEPTH TOP: (50.97) (m)
DEPTH BASE: 52.30 (m)
BASE
(50.97m)
52.30m

Plate 4.333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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR12
DEPTH TOP: 52.30 (m)
DATE: 12/07/2022
BOX REF:
DEPTH BASE: 53.30 (m)
BASE
NO RECOVERY

Plate 4.334

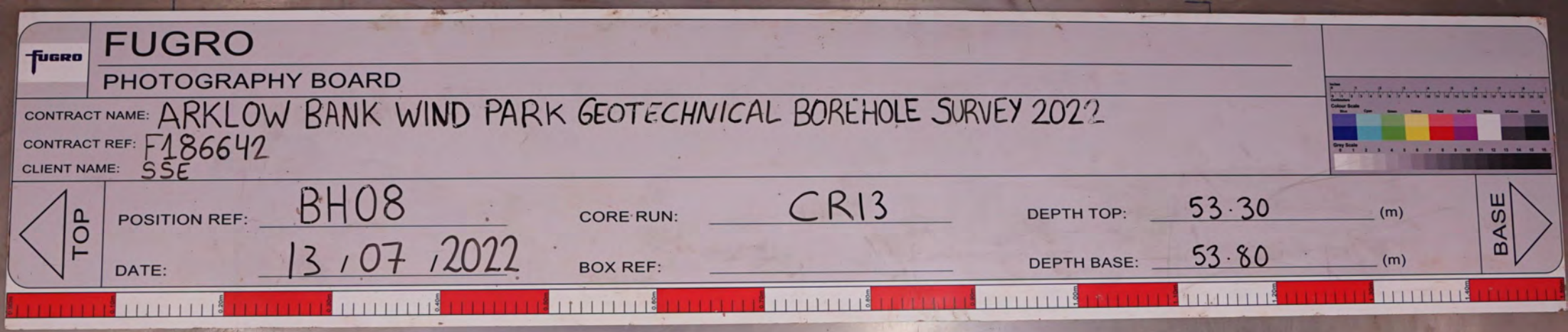

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH08
CORE RUN: CR13
DEPTH TOP: 53.30 (m)
DATE: 13/07/2022
BOX REF:
DEPTH BASE: 53.80 (m)
BASE
NO RECOVERY

Plate 4.335

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

CORE RUN: CR14

DEPTH TOP: 53.80 (m)

DATE: 13/07/2022

BOX REF:

DEPTH BASE: 54.80 (m)

BASE

NO RECOVERY

Plate 4.336

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 13/07/2022

CORE RUN: CR 15

BOX REF: 12

DEPTH TOP: 54.80 (m)

DEPTH BASE: 56.30 (m)

BASE



Plate 4.337

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH08

DATE: 13/07/2022

CORE RUN: CR16

BOX REF: 16

DEPTH TOP: 56.30 (m)

DEPTH BASE: 57.80 (m)

BASE

AZCL (57.00m) CR16

56.30m

57.80m

Plate 4.338

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 09 CORE RUN: PUSH 01 DEPTH TOP: 0.00 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 1.00 (m)

BASE

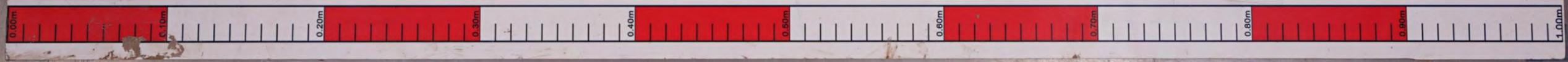
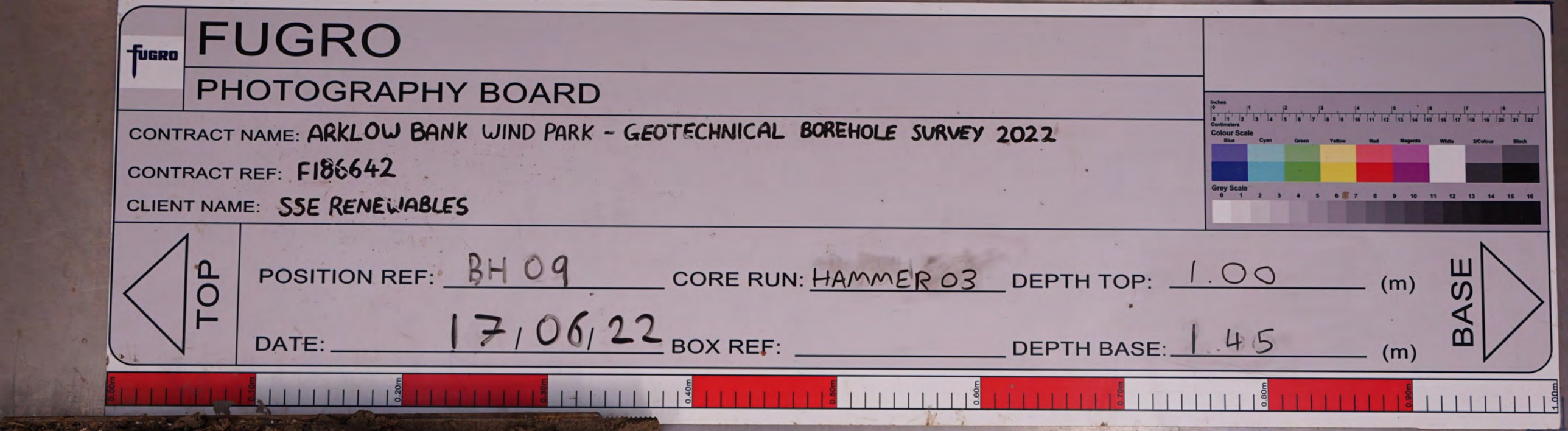


Plate 4.339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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: HAMMER 03
DEPTH TOP: 1.00 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 1.45 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.340

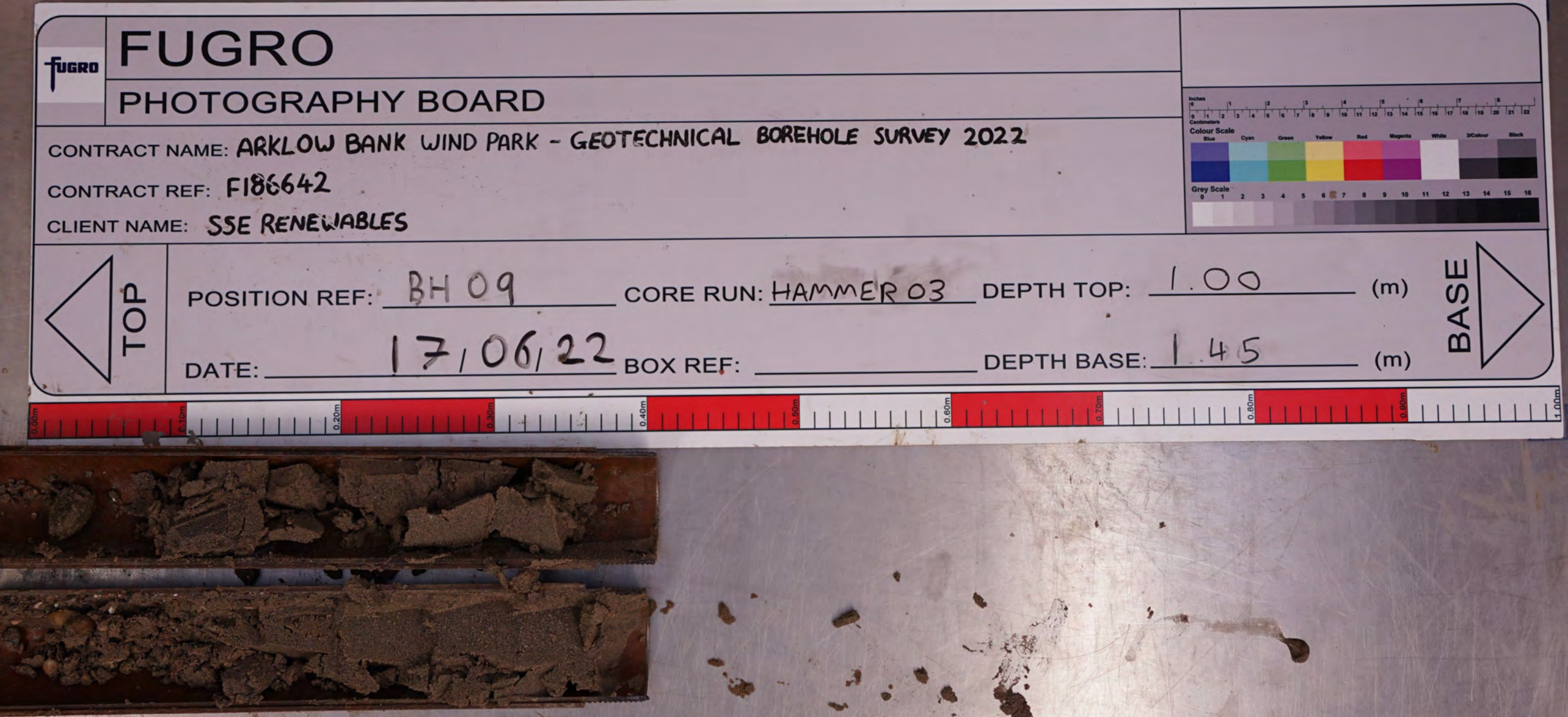
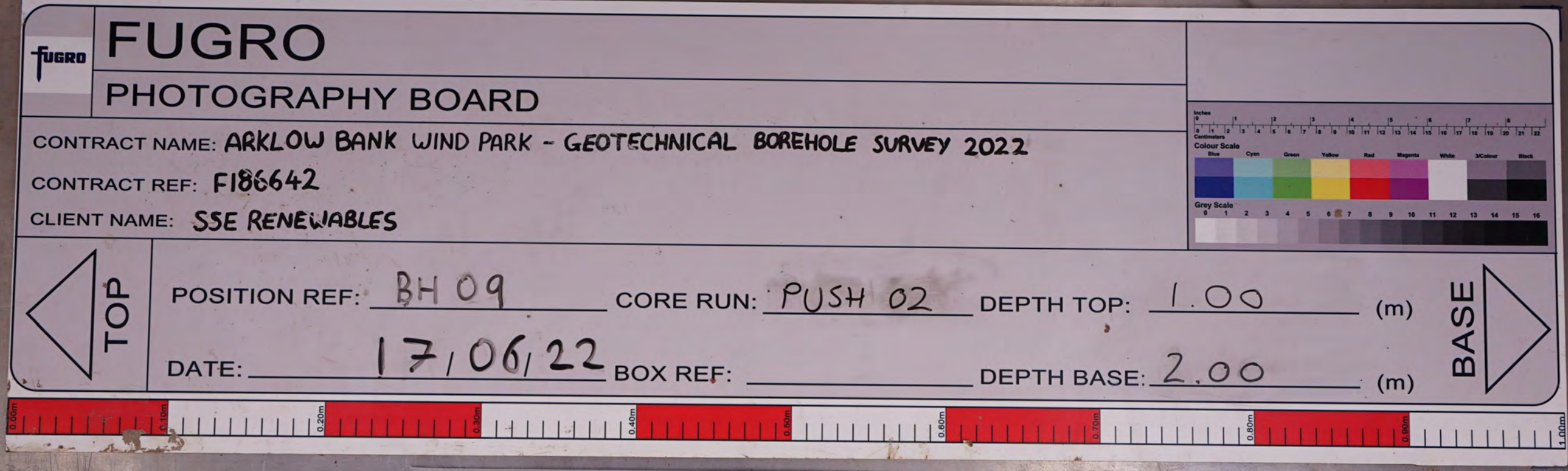

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: HAMMER 03
DEPTH TOP: 1.00 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 1.45 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.341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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 02
DEPTH TOP: 1.00 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 2.00 (m)
BASE
NO RECOVERY

Plate 4.342

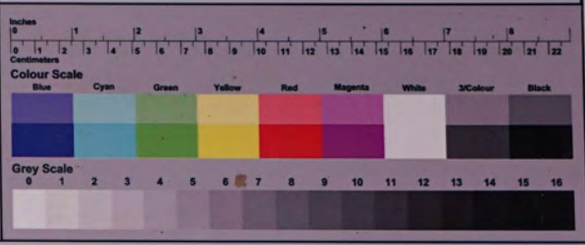
FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES



TOP

POSITION REF: BH09 CORE RUN: PUSH 04 DEPTH TOP: 2.50 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 3.50 (m)

BASE

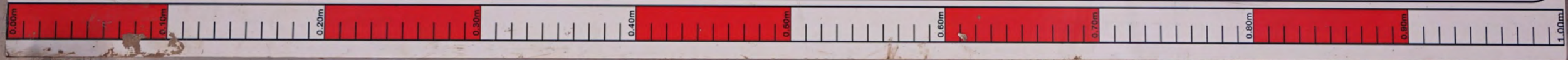


Plate 4.343

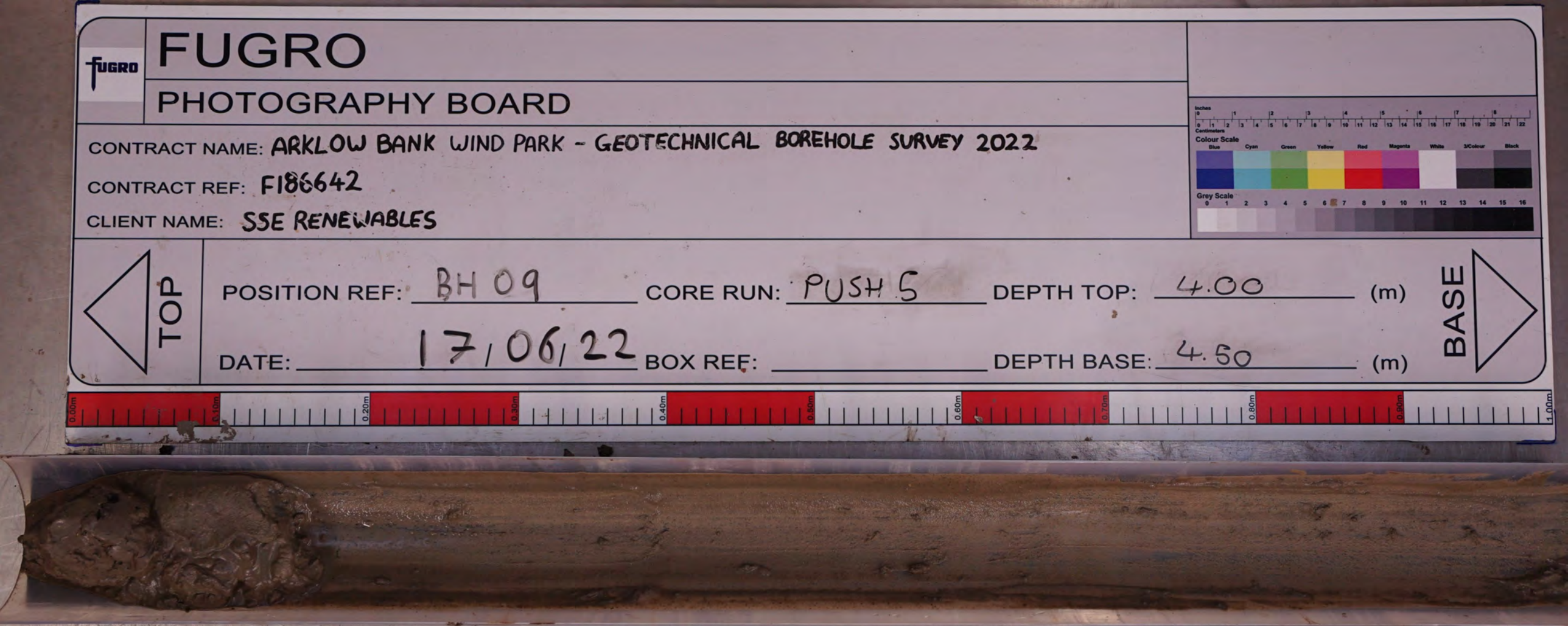

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 5
DEPTH TOP: 4.00 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.344

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: FI86642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 6 DEPTH TOP: 5.00 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 5.50 (m)

BASE

NO RECOVERY

Plate 4.345

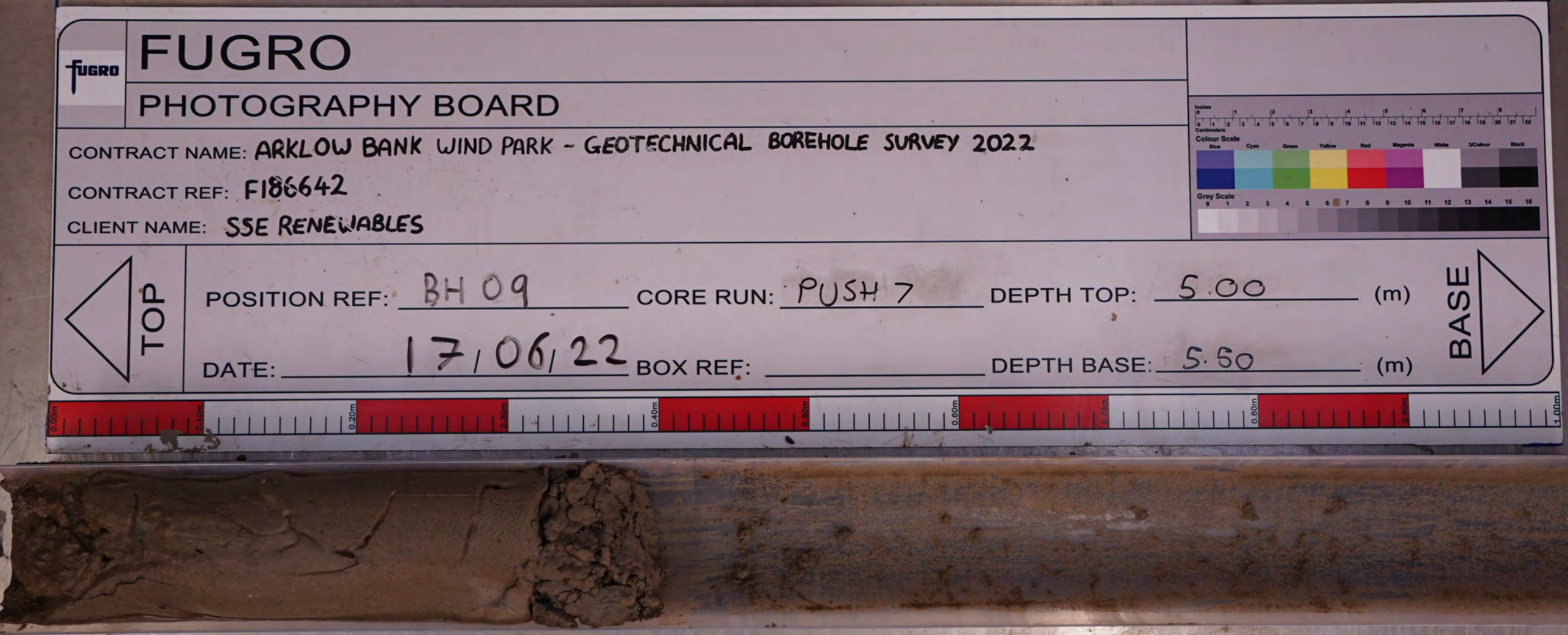

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 7
DEPTH TOP: 5.00 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 5.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.346

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 7 DEPTH TOP: 5.00 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 5.50 (m)

BASE

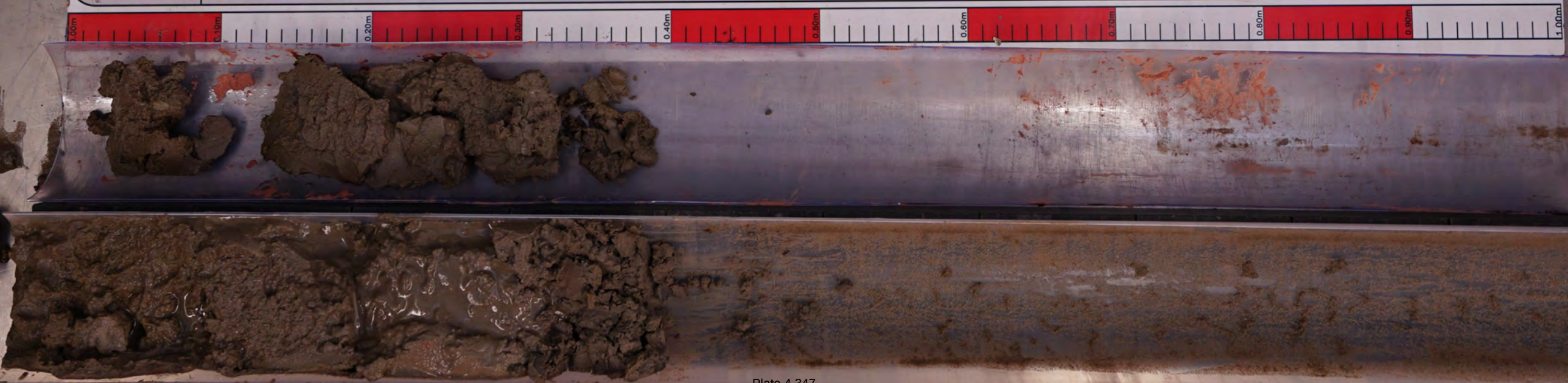


Plate 4.347

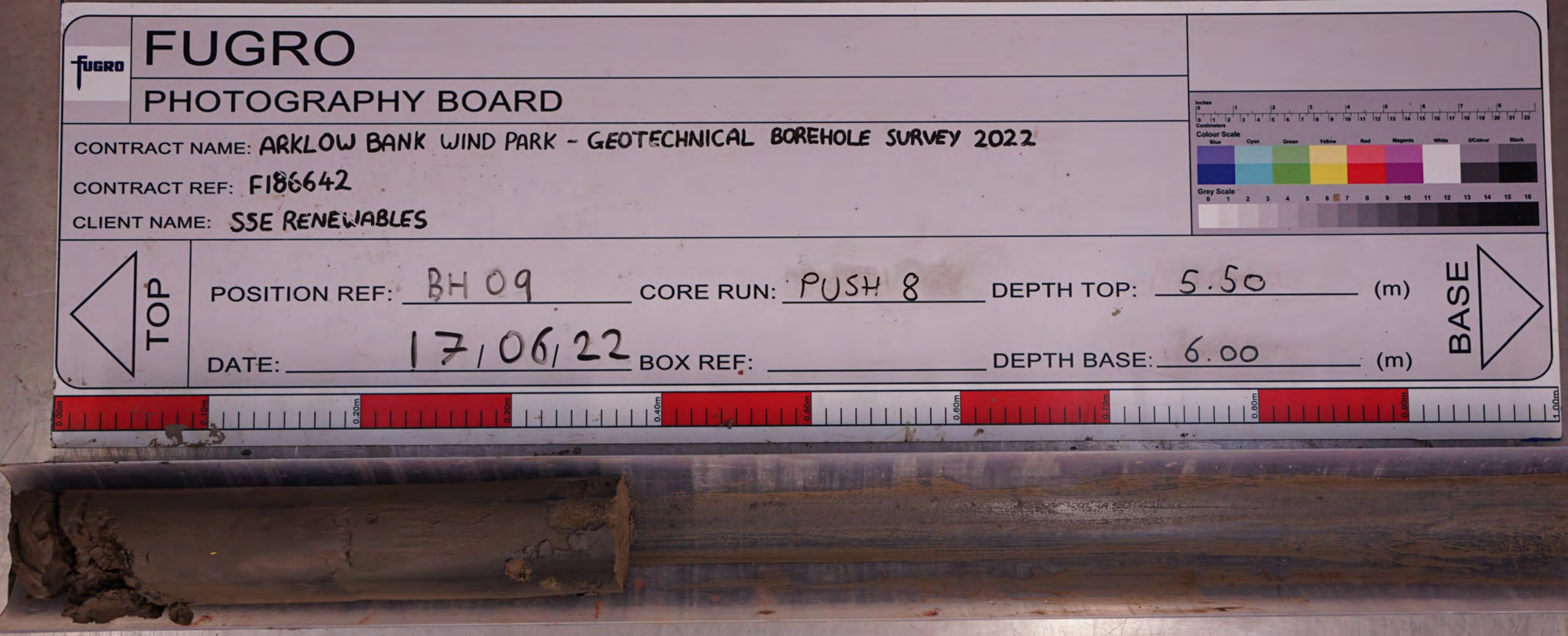
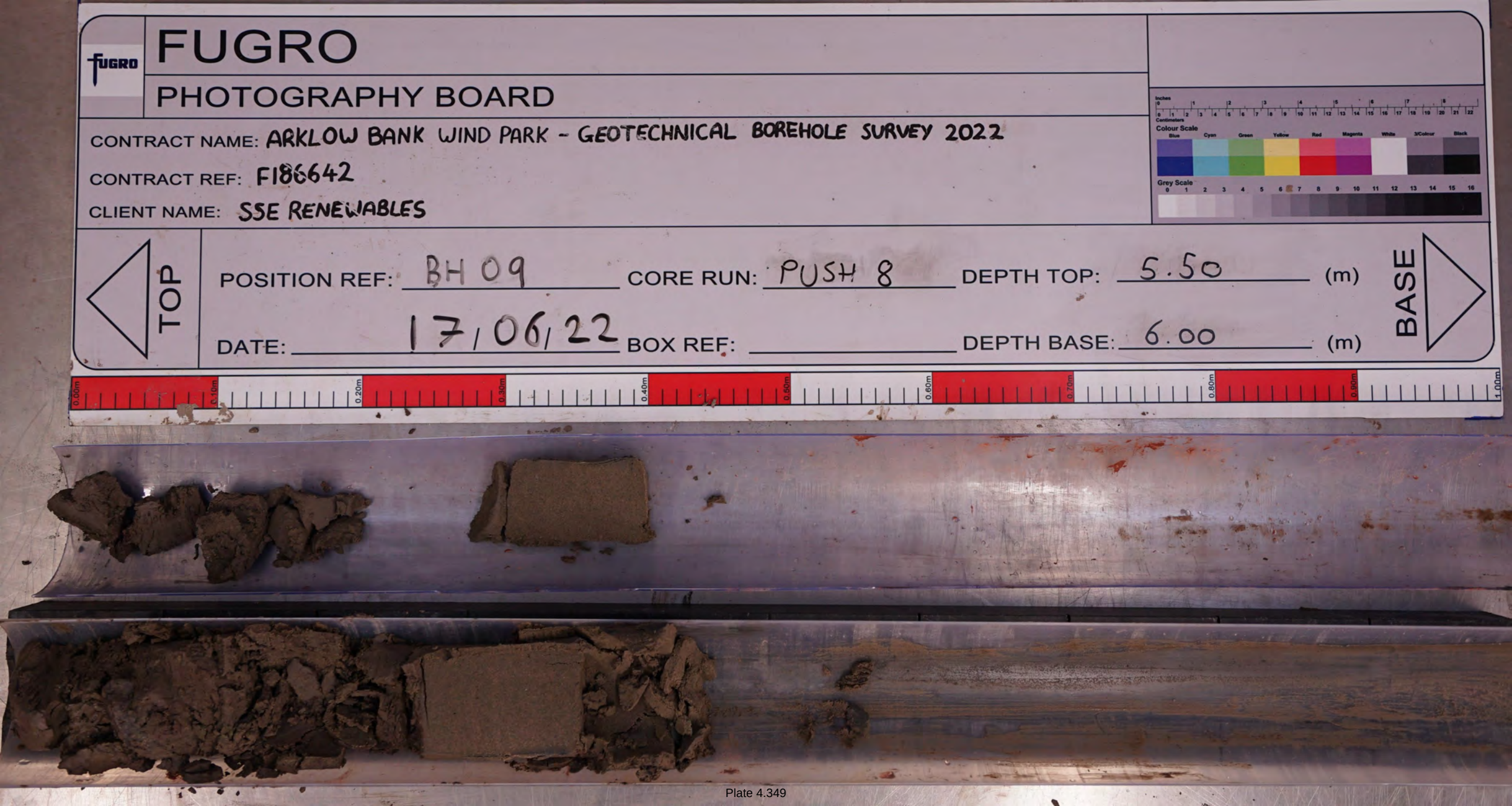

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 8
DEPTH TOP: 5.50 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 6.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.348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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 8
DEPTH TOP: 5.50 (m)
DATE: 17/06/22
BOX REF:
DEPTH BASE: 6.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.349

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 9 DEPTH TOP: 6.50 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 7.00 (m)

BASE



Plate 4.350

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 9 DEPTH TOP: 6.50 (m)

DATE: 17/06/22 BOX REF: DEPTH BASE: 7.00 (m)

BASE

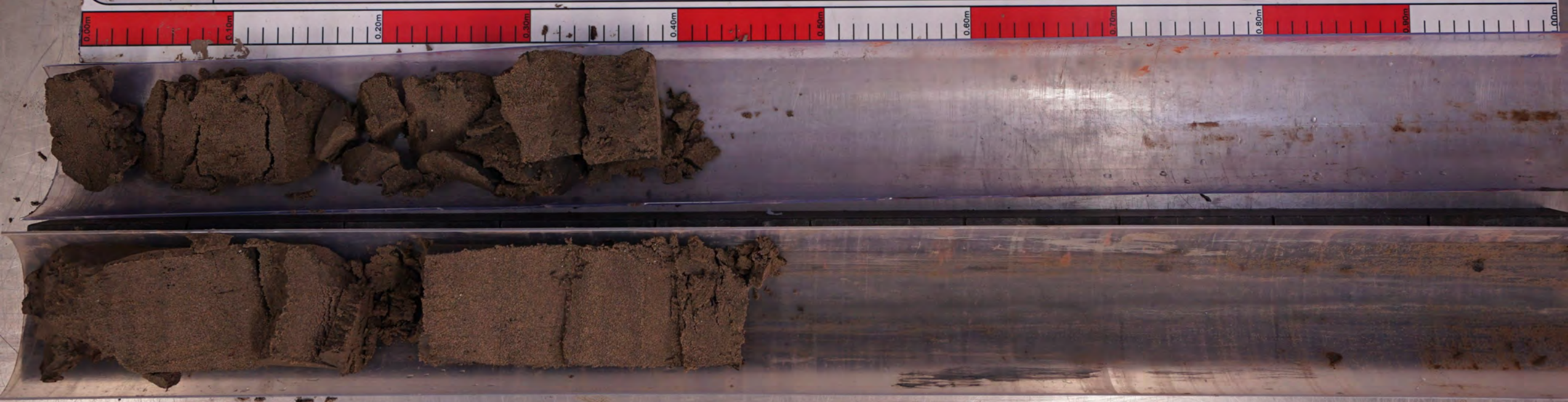


Plate 4.351

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 10 DEPTH TOP: 8.00 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 8.50 (m)

BASE





Plate 4.352


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 10
DEPTH TOP: 8.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 8.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.353

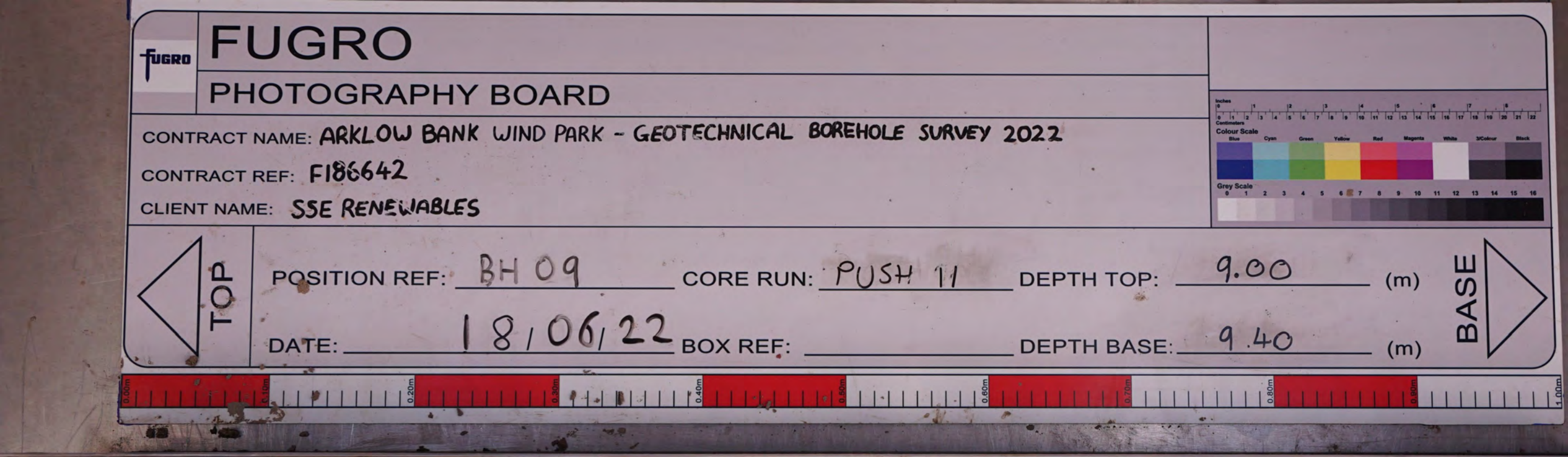
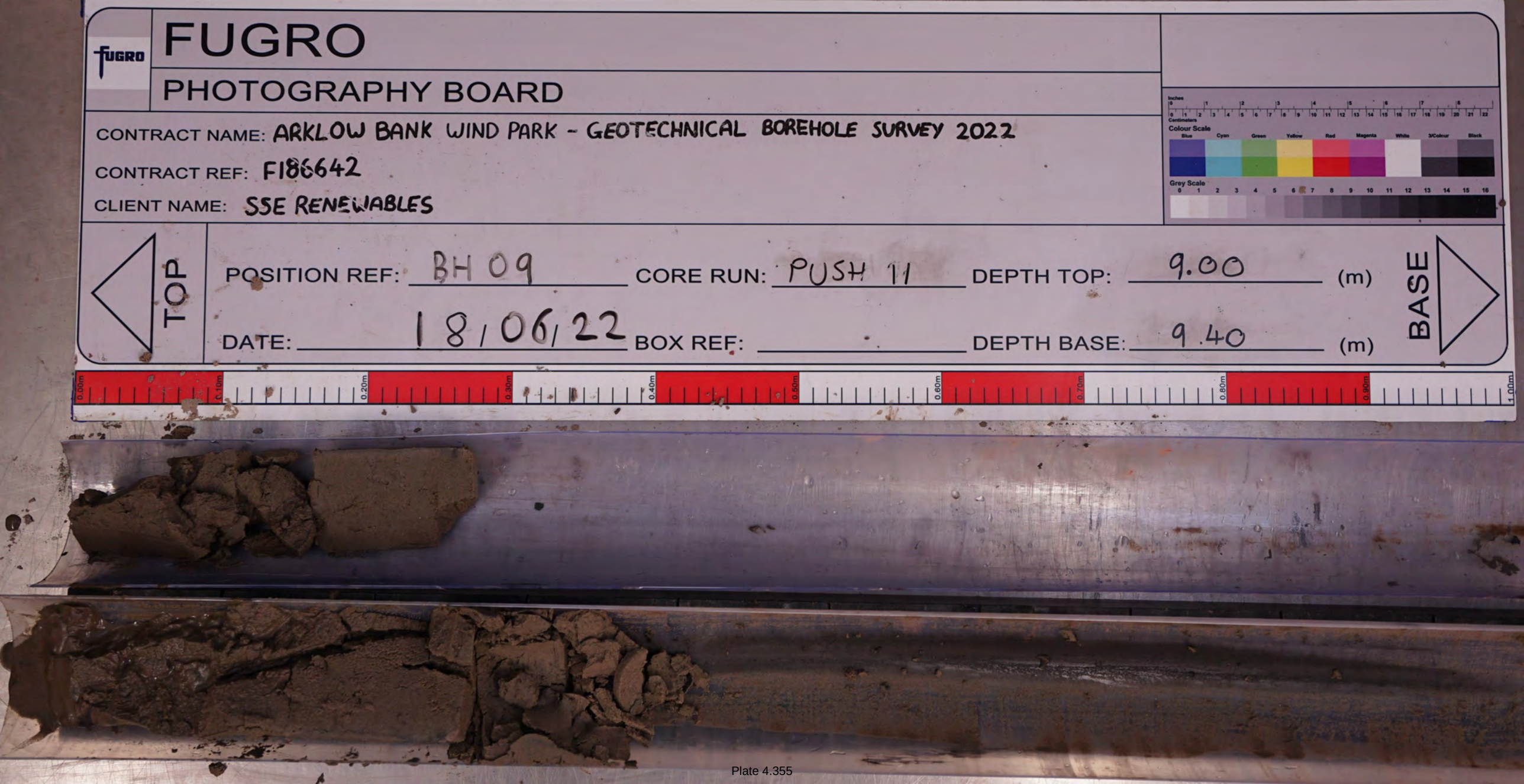

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 11
DEPTH TOP: 9.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 9.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.354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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 11
DEPTH TOP: 9.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 9.40 (m)
BASE
Colour Scale
Grey Scale

Plate 4.355

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 12 DEPTH TOP: 9.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 9.90 (m)

BASE



Plate 4.356

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 12 DEPTH TOP: 9.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 9.90 (m)

BASE

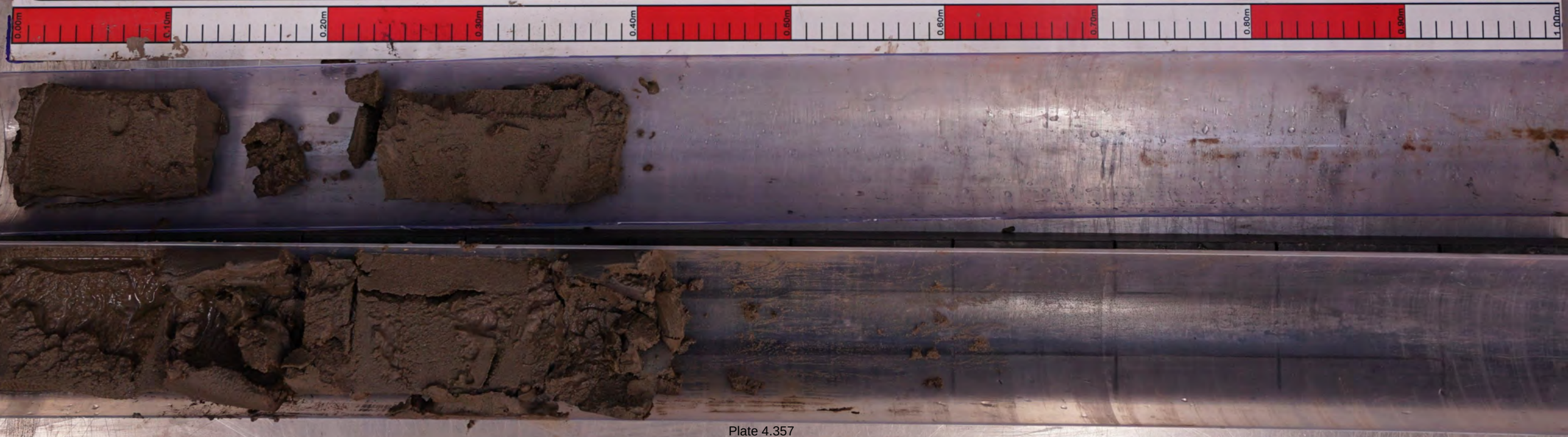


Plate 4.357

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 13 DEPTH TOP: 10.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 11.00 (m)

BASE

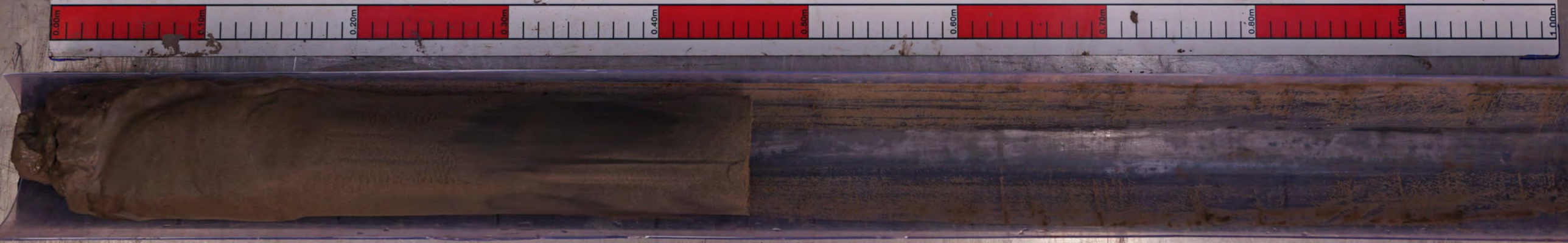
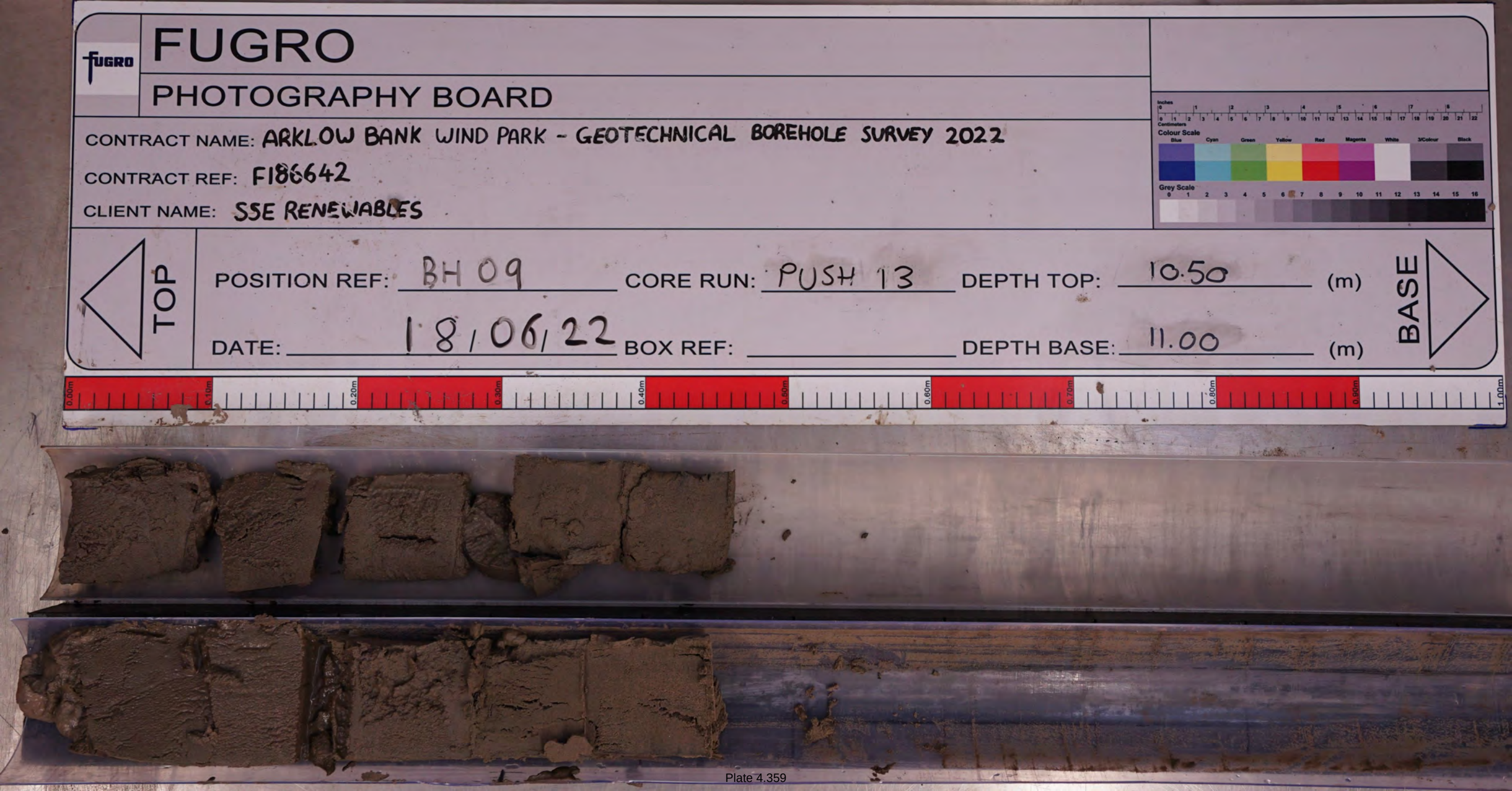


Plate 4.358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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 13
DEPTH TOP: 10.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.359

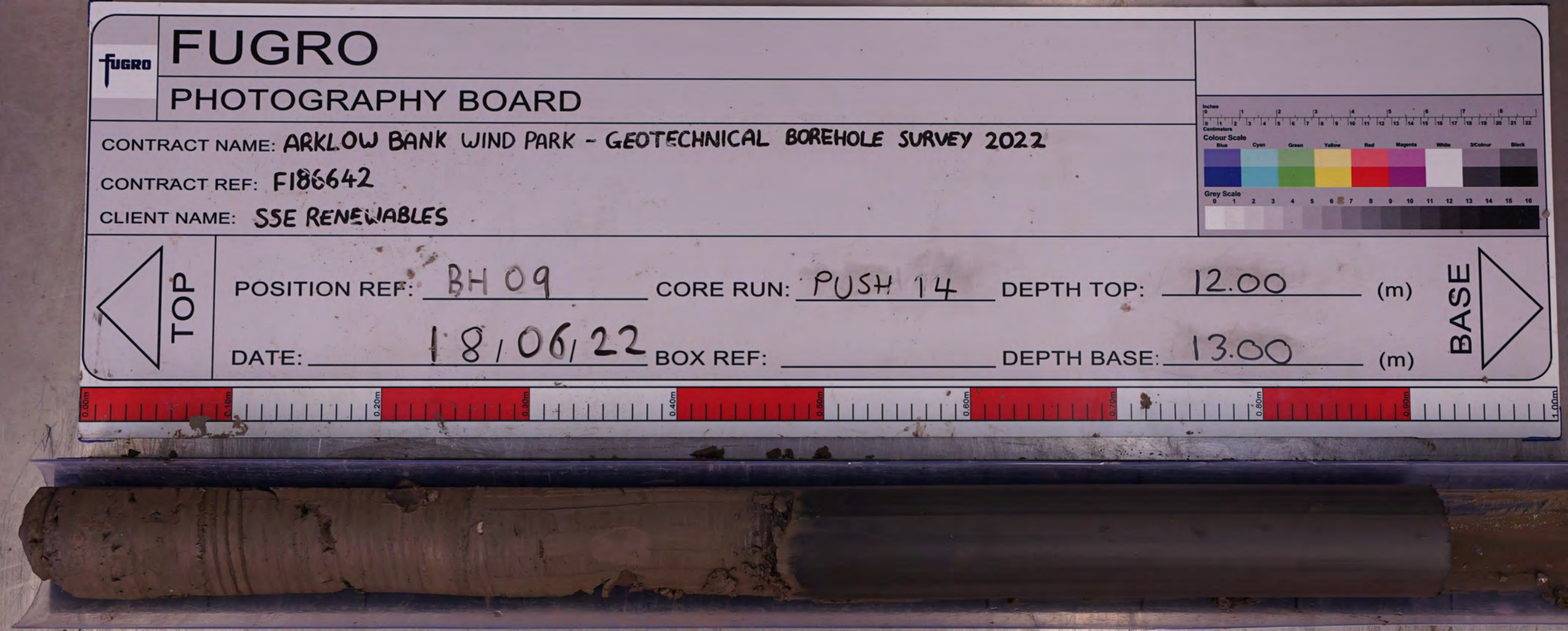

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 14
DEPTH TOP: 12.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 13.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.360

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 14 DEPTH TOP: 12.00 (m)

DATE: 18/06/22 BOX REF: _____ DEPTH BASE: 13.00 (m)

BASE



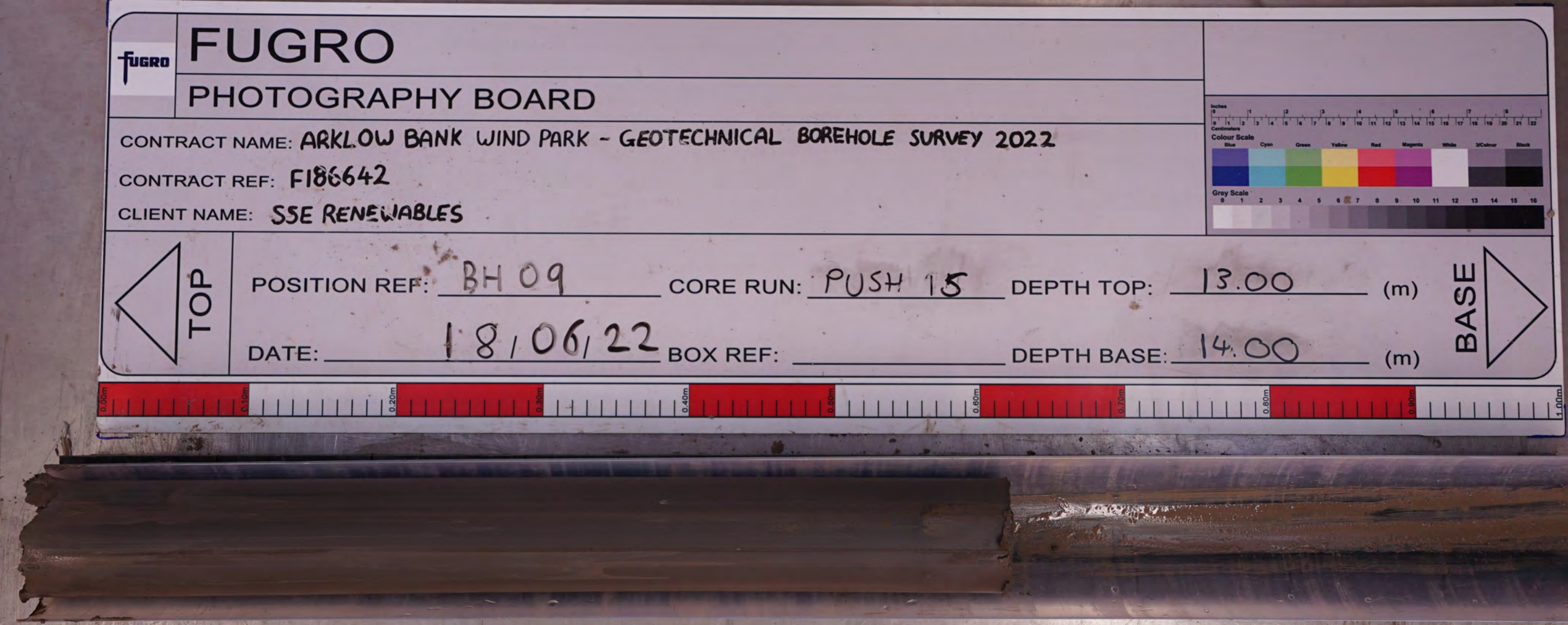
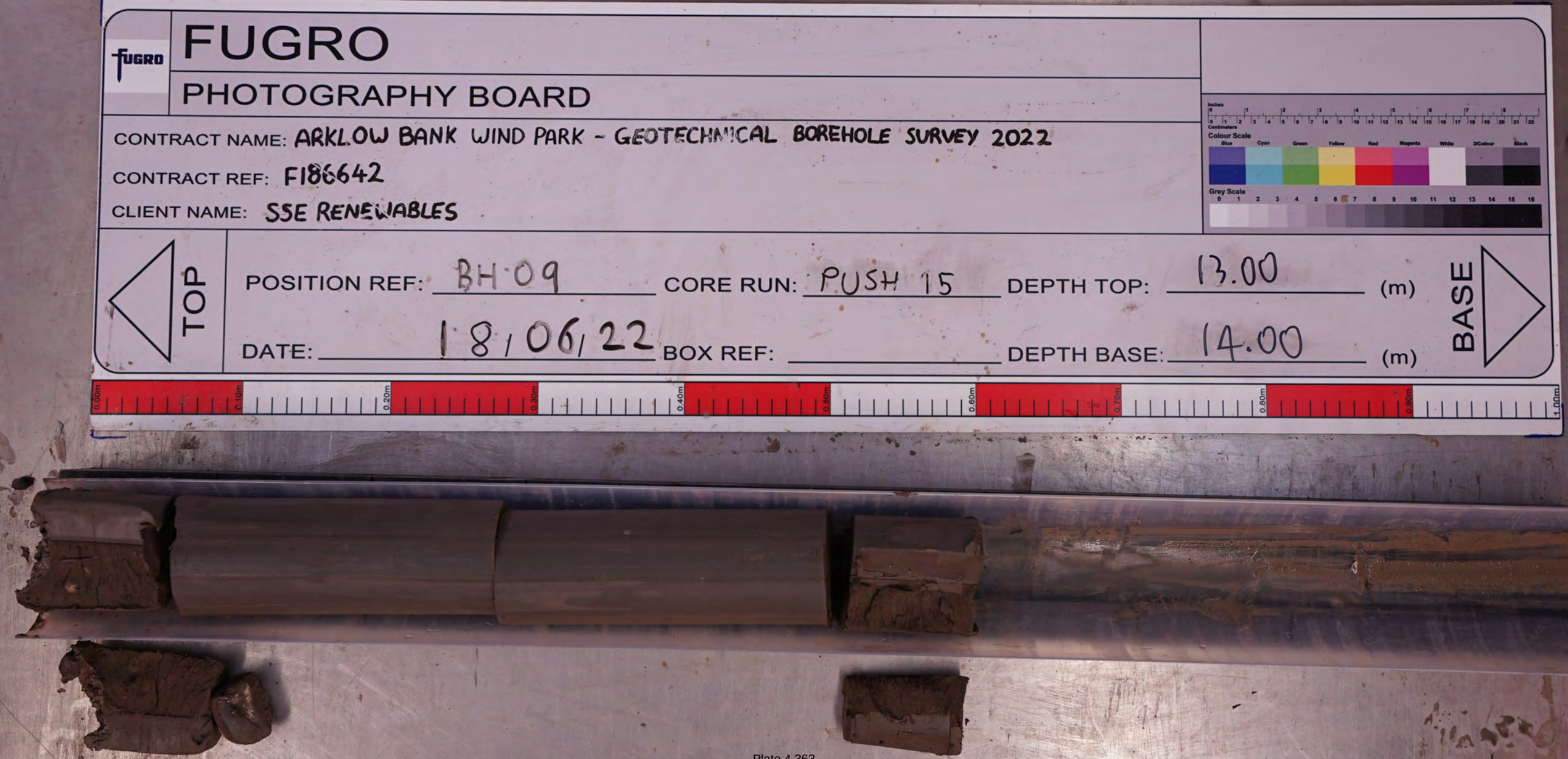

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 15
DEPTH TOP: 13.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.362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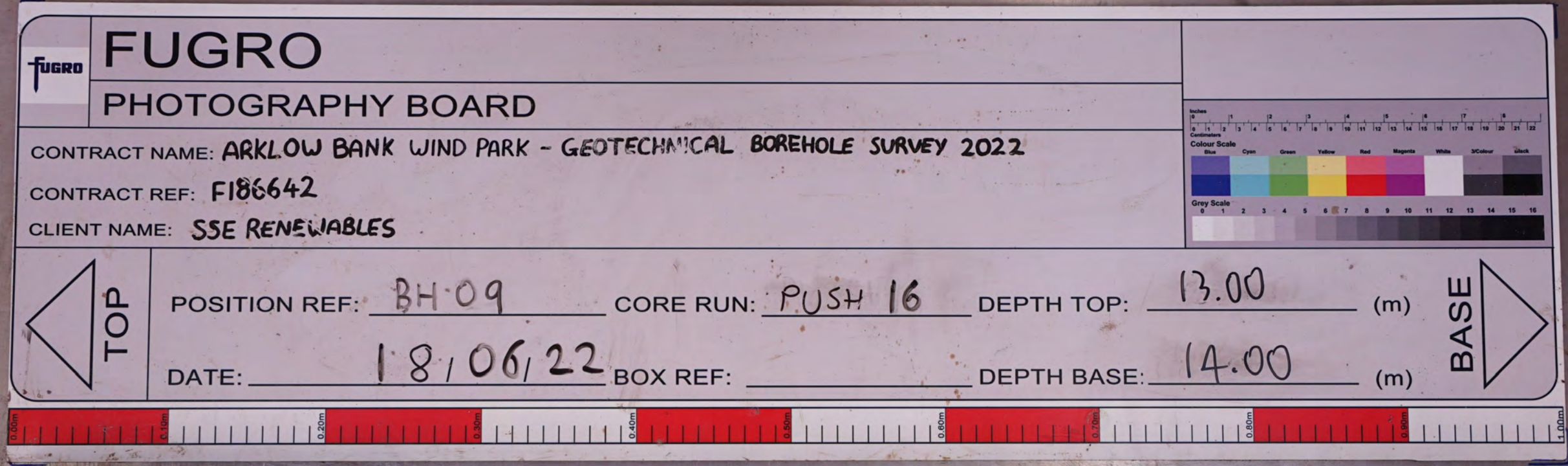
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 15
DEPTH TOP: 13.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.363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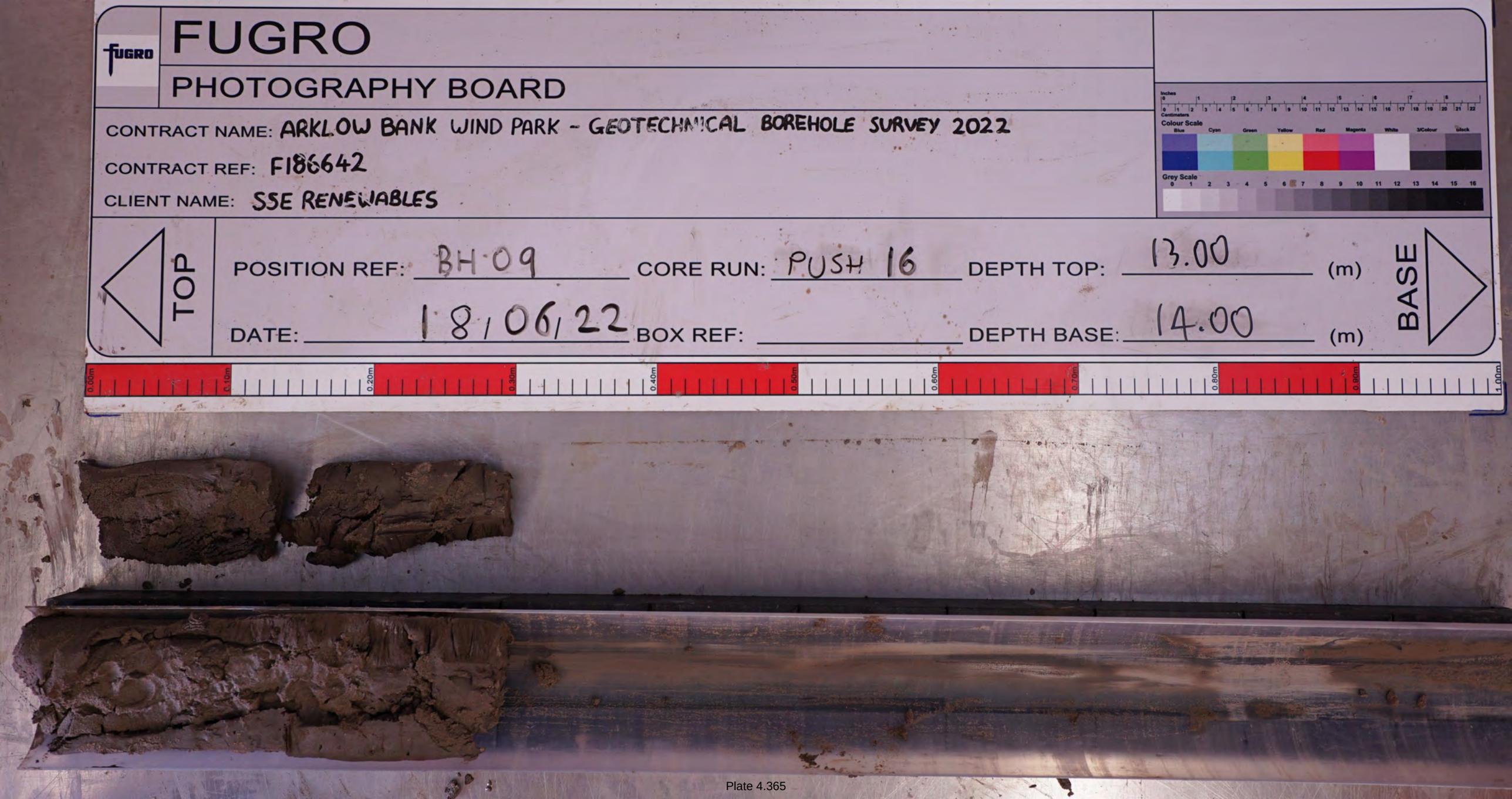
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 16
DEPTH TOP: 13.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.364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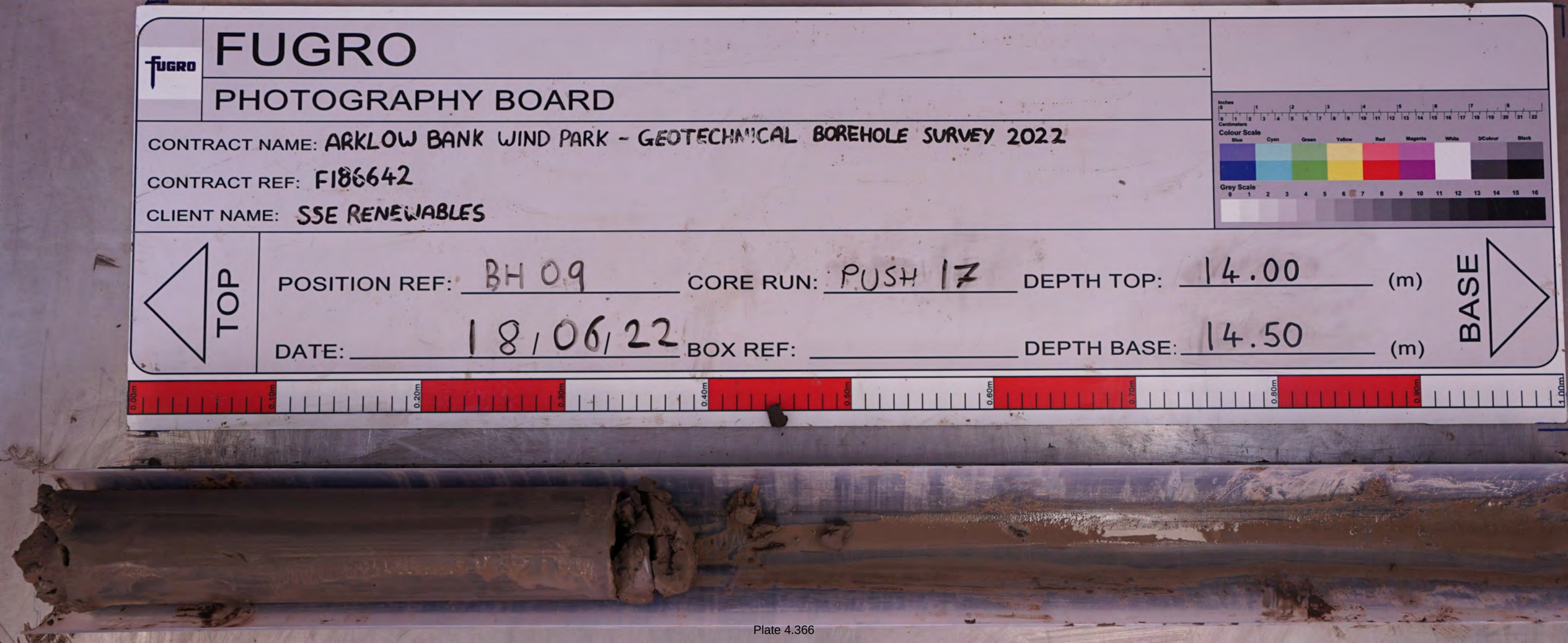
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 16
DEPTH TOP: 13.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.365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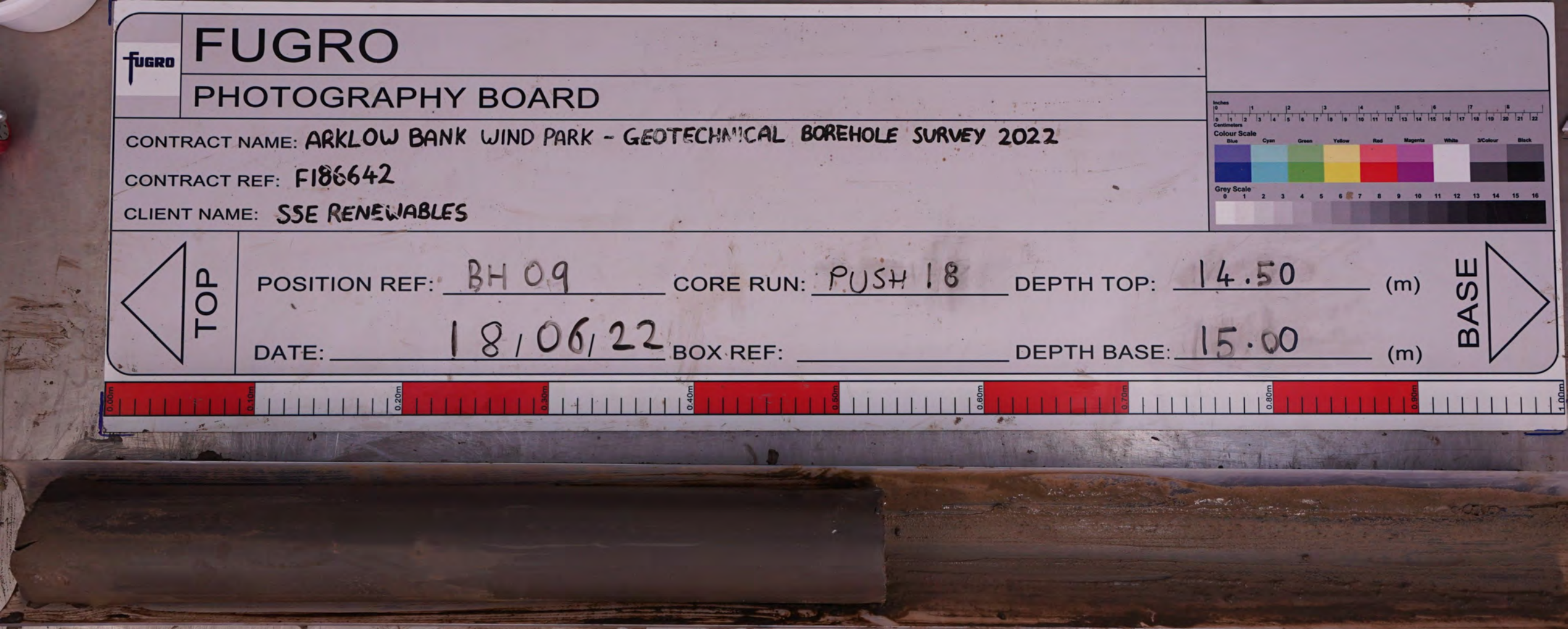
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 17
DEPTH TOP: 14.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.366


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 17
DEPTH TOP: 14.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.367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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 18
DEPTH TOP: 14.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 15.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.368

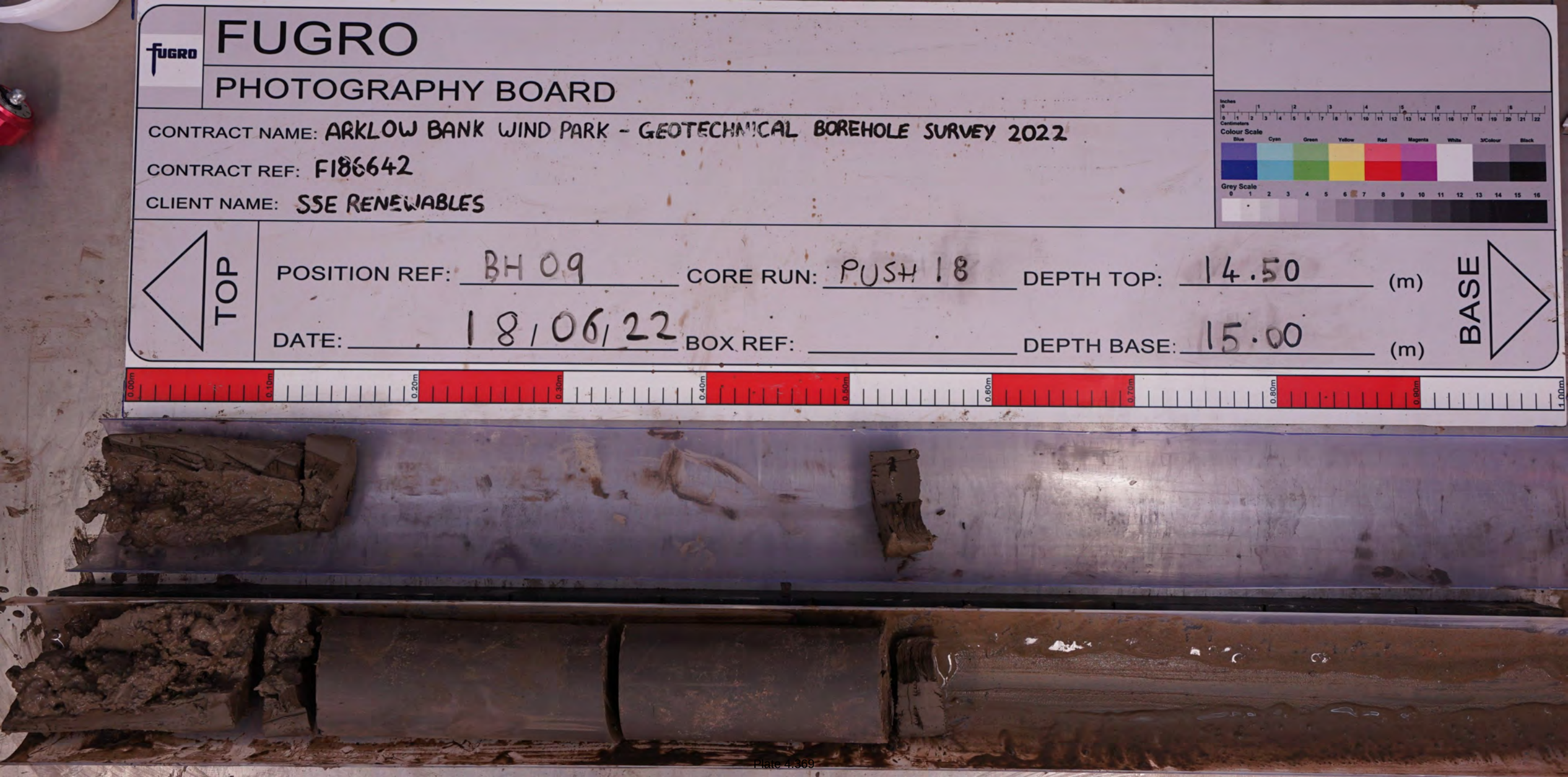

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 18
DEPTH TOP: 14.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 15.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.369

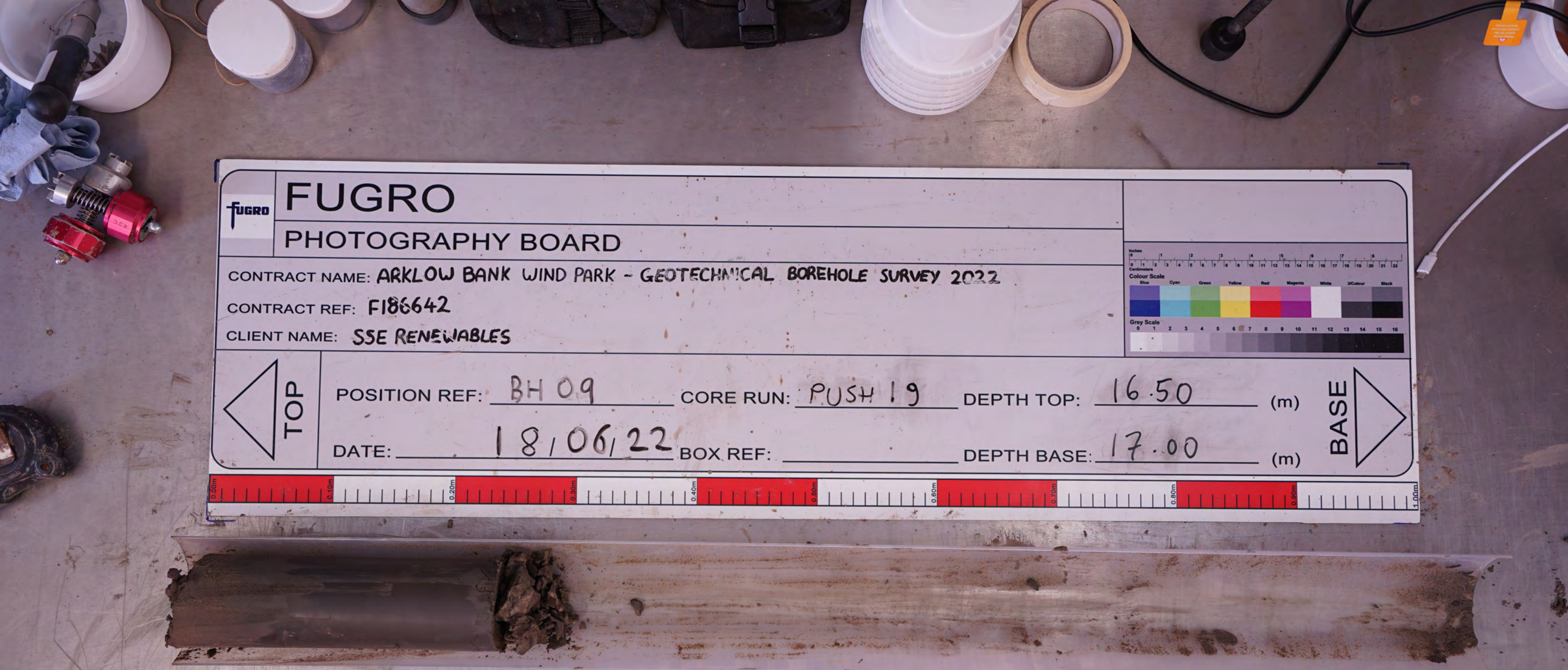
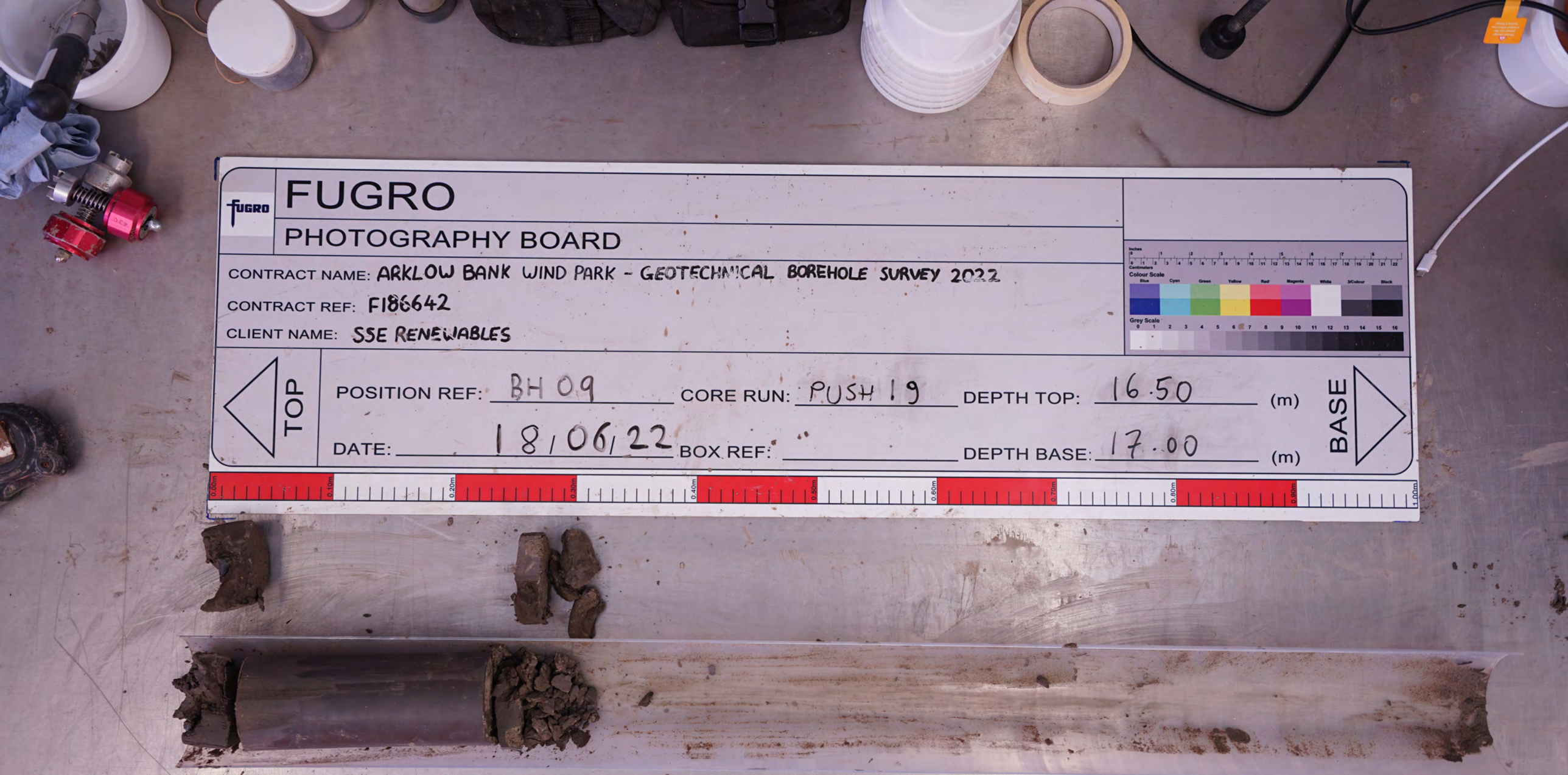

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 19
DEPTH TOP: 16.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 17.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.370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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 19
DEPTH TOP: 16.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 17.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.371

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 20 DEPTH TOP: 17.00 (m)

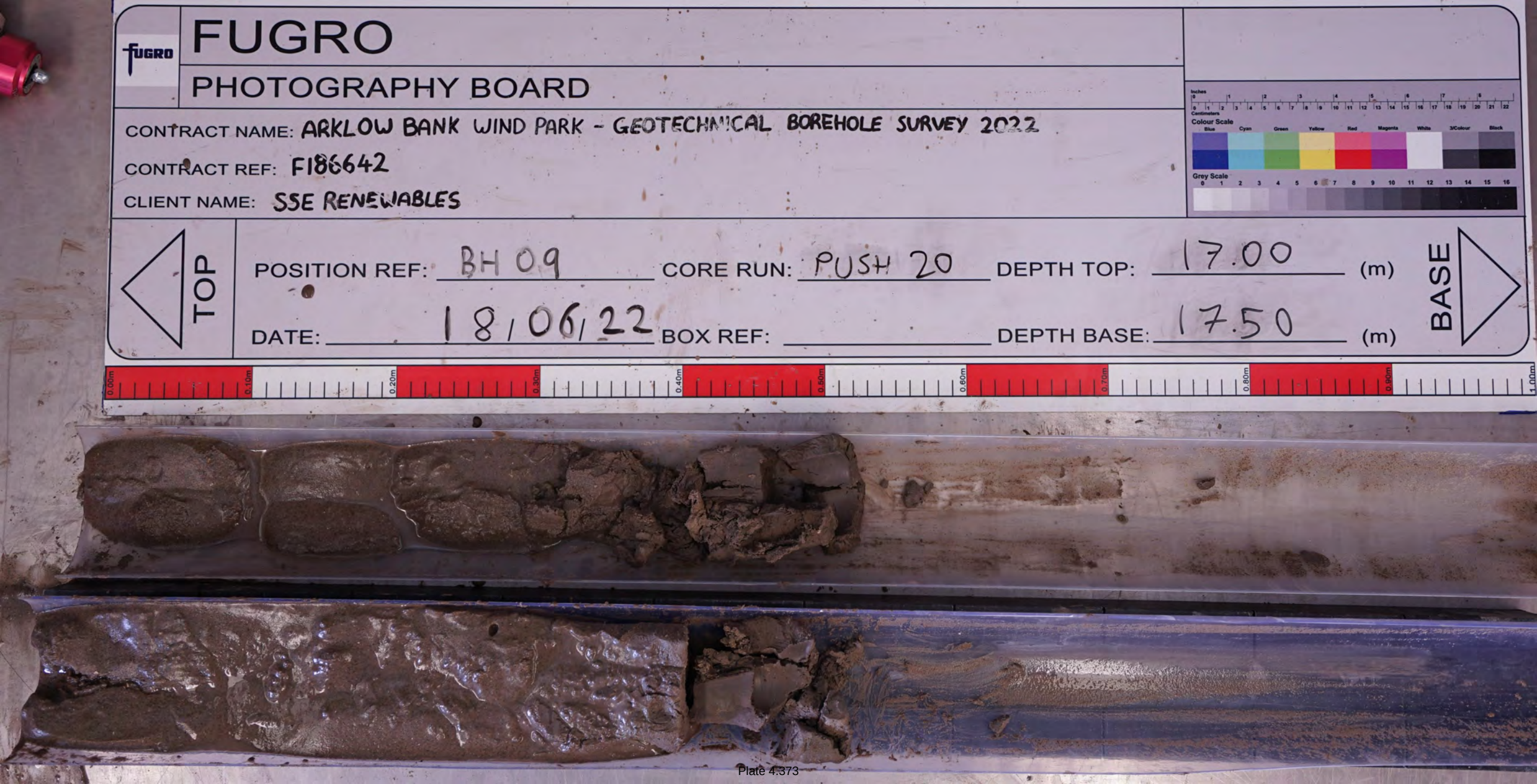
DATE: 18/06/22 BOX REF: DEPTH BASE: 17.50 (m)

BASE





Plate 4.372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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 20
DEPTH TOP: 17.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.373

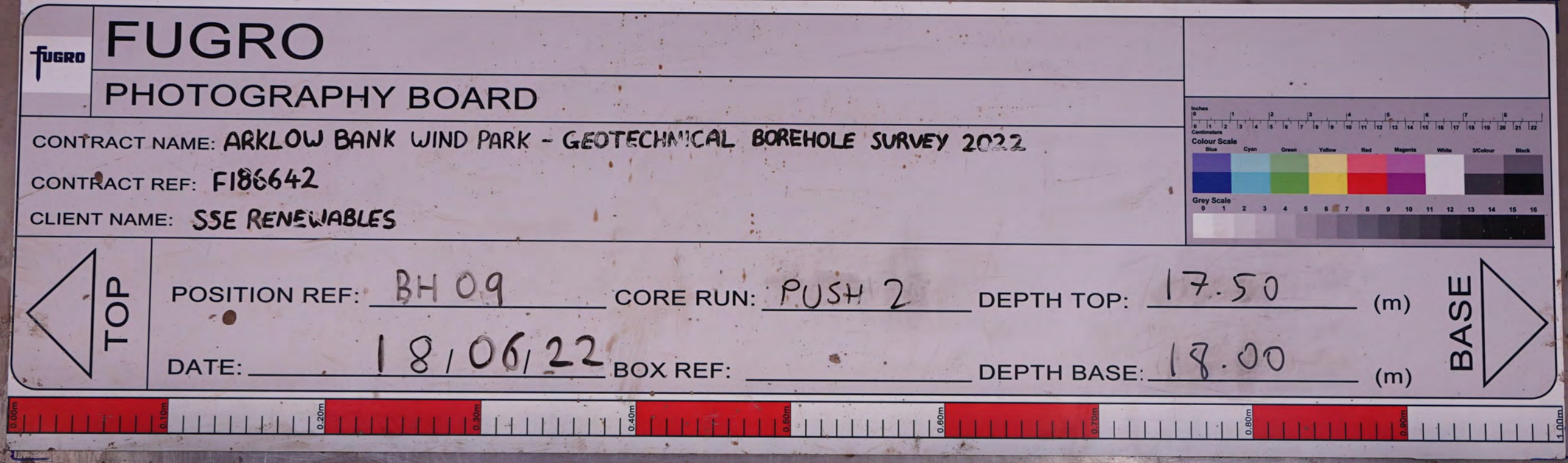
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 2
DEPTH TOP: 17.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.374

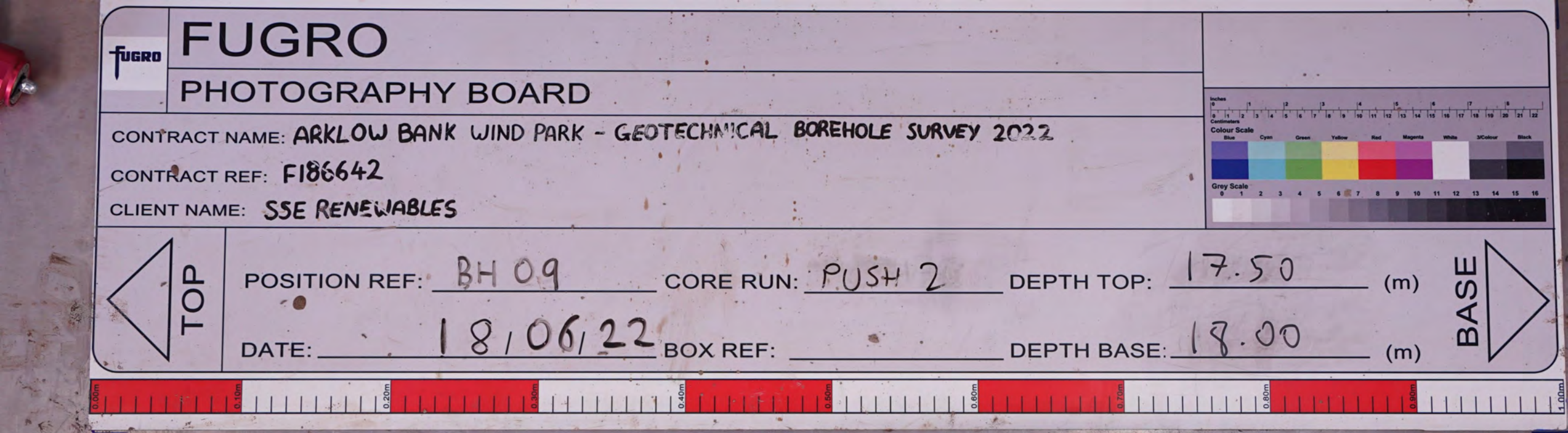
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 2
DEPTH TOP: 17.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.375

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 22 DEPTH TOP: 18.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 19.45 (m)

BASE



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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 09 CORE RUN: PUSH 22 DEPTH TOP: 18.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 19.45 (m)

BASE



Plate 4.377

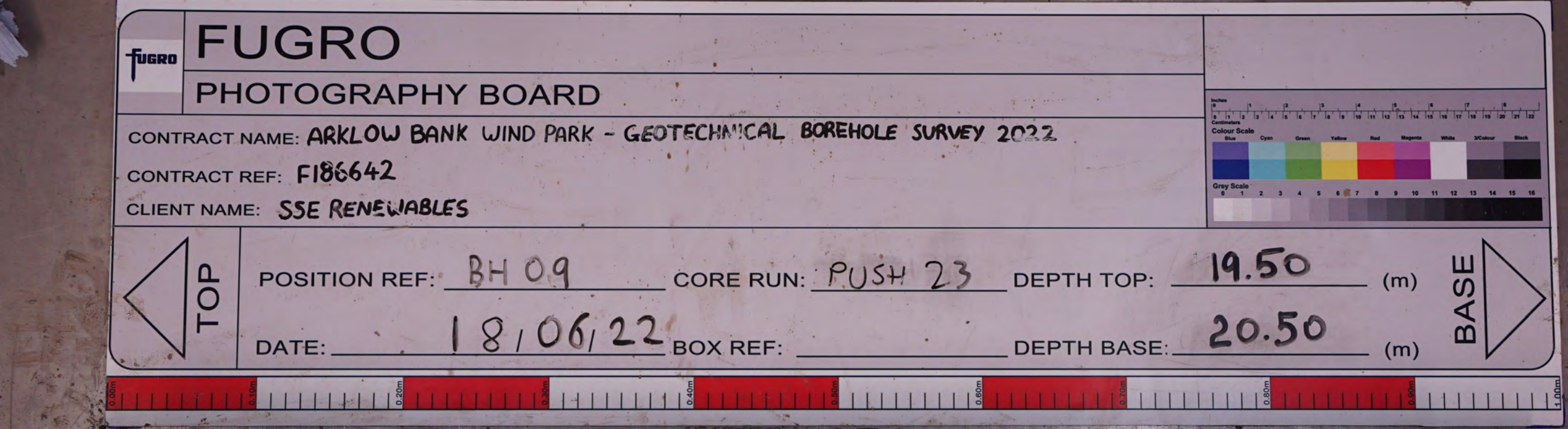
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 23
DEPTH TOP: 19.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 20.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.378

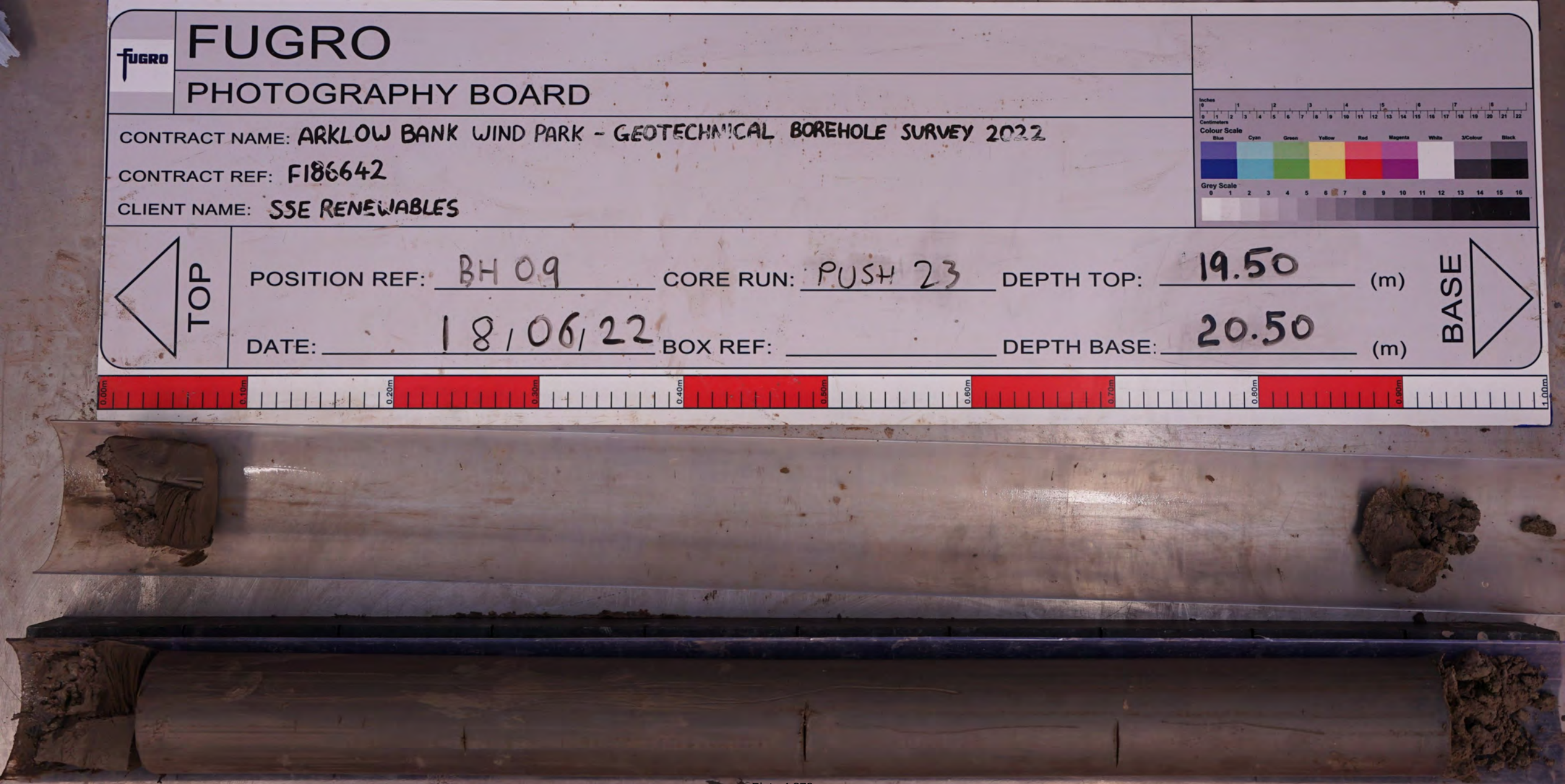
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 23
DEPTH TOP: 19.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 20.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.379

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 2A DEPTH TOP: 20.50 (m)

DATE: 18/06/22 BOX REF: _____ DEPTH BASE: 21.50 (m)

BASE



Plate 4.380

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 2A DEPTH TOP: 20.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 21.50 (m)

BASE



Plate 4.381

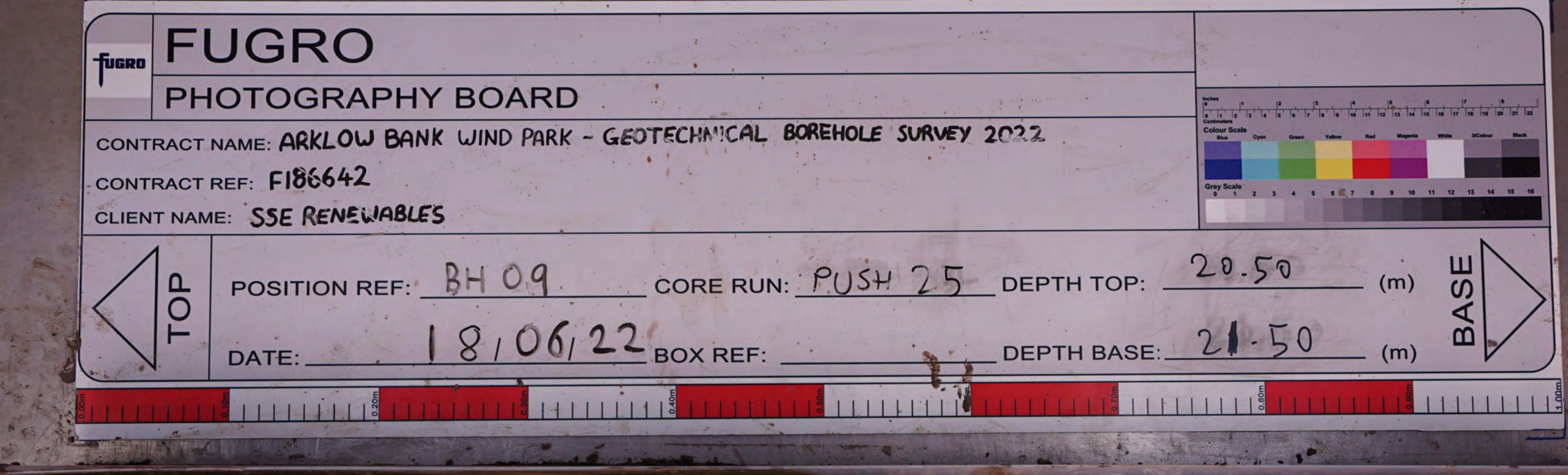
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 25
DEPTH TOP: 20.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.382

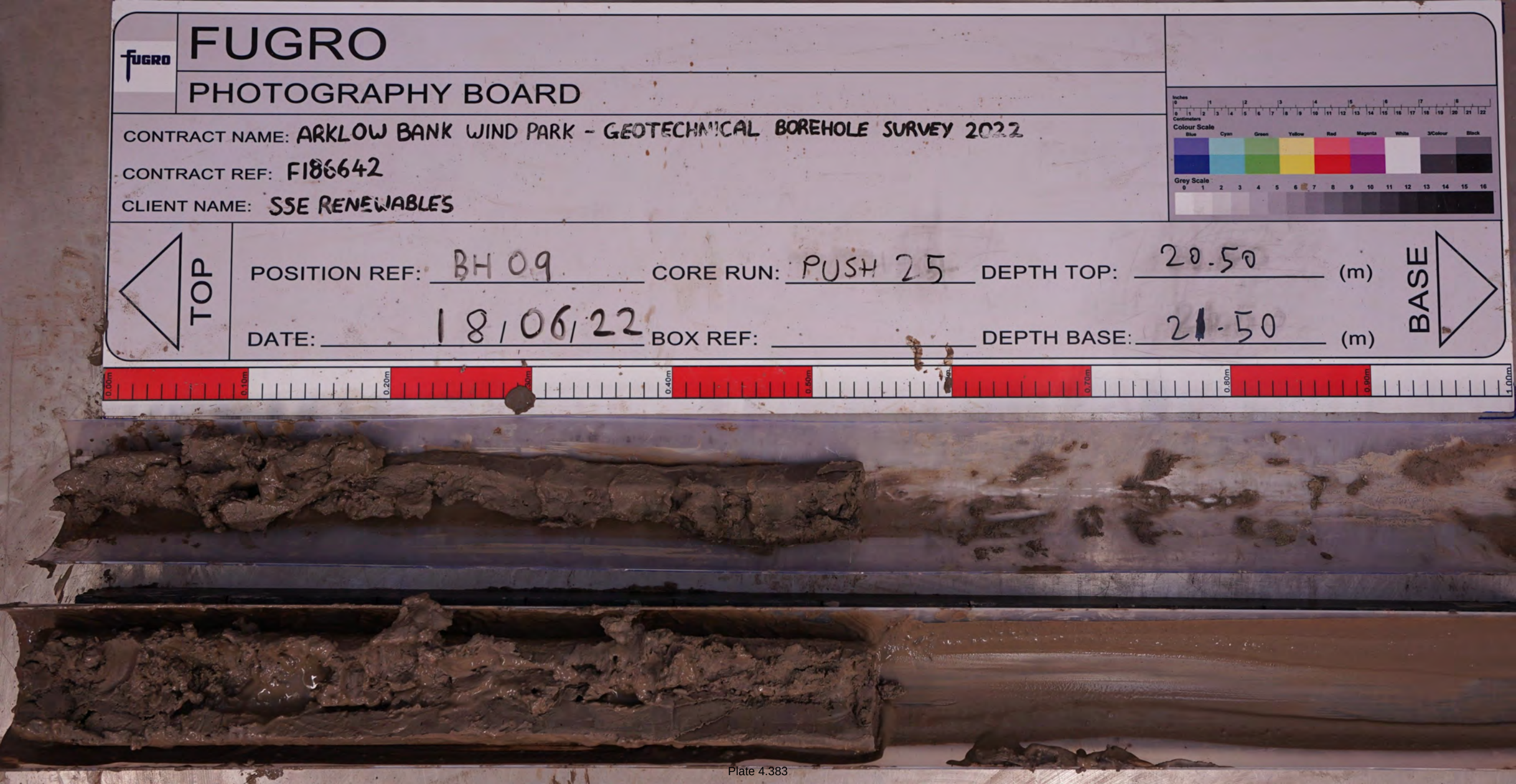
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 25
DEPTH TOP: 20.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.383

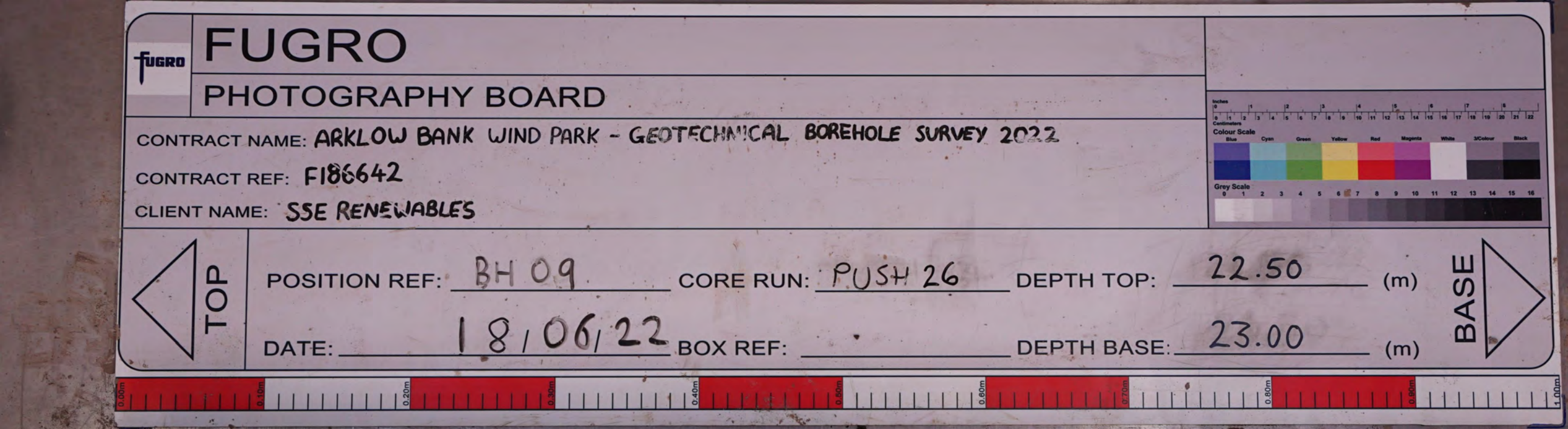
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 26
DEPTH TOP: 22.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 23.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.384

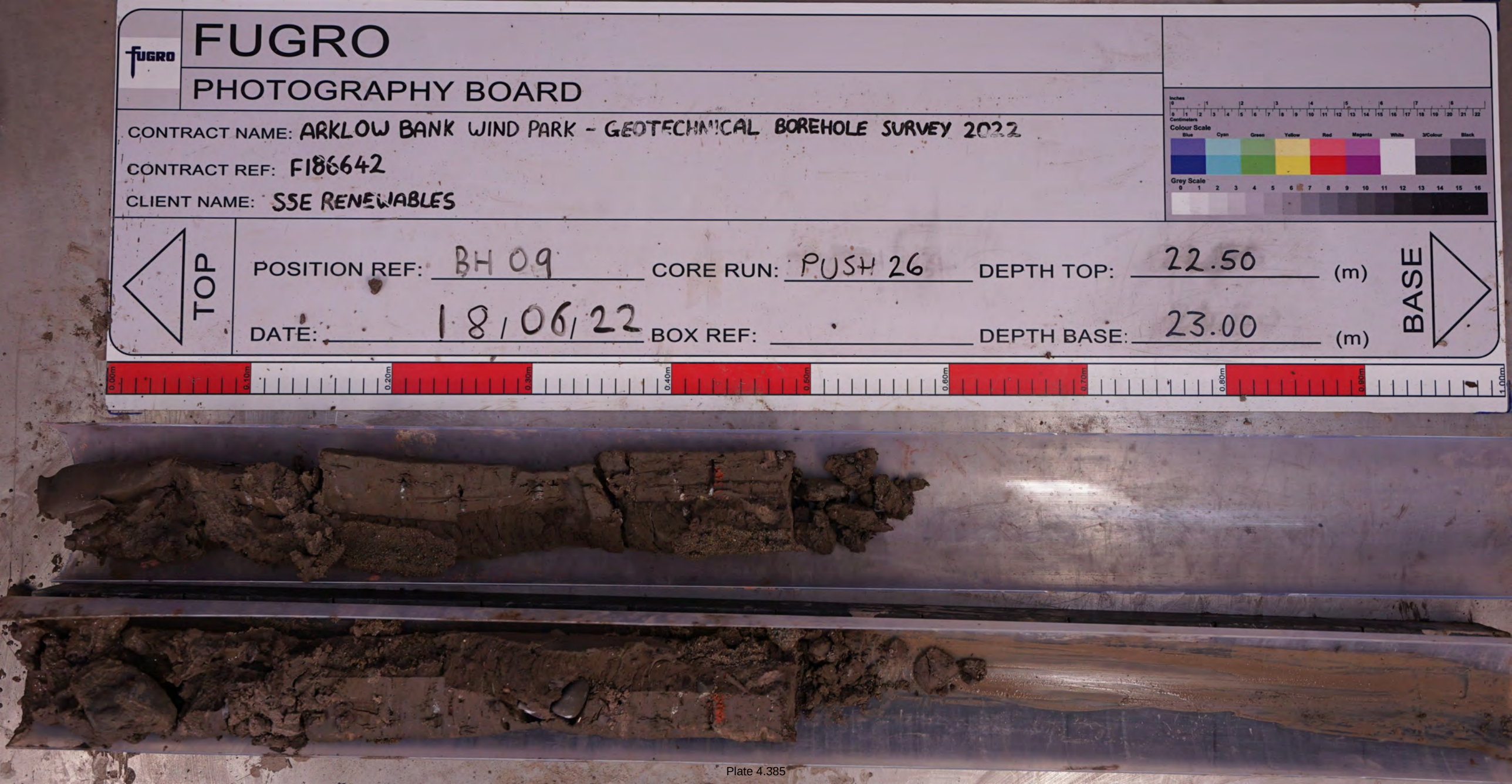
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 26
DEPTH TOP: 22.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 23.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.385

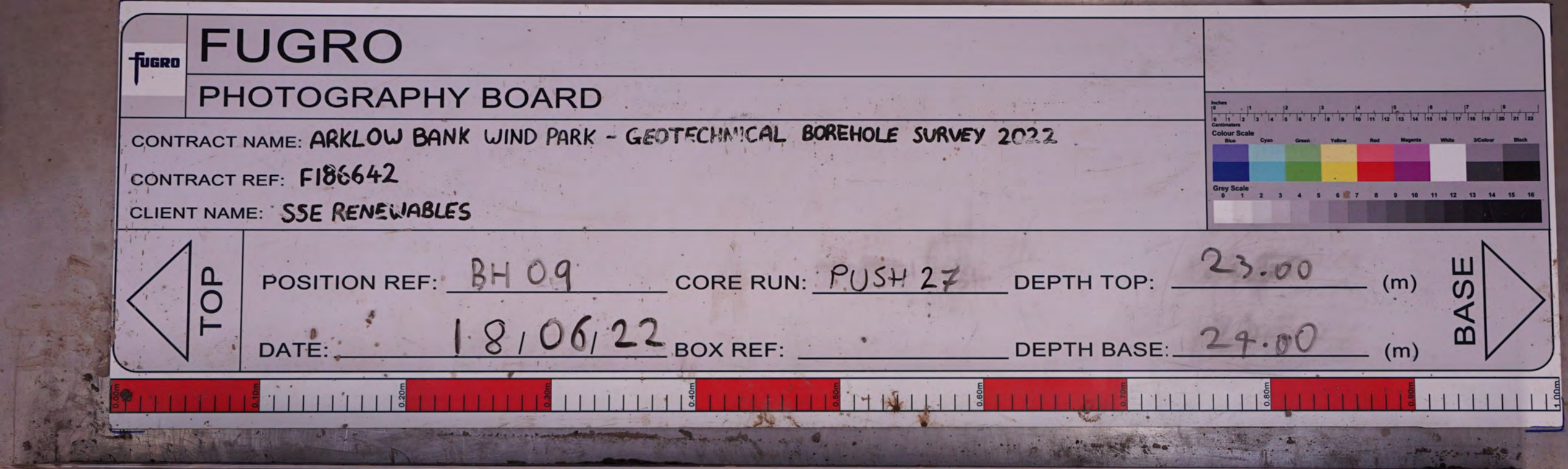
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 27
DEPTH TOP: 23.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.386

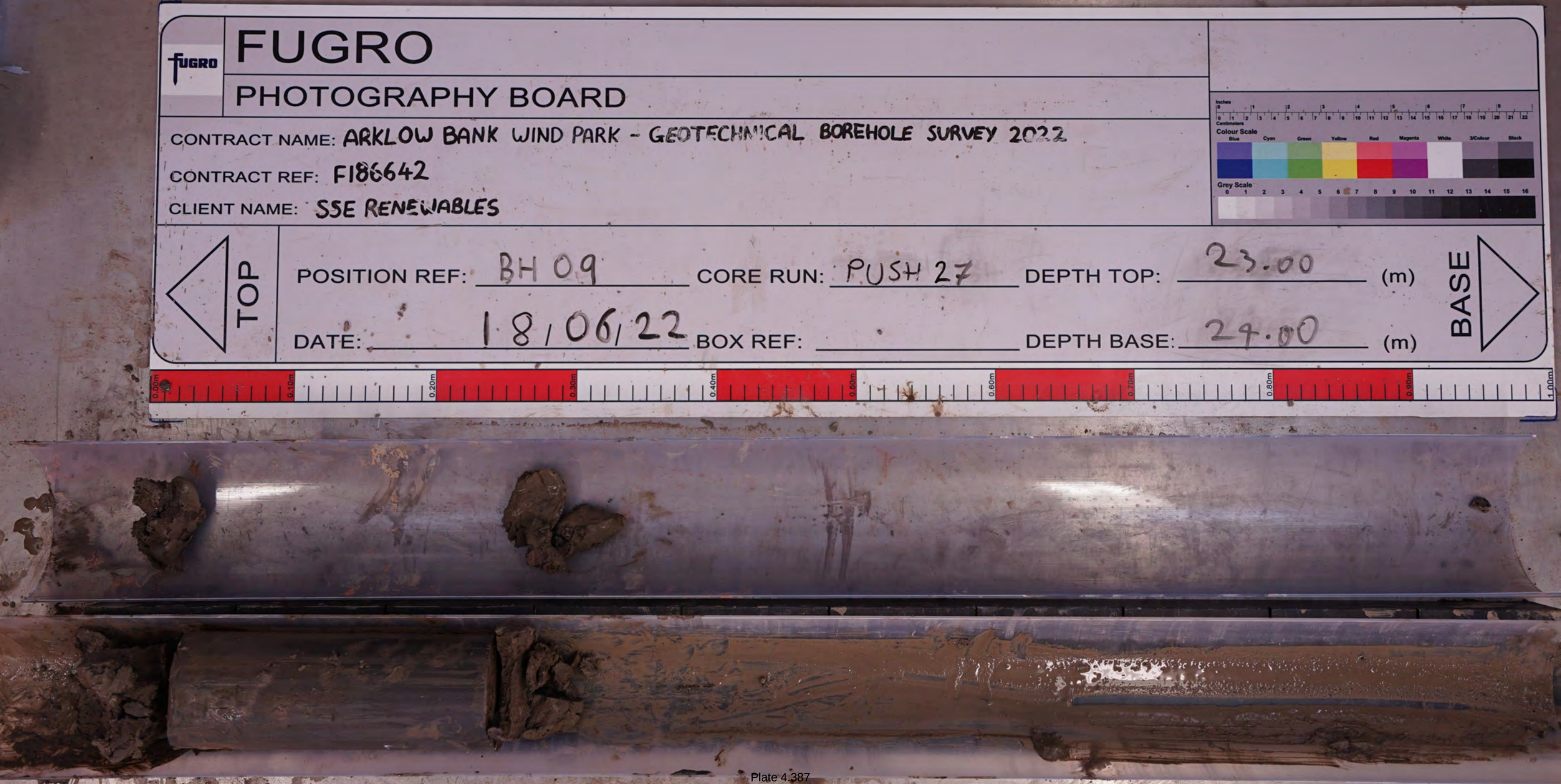
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 27
DEPTH TOP: 23.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.387

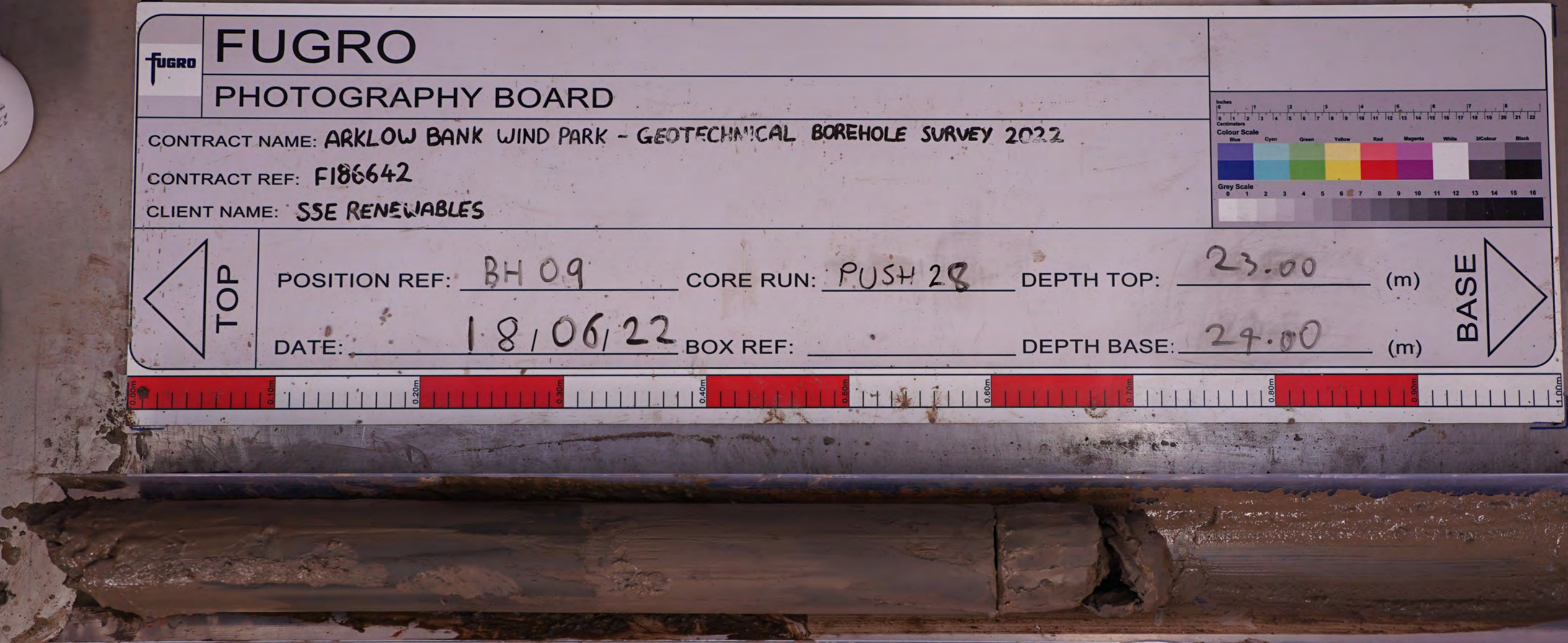
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 28
DEPTH TOP: 23.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.388


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 28
DEPTH TOP: 23.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.389

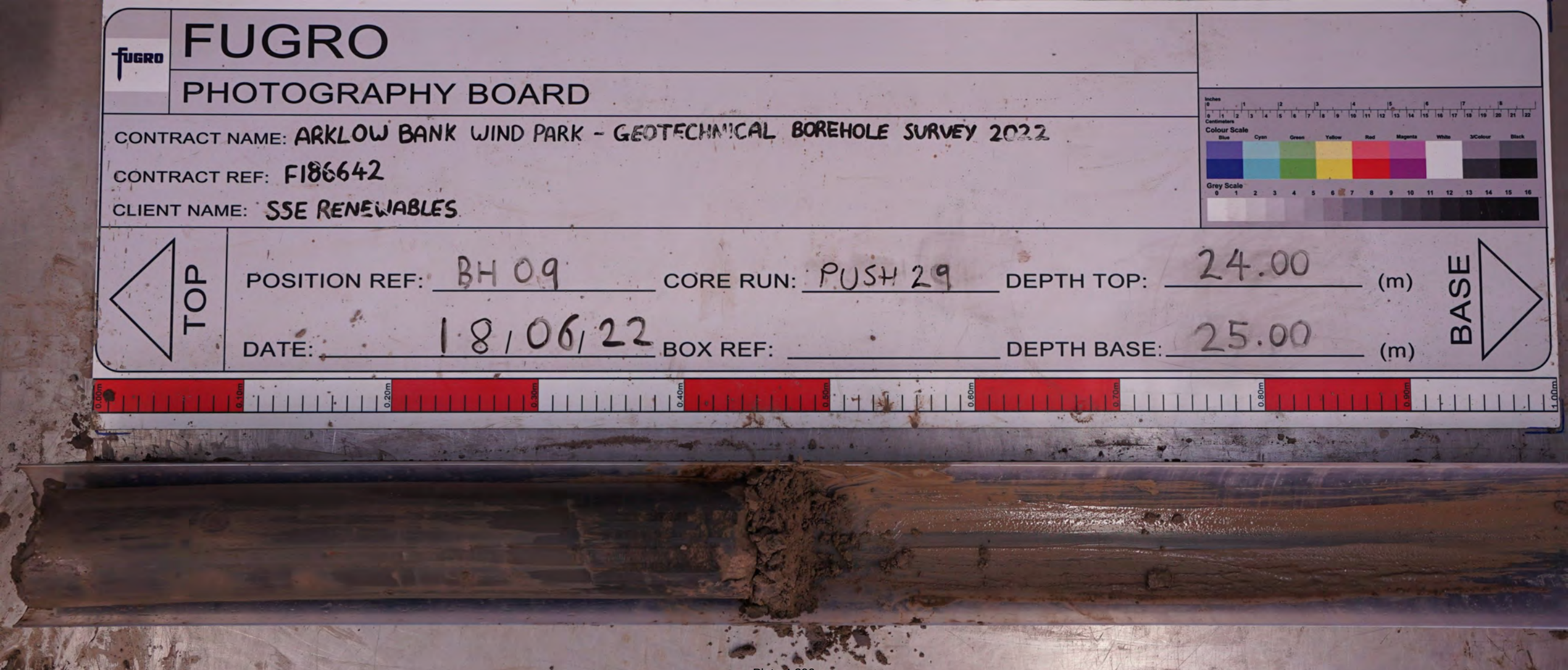
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 29
DEPTH TOP: 24.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 25.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.390

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 29 DEPTH TOP: 24.00 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 25.00 (m)

BASE



Plate 4.391

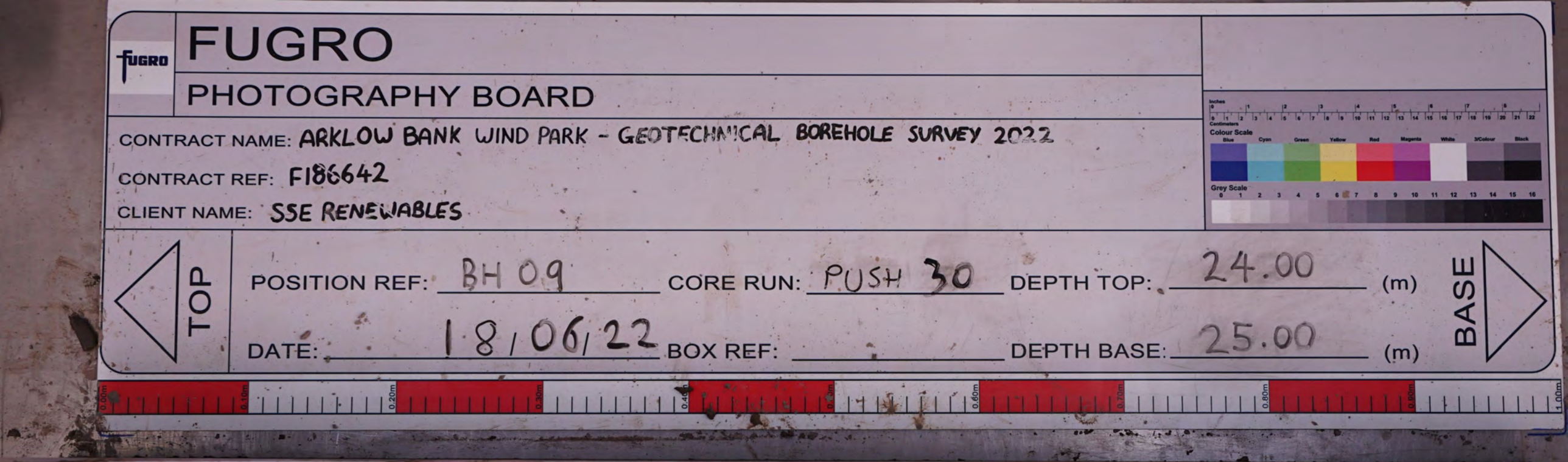
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 09
CORE RUN: PUSH 30
DEPTH TOP: 24.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 25.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.392


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 30
DEPTH TOP: 24.00 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 25.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.393

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 09 CORE RUN: PUSH 31 DEPTH TOP: 25.50 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 26.50 (m)

BASE





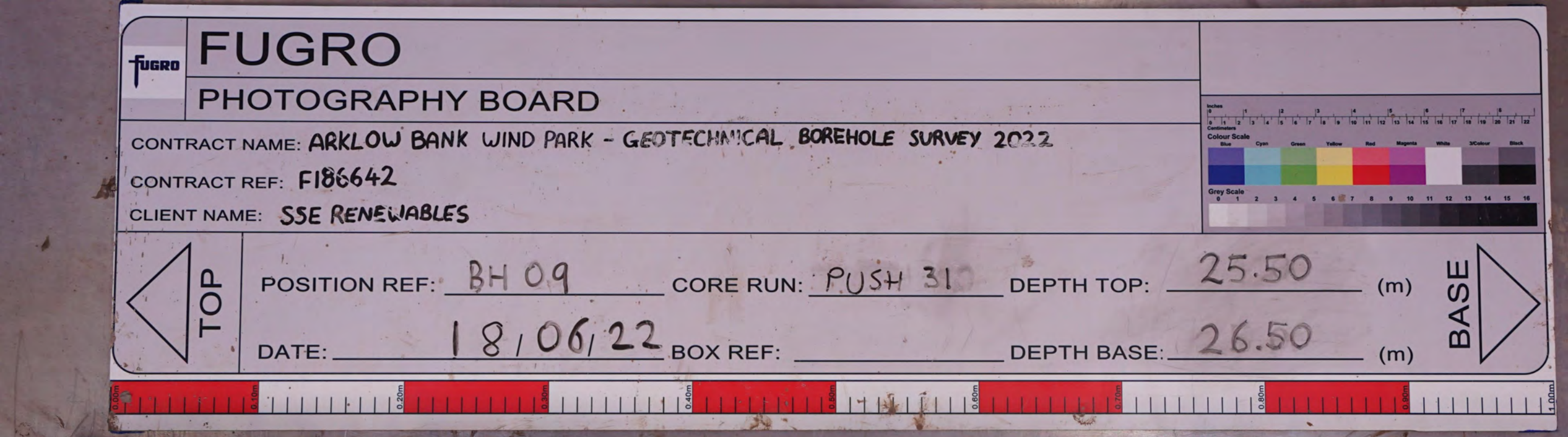
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: PUSH 31
DEPTH TOP: 25.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.395

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: PUSH 32 DEPTH TOP: 26.5 (m)

DATE: 18/06/22 BOX REF: DEPTH BASE: 26.8 (m)

BASE



Plate 4.396

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

CORE RUN: CR1

DEPTH TOP: 27.00 (m)

DATE: 18/06/22

BOX REF: 1

DEPTH BASE: 27.50 (m)

BASE

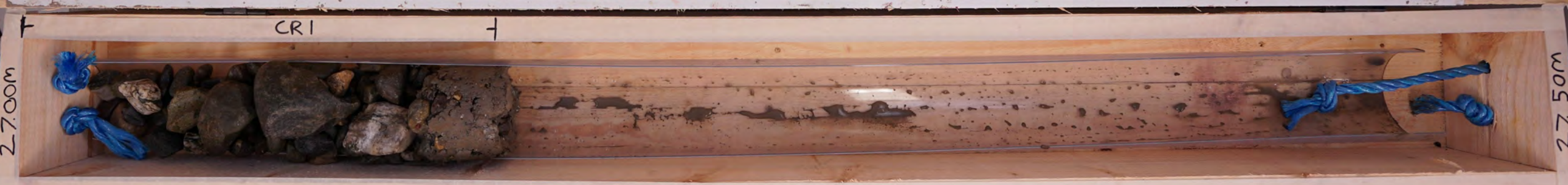

Plate 4.397


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
DATE: 18/06/22
CORE RUN: CR2
BOX REF: 2
DEPTH TOP: 27.50 (m)
DEPTH BASE: 28.50 (m)
BASE
CR2
(28.10m)
AZCL
27.50m
28.50m

Plate 4.398

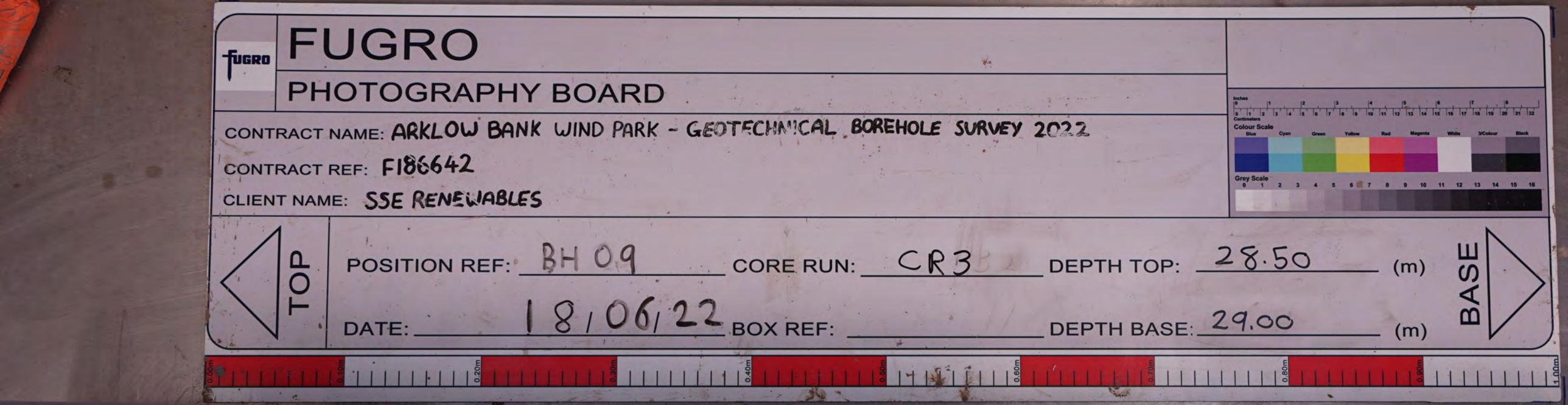
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR3
DEPTH TOP: 28.50 (m)
DATE: 18/06/22
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
Inches
Centimeters
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.399

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: HAMMER 33 DEPTH TOP: 29.00 (m)

DATE: 18/06/22 BOX REF: _____ DEPTH BASE: 29.45 (m)

BASE



Plate 4.400

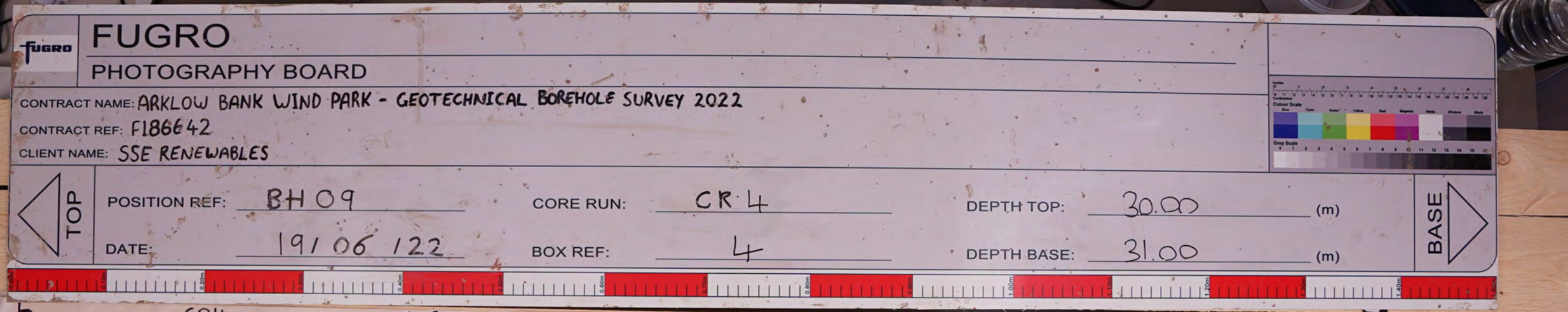
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR4
DEPTH TOP: 30.00 (m)
DATE: 19/06/22
BOX REF: 4
DEPTH BASE: 31.00 (m)
BASE
CR4
+ (30.40m)
AZCL
30.00m
31.00m

Plate 4.401


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
DATE: 19/06/22
CORE RUN: CR5
BOX REF: 5
DEPTH TOP: 31.00 (m)
DEPTH BASE: 31.50 (m)
BASE
NO RECOVERY

Plate 4.402

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: HAMMER 34 DEPTH TOP: 31.50 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 31.45 (m)

BASE



Plate 4.403

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: HAMMER 35 DEPTH TOP: 32.00 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 32.45 (m)

BASE



Plate 4.404

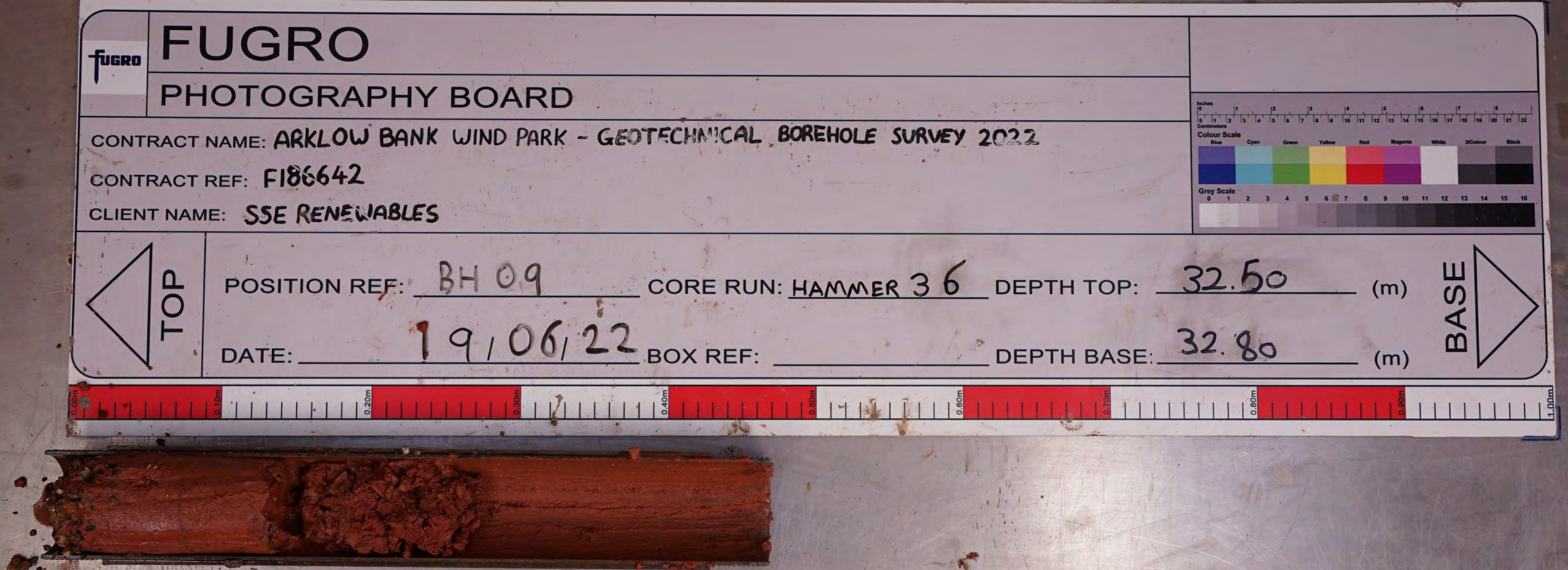

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: HAMMER 36
DEPTH TOP: 32.50 (m)
DATE: 19/06/22
BOX REF:
DEPTH BASE: 32.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.405

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: HAMMER 37 DEPTH TOP: 33.00 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 33.30 (m)

BASE



Plate 4.406

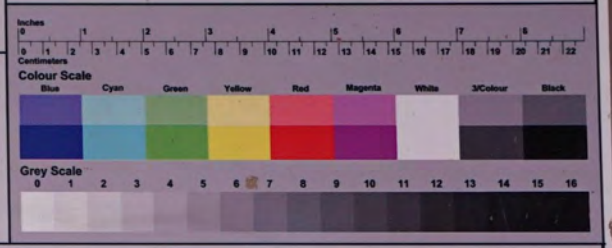
FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES



TOP

POSITION REF: BH 09 CORE RUN: CR6 DEPTH TOP: 33.50 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 34.50 (m)

BASE



NO RECOVERY

Plate 4.407

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

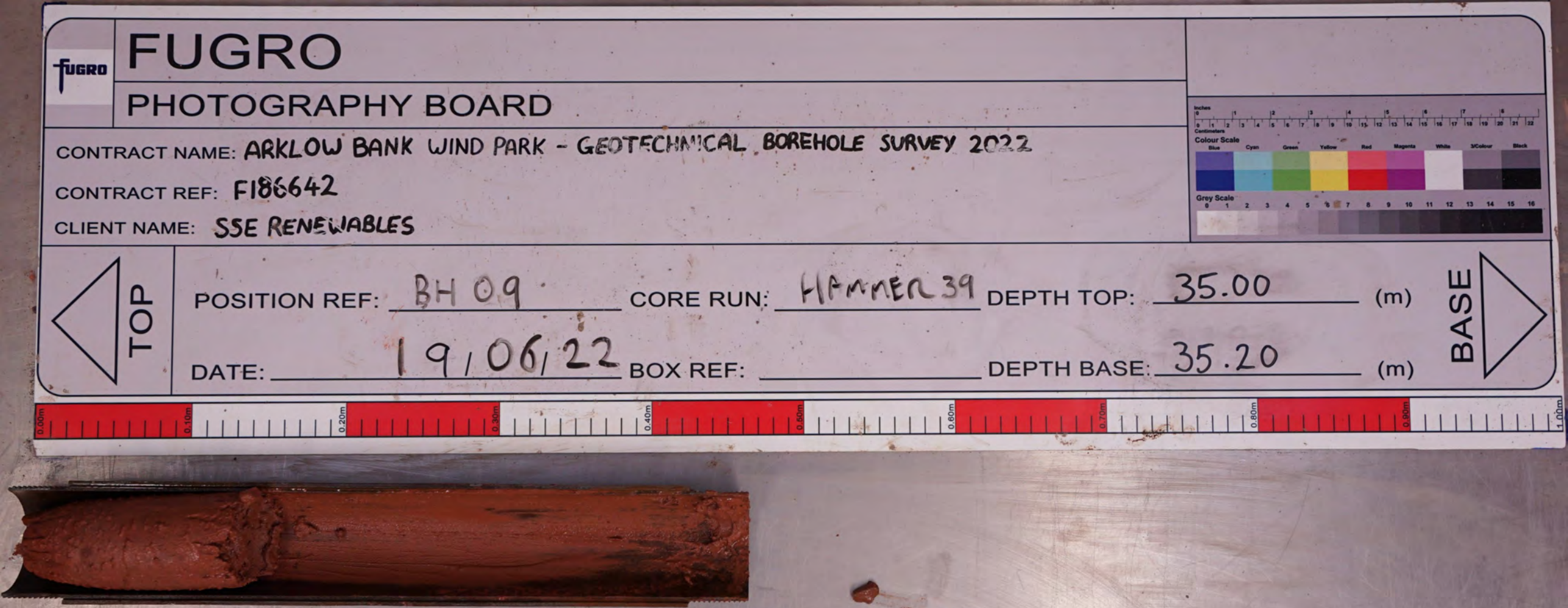
POSITION REF: BH09 CORE RUN: HAMMER 38 DEPTH TOP: 34.50 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 34.80 (m)

BASE



Plate 4.408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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: HAMMER 39
DEPTH TOP: 35.00 (m)
DATE: 19/06/22
BOX REF:
DEPTH BASE: 35.20 (m)
BASE
Colour Scale
Grey Scale

Plate 4.409

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09 CORE RUN: HAMMER 39 DEPTH TOP: 35.00 (m)

DATE: 19/06/22 BOX REF: DEPTH BASE: 35.20 (m)

BASE



Plate 4.410

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

DATE: 19/06/22

CORE RUN: CR7

BOX REF: 7

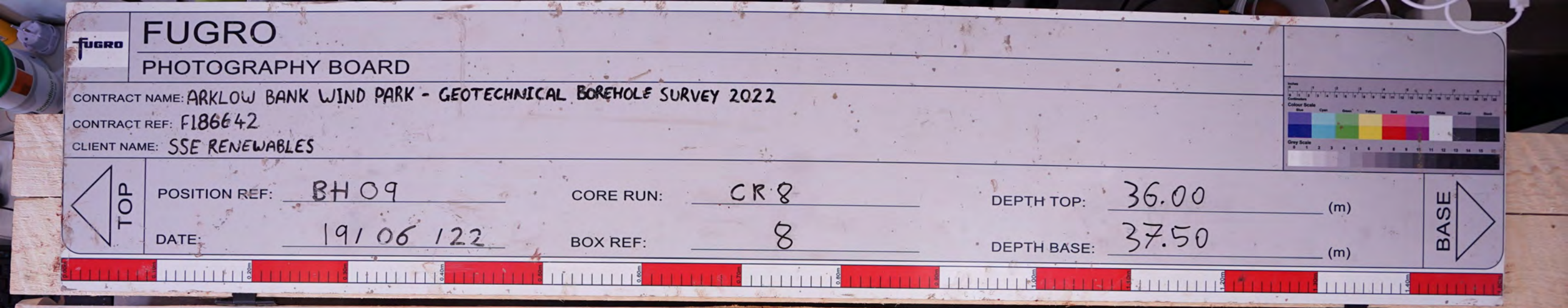
DEPTH TOP: 35.00 (m)

DEPTH BASE: 36.00 (m)

BASE



Plate 4.411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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR8
DEPTH TOP: 36.00 (m)
DATE: 19/06/22
BOX REF: 8
DEPTH BASE: 37.50 (m)
BASE
CR-8
37.25
AZCL
36.00m
37.50m

Plate 4.412


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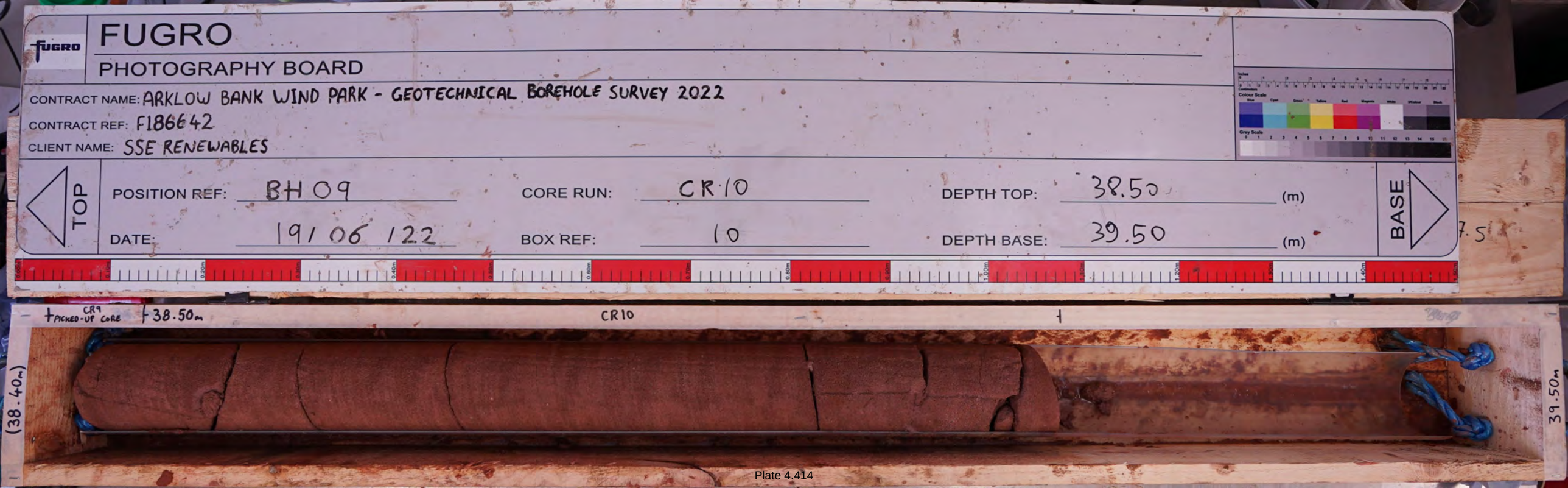
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR9
DEPTH TOP: 37.50 (m)
DATE: 191 06 122
BOX REF: 9
DEPTH BASE: 38.50 (m)
BASE
CR9
(38.40m)↓ DROPPED
37.50m
38.50m

Plate 4.413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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR10
DEPTH TOP: 38.50 (m)
DATE: 191 06 122
BOX REF: 10
DEPTH BASE: 39.50 (m)
BASE
PICKED-UP CORE CR9 38.50m
CR10
(38.40m)
39.50m

Plate 4.414

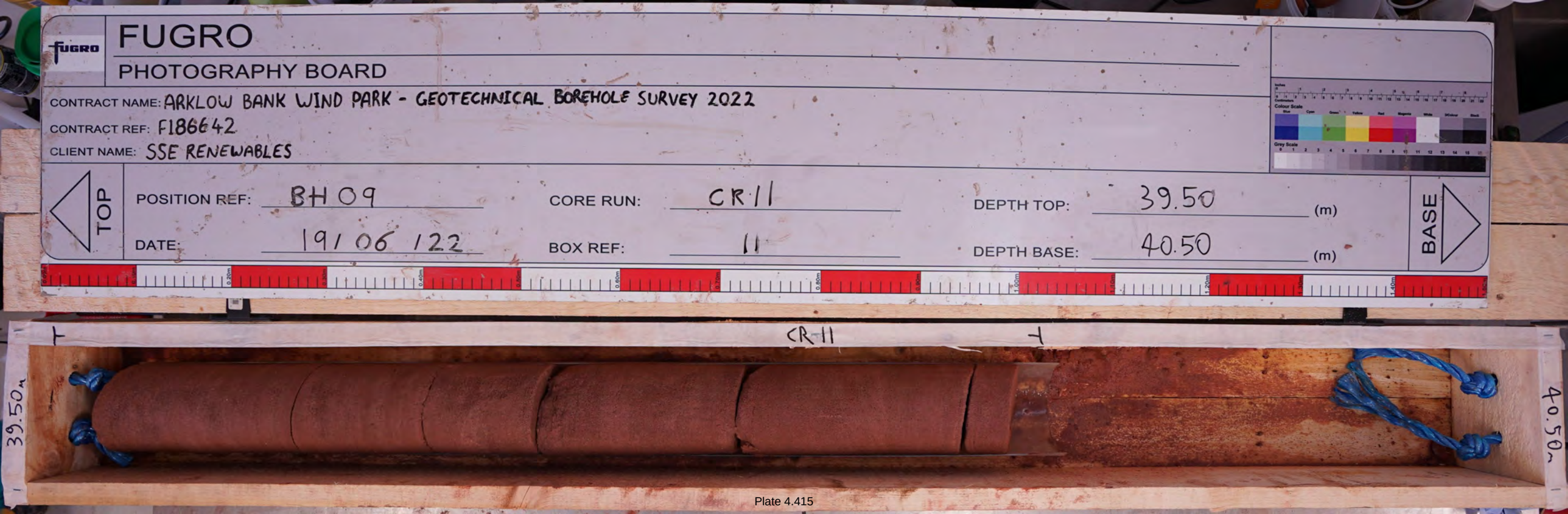
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR11
DEPTH TOP: 39.50 (m)
DATE: 19/06/22
BOX REF: 11
DEPTH BASE: 40.50 (m)
BASE
T
CR11
39.50m
40.50m

Plate 4.415

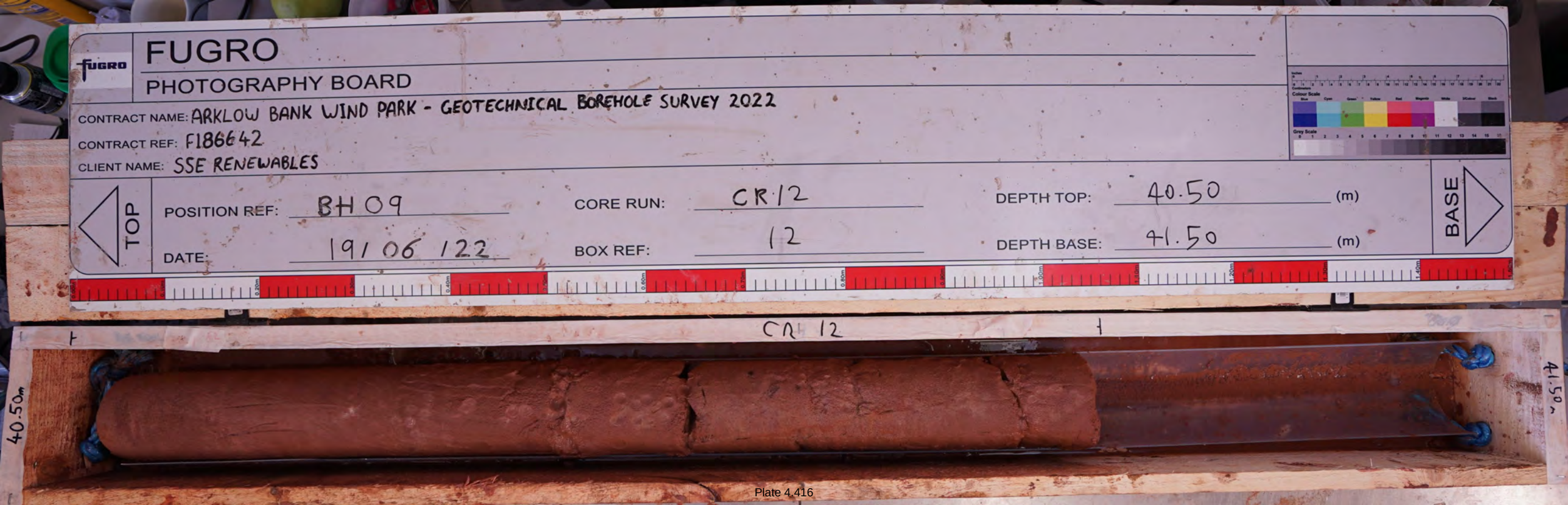
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
DATE: 19/06/22
CORE RUN: CR12
BOX REF: 12
DEPTH TOP: 40.50 (m)
DEPTH BASE: 41.50 (m)
BASE
CR 12
40.50m
41.50m

Plate 4.416


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR14
DEPTH TOP: 42.50 (m)
DATE: 19/06/22
BOX REF: 14
DEPTH BASE: 43.50 (m)
BASE
CR14
(43.45m) + PROPPED CORE +
42.50m
43.50m

Plate 4.417

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

CORE RUN: CR 15

DEPTH TOP: 43.50 (m)

DATE: 19/06/22

BOX REF: 15

DEPTH BASE: 44.50 (m)

BASE



Plate 4.418

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

DATE: 19/06/22

CORE RUN: CR15

BOX REF: 15

DEPTH TOP: 43.50 (m)

DEPTH BASE: 44.50 (m)

BASE

CR16

(45.45m) ↑ AZCL ↑

44.50m

45.50m

Plate 4.419

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 39

DATE: 19/06/22

CORE RUN: CR 17

BOX REF: 17

DEPTH TOP: 45.50 (m)

DEPTH BASE: 46.50 (m)

BASE

T

CR 17

45.50m

46.50m

Plate 4.420

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 39

CORE RUN: CR 18

DEPTH TOP: 46.50 (m)

DATE: 19/06/22

BOX REF: 18

DEPTH BASE: 47.50 (m)

BASE

CR18

46.50m

47.50m

Plate 4.421

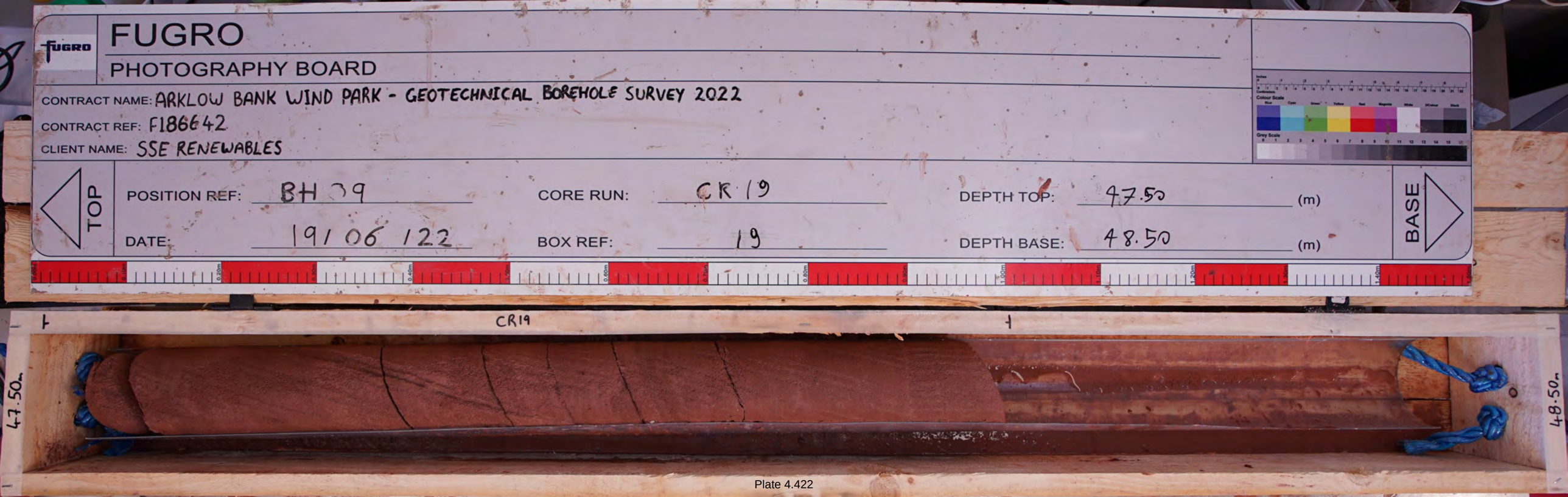
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 39
CORE RUN: CR 19
DEPTH TOP: 47.50 (m)
DATE: 19/06/22
BOX REF: 19
DEPTH BASE: 48.50 (m)
BASE
CR19
47.50m
48.50m

Plate 4.422


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PHOTOGRAPHY BOARD
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH39
CORE RUN: CR20
DEPTH TOP: 48.50 (m)
DATE: 19/06/22
BOX REF: 20
DEPTH BASE: 49.50 (m)
BASE
CR20
48.50m
49.50m

Plate 4.423

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH39

CORE RUN: CR21

DEPTH TOP: 49.50 (m)

DATE: 19/06/22

BOX REF: 21

DEPTH BASE: 50.50 (m)

BASE

CR21

49.50m

50.50m

Plate 4.424

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH39

CORE RUN: CR22

DEPTH TOP: 50.50 (m)

DATE: 19/06/22

BOX REF: 22

DEPTH BASE: 51.50 (m)

BASE

CR22

50.50m

51.50m

Plate 4.425

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

DATE: 19/06/22

CORE RUN: CR23

BOX REF: 23

DEPTH TOP: 51.50 (m)

DEPTH BASE: 52.50 (m)

BASE

CR23

51.50m

52.50m

Plate 4:426


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR24
DEPTH TOP: 52.50 (m)
DATE: 19/06/22
BOX REF: 24
DEPTH BASE: 53.50 (m)
BASE
CR24
52.50m
53.50m

Plate 4.427


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH09
CORE RUN: CR25
DEPTH TOP: 53.50 (m)
DATE: 19/06/22
BOX REF: 25
DEPTH BASE: 54.50 (m)
BASE
CR25
53.50m
54.50m

Plate 4.428

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH09

CORE RUN: CR26

DEPTH TOP: 54.50 (m)

DATE: 19/06/22

BOX REF: 26

DEPTH BASE: 55.50 (m)

BASE

CR26

54.50m

55.50m

Plate 4.429

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENWABLES

TOP

POSITION REF: BH10 CORE RUN: HAMMER 01 DEPTH TOP: 0.00 (m)

DATE: 29 / 06 / 2022 BOX REF: DEPTH BASE: 0.45 (m)

BASE



Plate 4.430

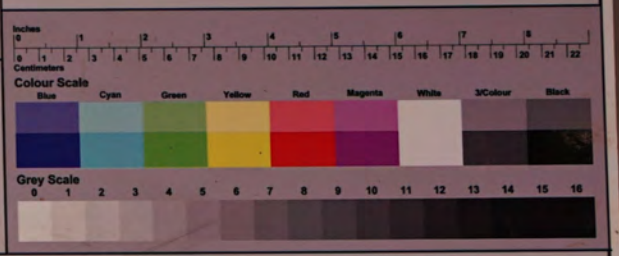
FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

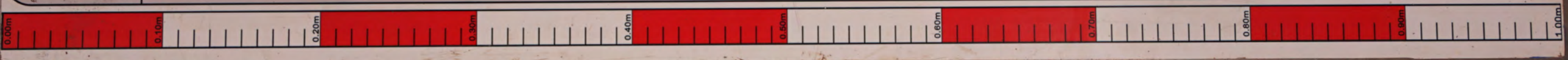


TOP

POSITION REF: BH10 CORE RUN: HAMMER 02 DEPTH TOP: 0.50 (m)

DATE: 29 / 06 / 2022 BOX REF: DEPTH BASE: 0.95 (m)

BASE



NO RECOVERY

Plate 4.431

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

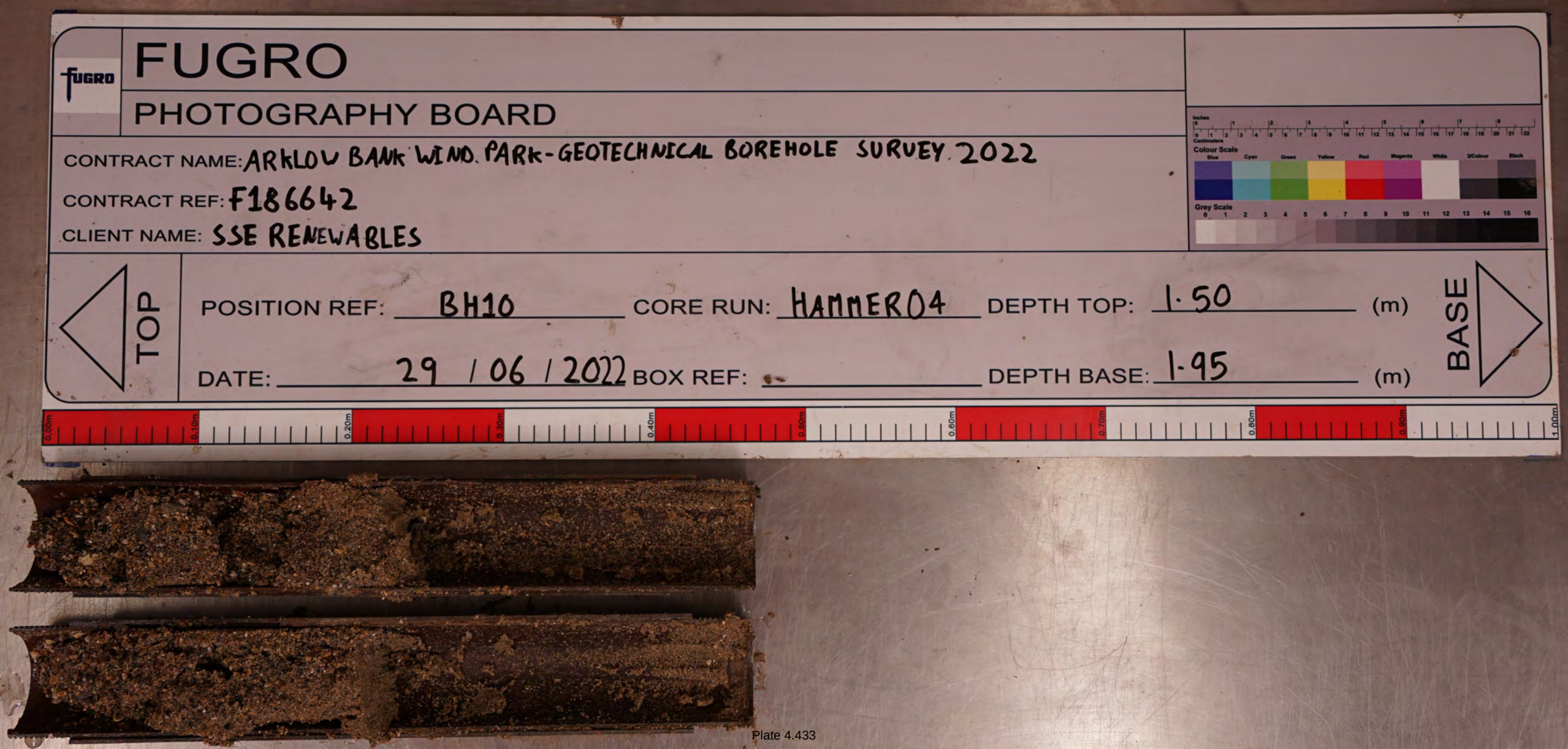
POSITION REF: BH10 CORE RUN: HAMMER03 DEPTH TOP: 1.00 (m)

DATE: 29 / 06 / 2022 BOX REF: DEPTH BASE: 1.45 (m)

BASE



Plate 4.432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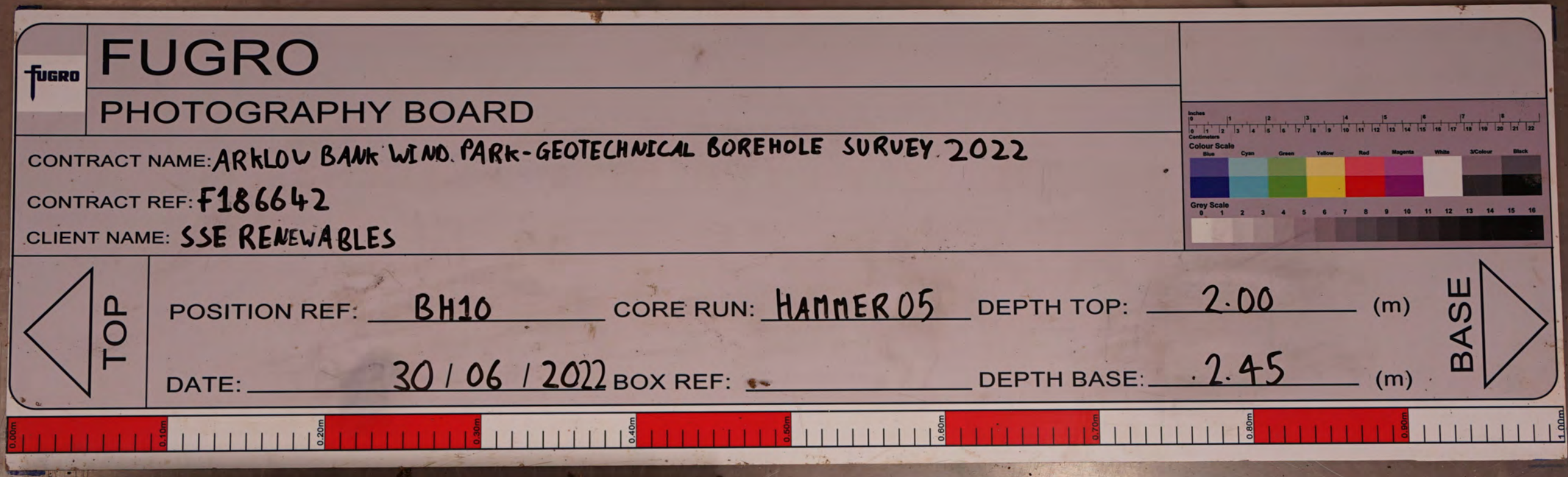
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: HAMMER04
DEPTH TOP: 1.50 (m)
DATE: 29 / 06 / 2022
BOX REF:
DEPTH BASE: 1.95 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.433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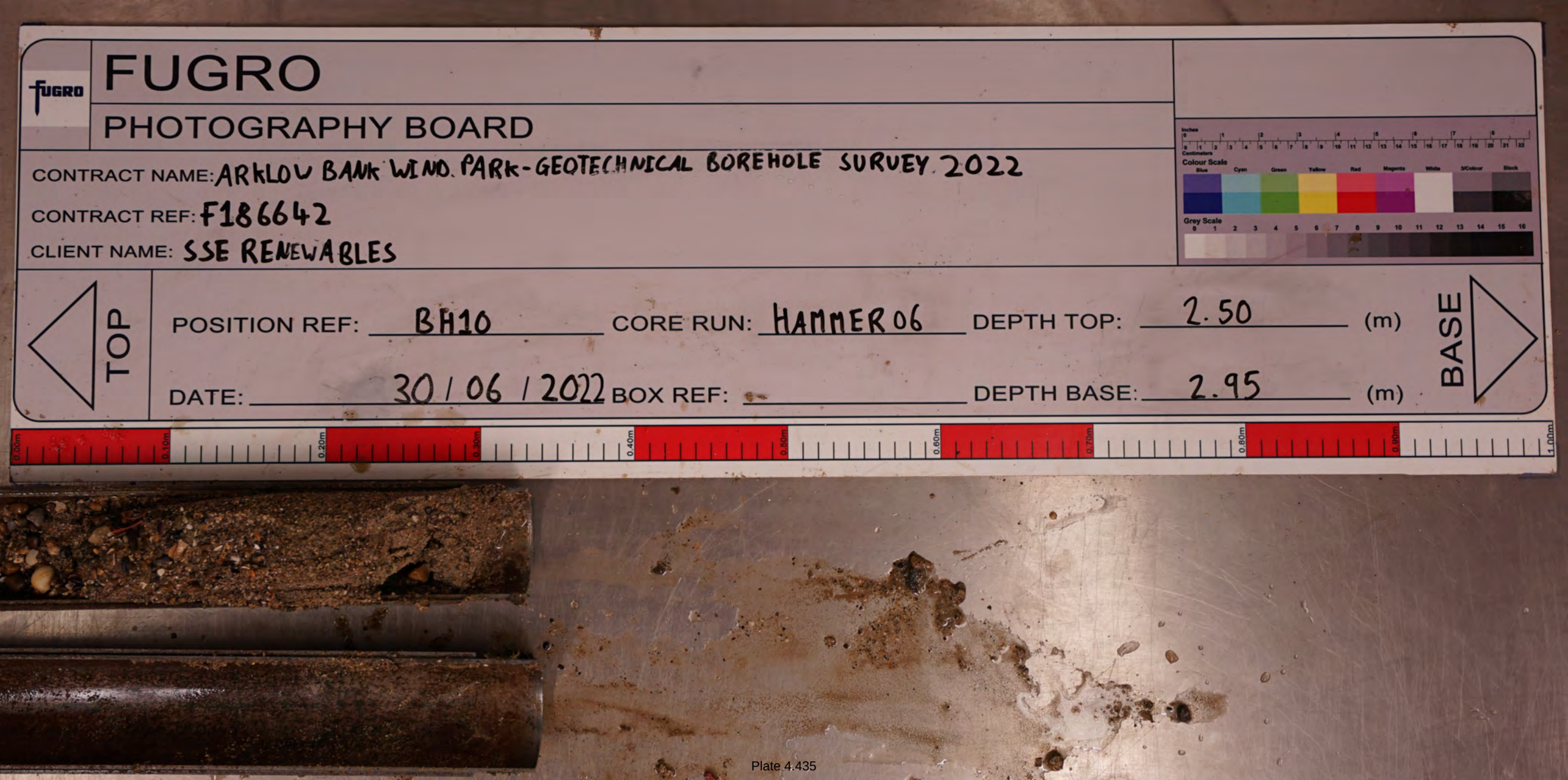
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: HAMMER 05
DEPTH TOP: 2.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 2.45 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m



Plate 4.434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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: HAMMER 06
DEPTH TOP: 2.50 (m)
DATE: 30 / 06 / 2022
BOX REF:
DEPTH BASE: 2.95 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.435

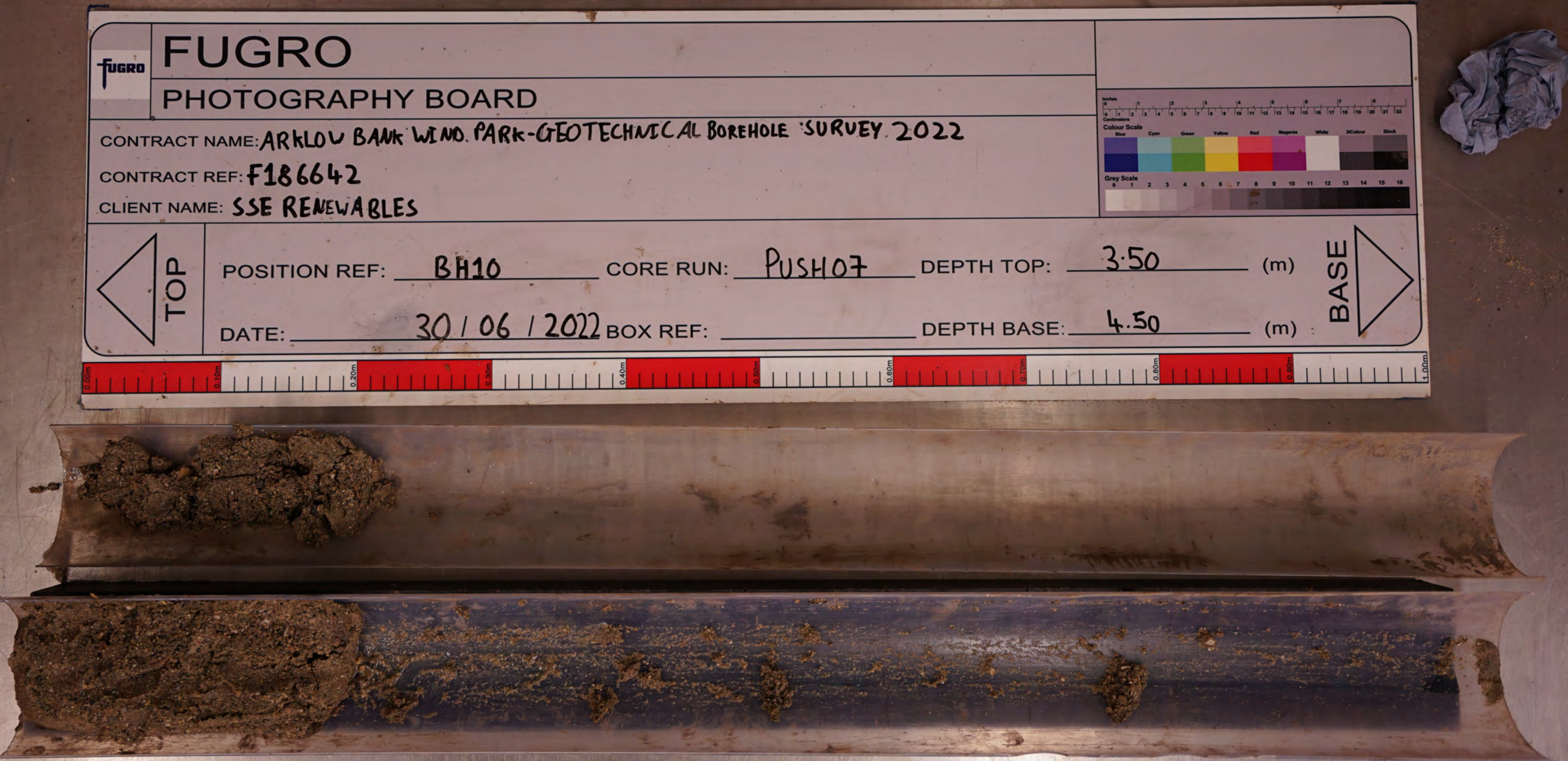

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH07
DEPTH TOP: 3.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.436

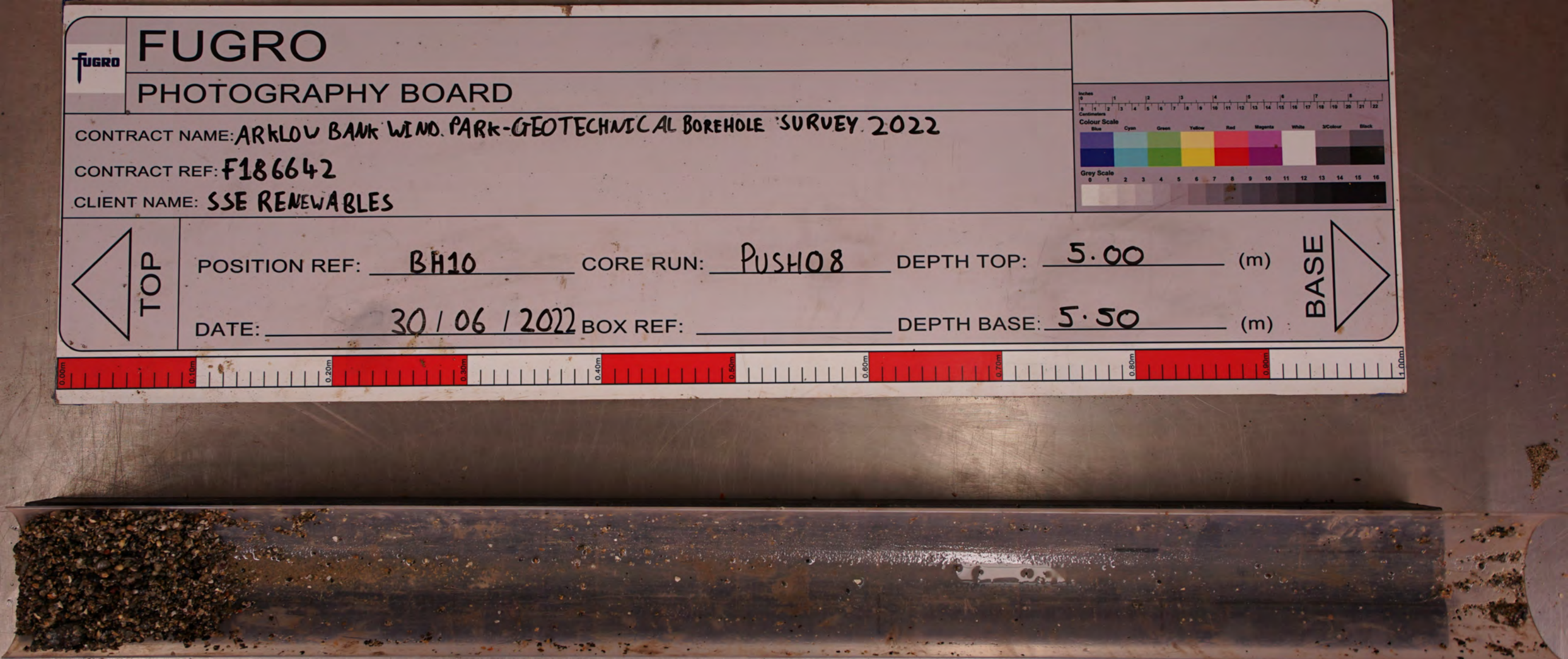
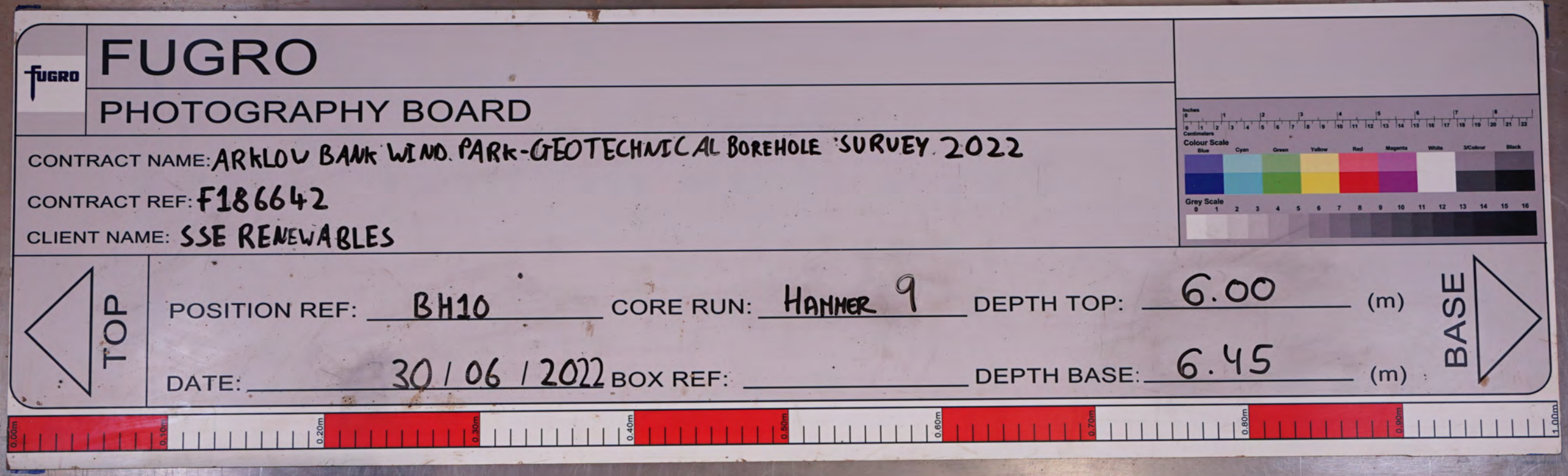

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH08
DEPTH TOP: 5.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 5.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.437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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: HAMMER 9
DEPTH TOP: 6.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 6.45 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.438

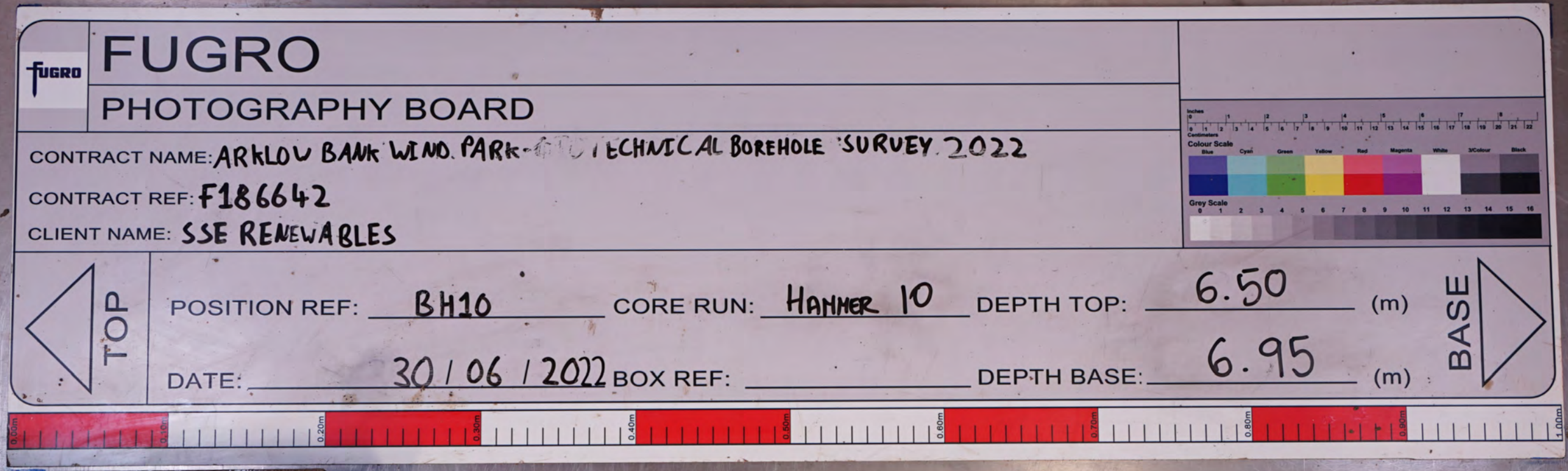
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: HAMMER 10
DEPTH TOP: 6.50 (m)
DATE: 30 / 06 / 2022
BOX REF:
DEPTH BASE: 6.95 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.439

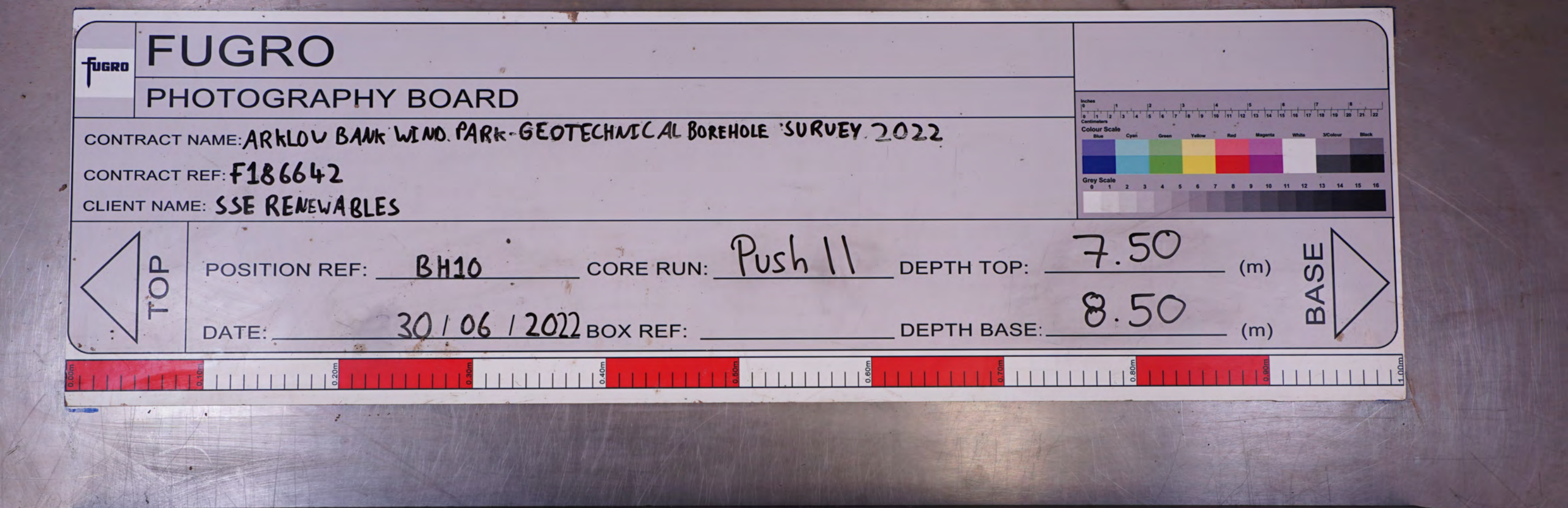
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 11
DEPTH TOP: 7.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 8.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.440

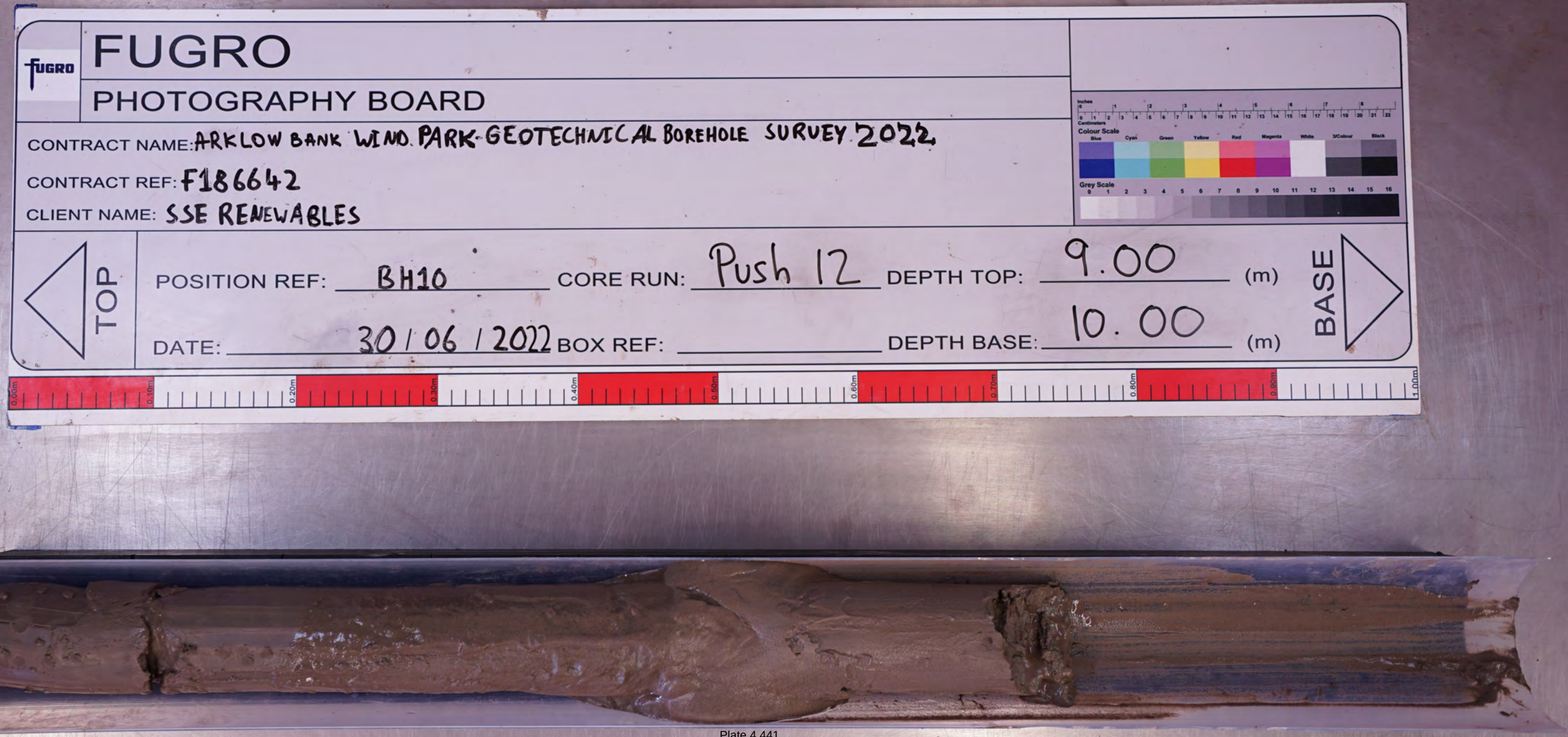
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 12
DEPTH TOP: 9.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 10.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.441

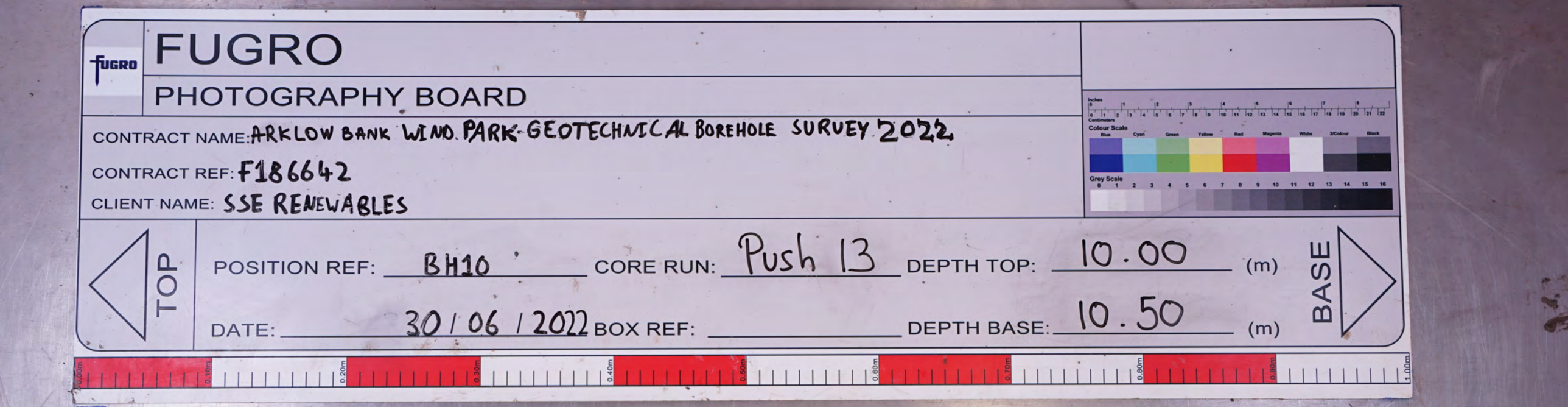
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 13
DEPTH TOP: 10.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 10.50 (m)
BASE
Inches
Centimeters
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.442

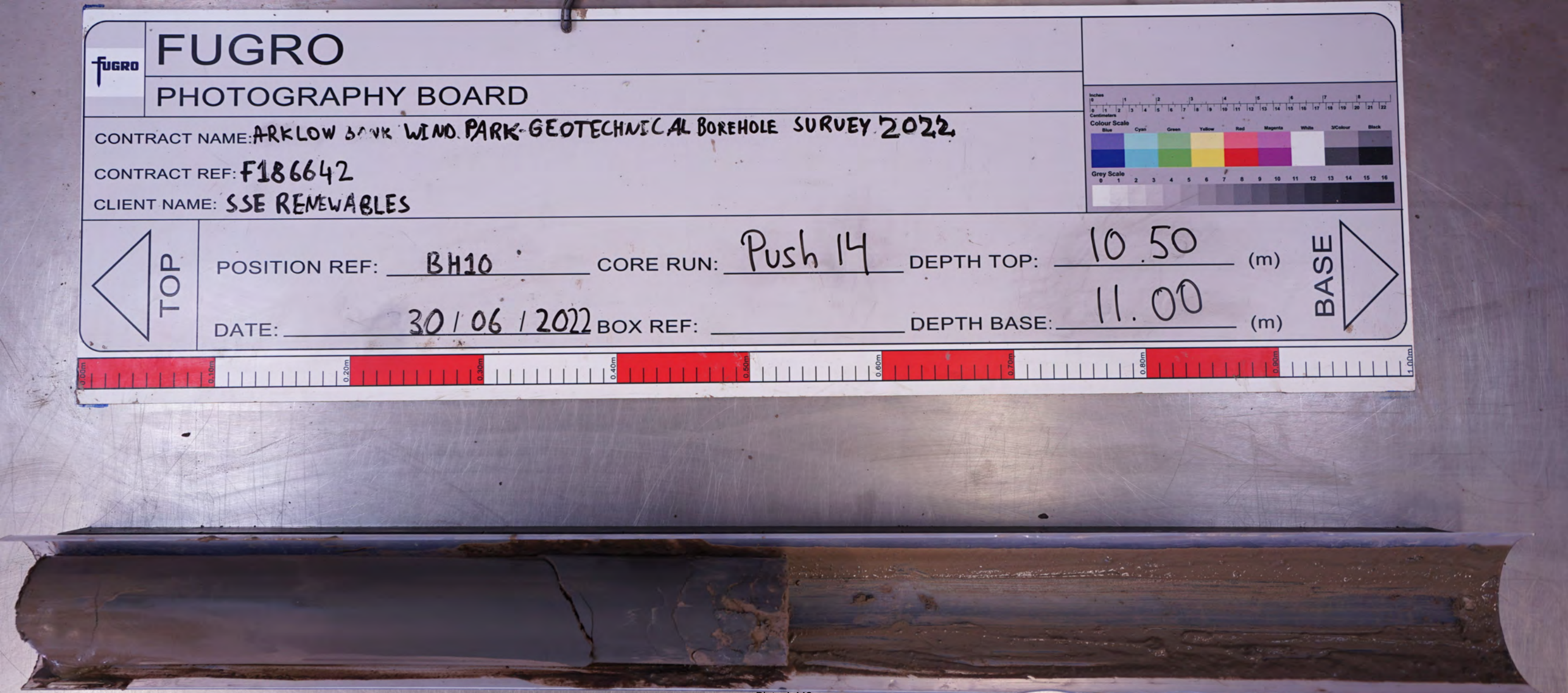
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 14
DEPTH TOP: 10.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.443

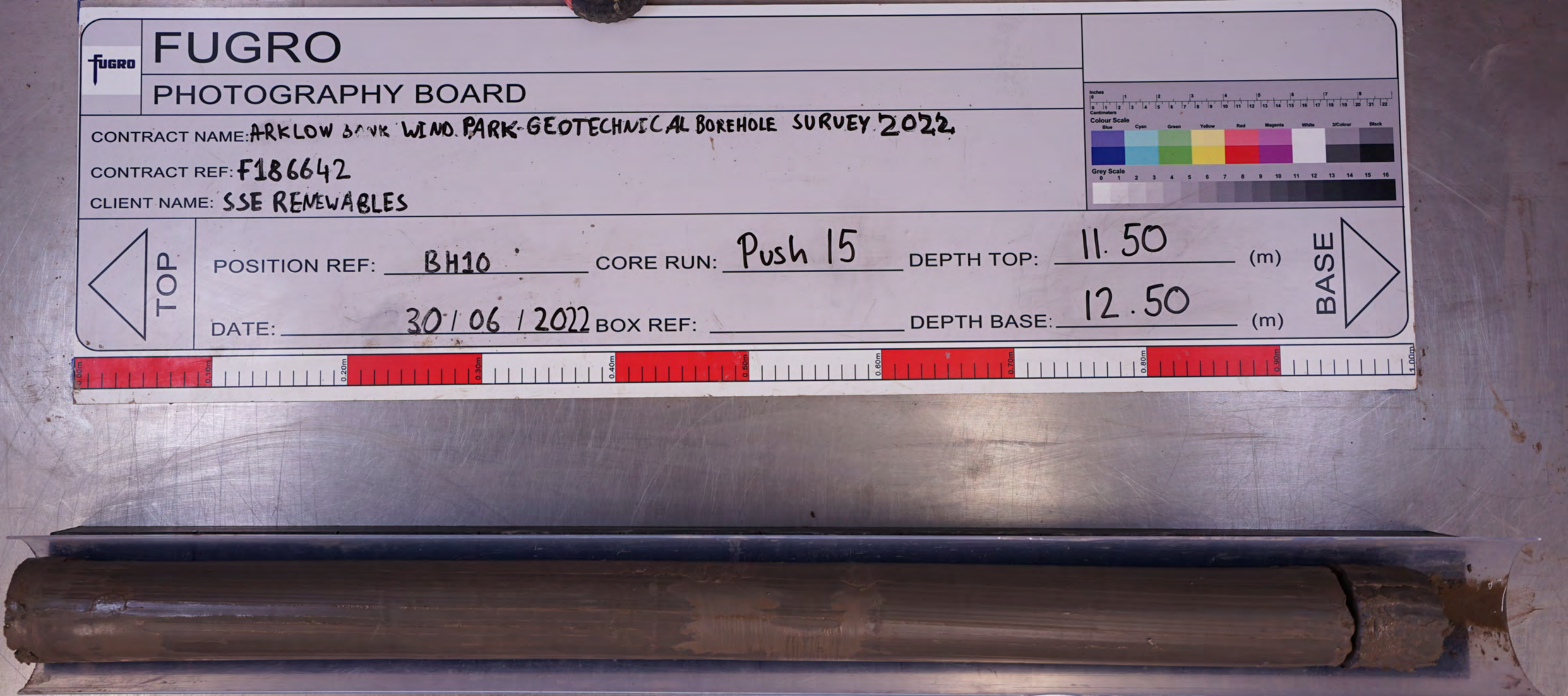
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 15
DEPTH TOP: 11.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 12.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.444

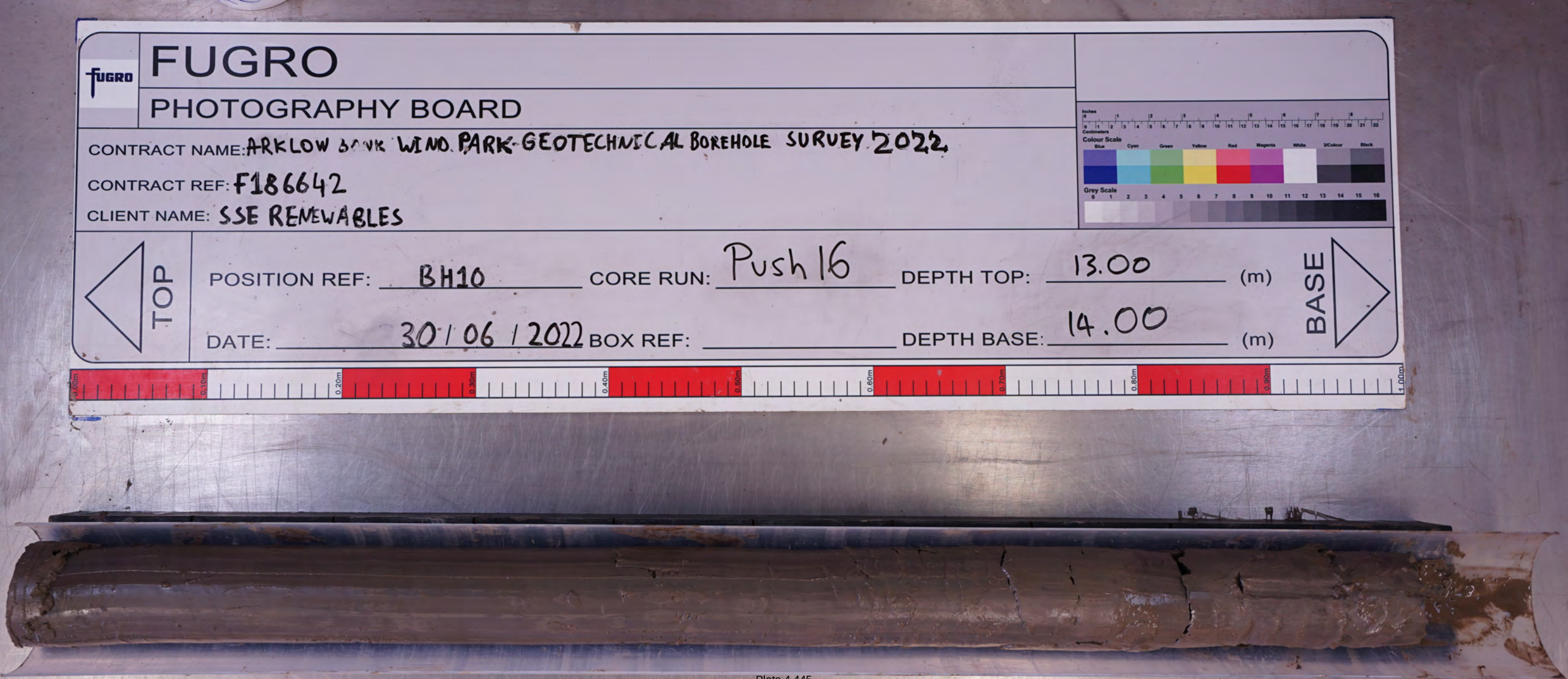
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 16
DEPTH TOP: 13.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.445

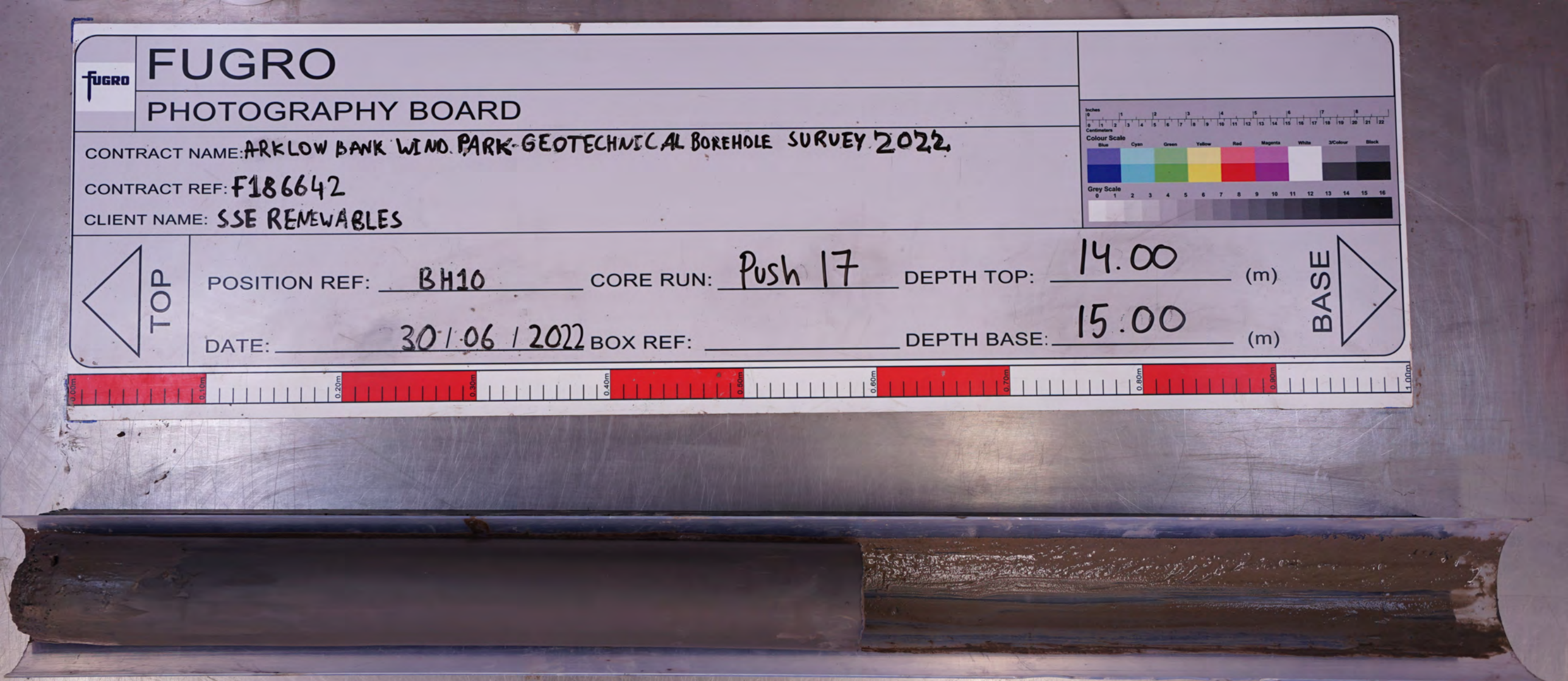
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 17
DEPTH TOP: 14.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 15.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.446

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: Push 18 DEPTH TOP: 15.00 (m)

DATE: 30/06/2022 BOX REF: DEPTH BASE: 15.50 (m)

BASE

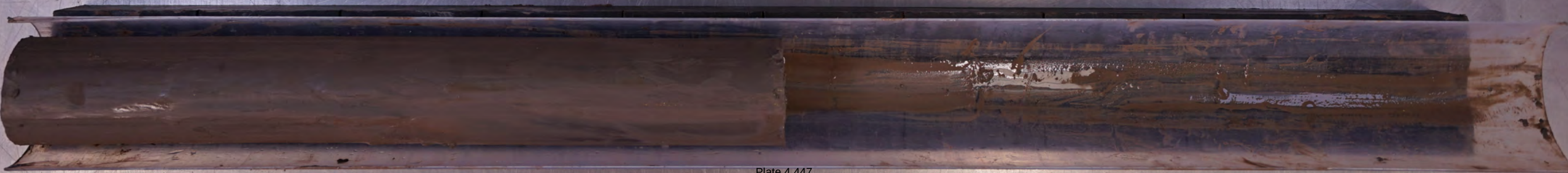

Plate 4.447

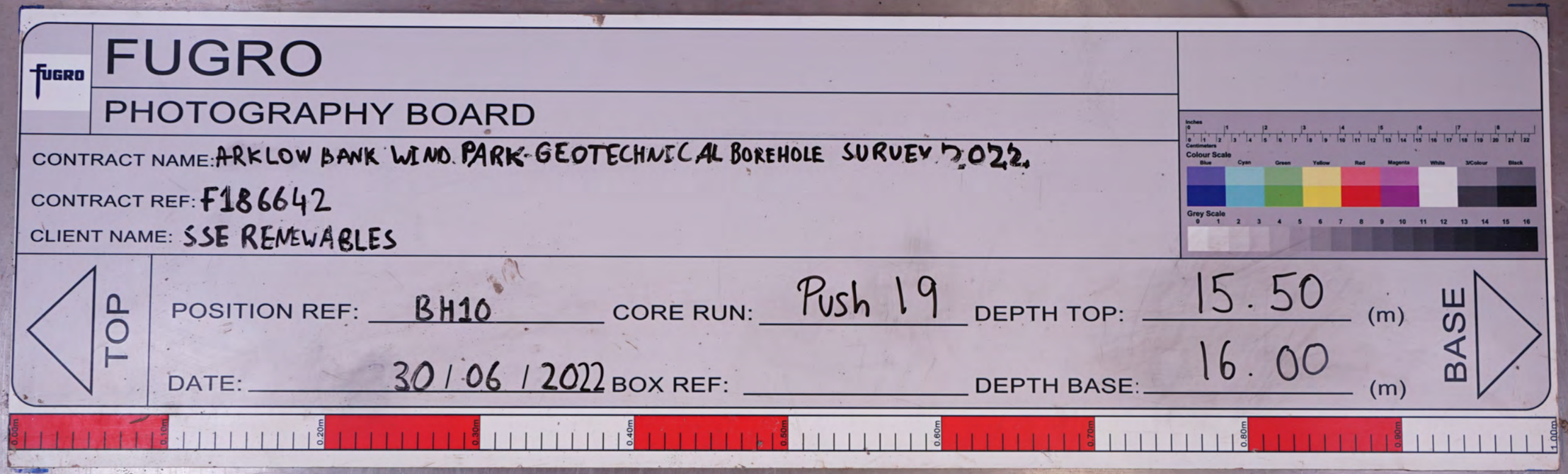
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 19
DEPTH TOP: 15.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 16.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.448

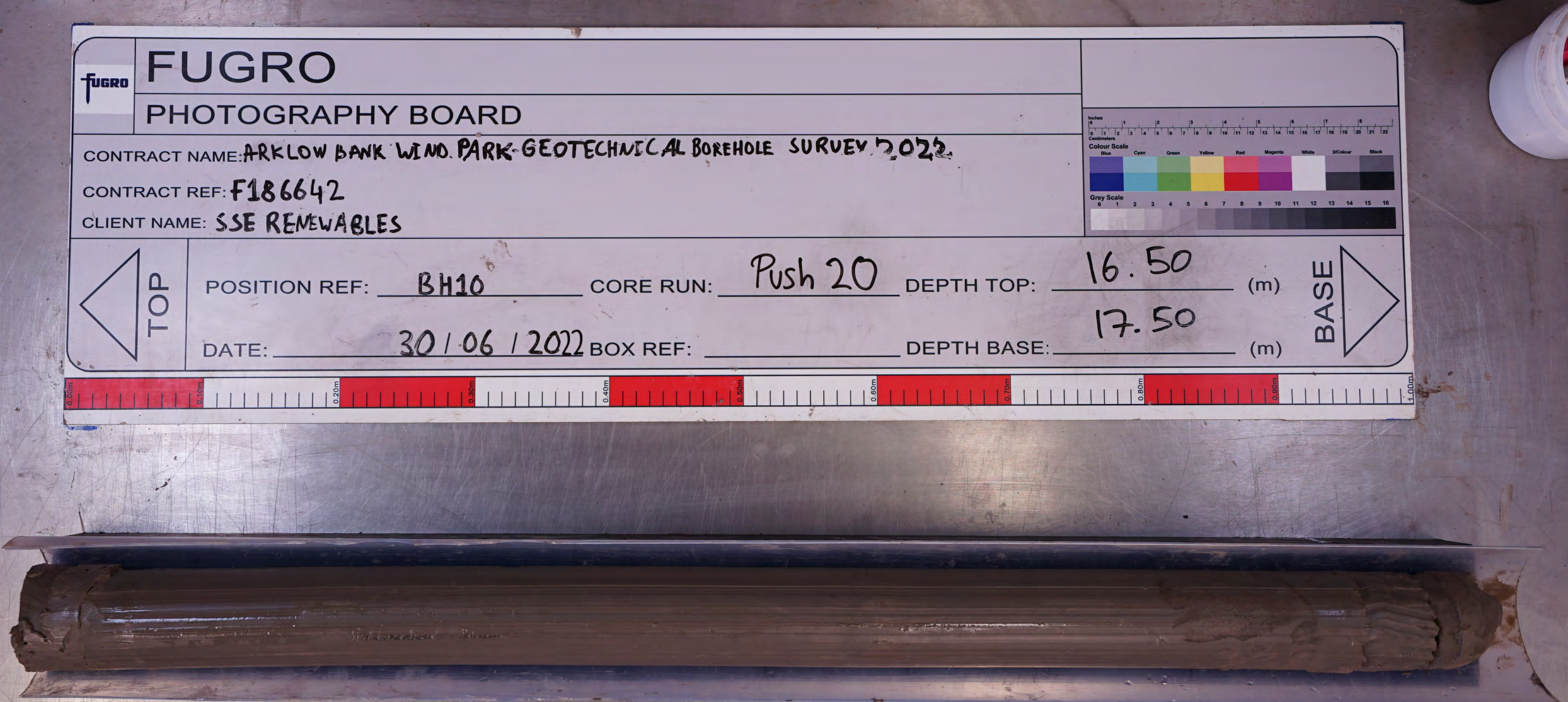
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 20
DEPTH TOP: 16.50 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.449

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: Push 21 DEPTH TOP: 17.50 (m)

DATE: 30/06/2022 BOX REF: DEPTH BASE: 18.00 (m)

BASE



Plate 4.450

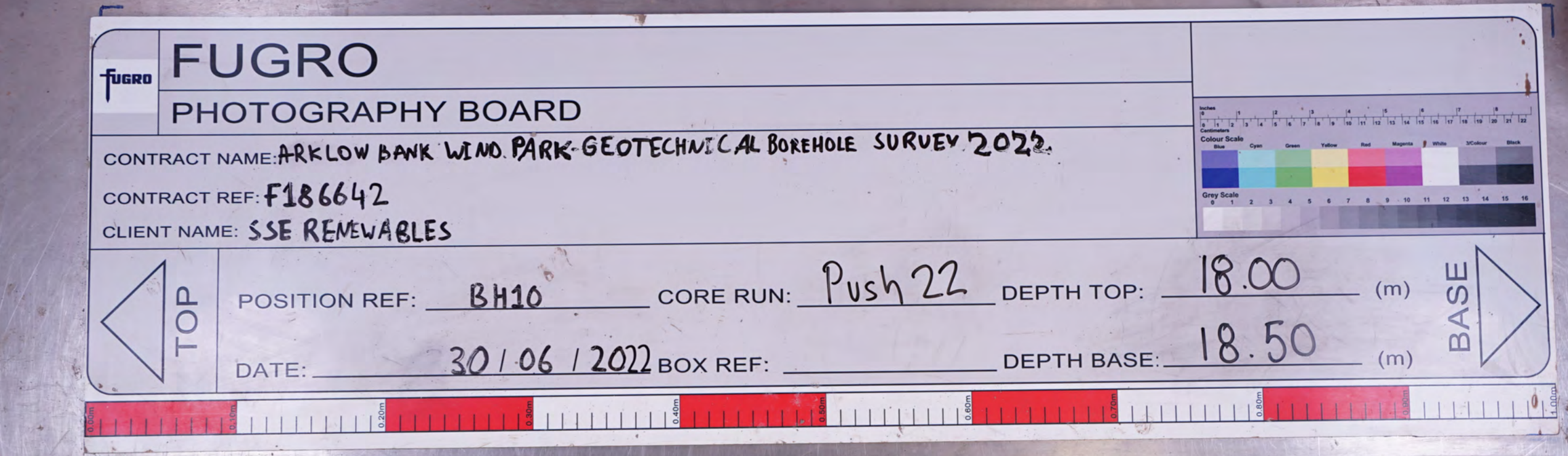
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURUEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: Push 22
DEPTH TOP: 18.00 (m)
DATE: 30/06/2022
BOX REF:
DEPTH BASE: 18.50 (m)
BASE

Plate 4.451

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022.

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: Push 23 DEPTH TOP: 18.50 (m)

DATE: 30 / 06 / 2022 BOX REF: DEPTH BASE: 18.80 (m)

BASE



Plate 4.452

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: AKKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: Push 24 DEPTH TOP: 19.00 (m)

DATE: 30/06/2022 BOX REF: DEPTH BASE: 19.40 (m)

BASE



Plate 4.453

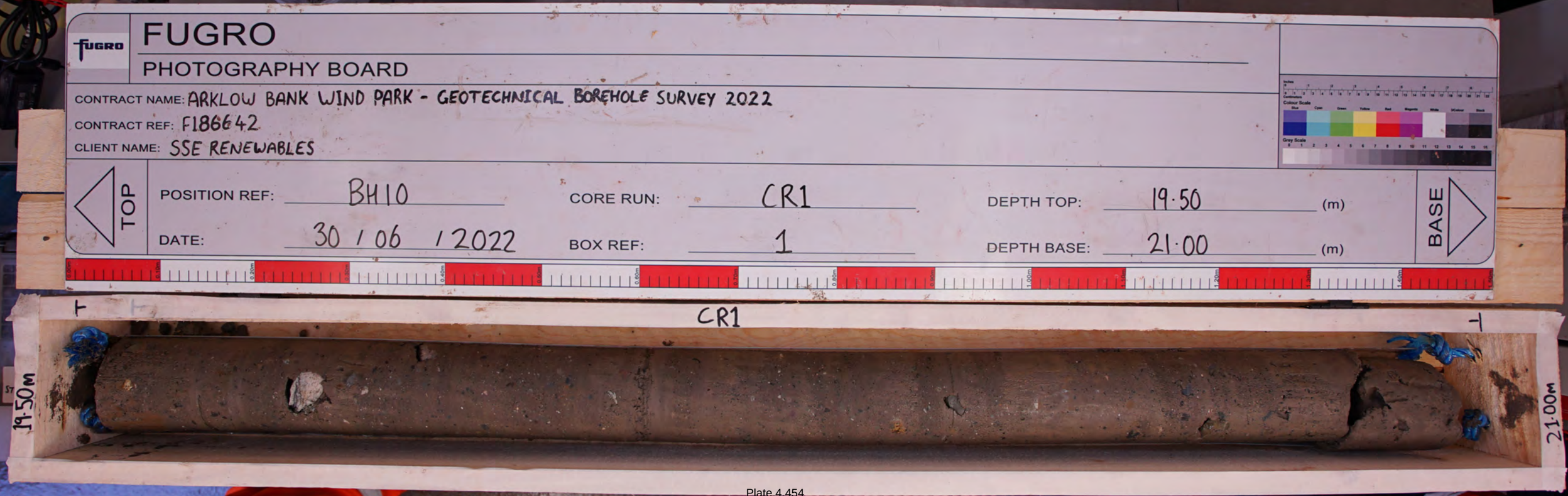
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR1
DEPTH TOP: 19.50 (m)
DATE: 30 / 06 / 2022
BOX REF: 1
DEPTH BASE: 21.00 (m)
BASE
CR1
19.50m
21.00m

Plate 4.454

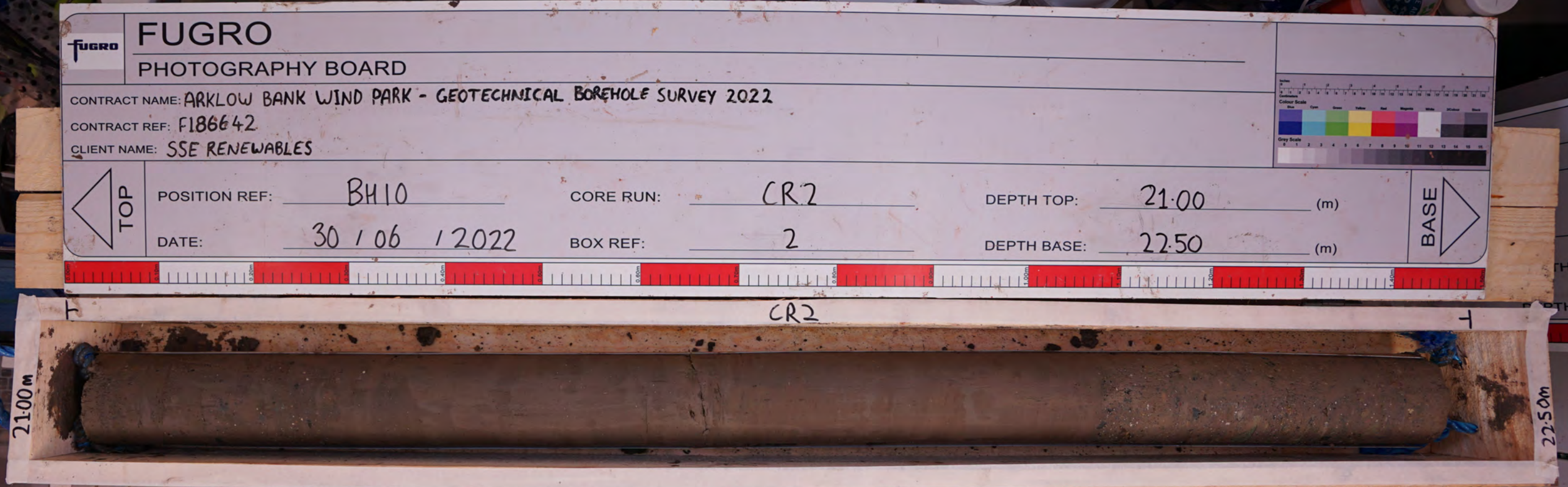
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR2
DEPTH TOP: 21.00 (m)
DATE: 30/06/2022
BOX REF: 2
DEPTH BASE: 22.50 (m)
BASE
CR2
21.00m
22.50m

Plate 4455

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR3

DEPTH TOP: 22.50 (m)

DATE: 30 / 06 / 2022

BOX REF: 3

DEPTH BASE: 24.00 (m)

BASE

CR4

24.00m

25.50m

Plate 4.456


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR3
DEPTH TOP: 22.50 (m)
DATE: 30/06/2022
BOX REF: 3
DEPTH BASE: 24.00 (m)
BASE
AZCL
(22.70m)
CR3
22.50m
24.00m

Plate 4.457

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR4

DEPTH TOP: 24.00 (m)

DATE: 30/06/2022

BOX REF: 4

DEPTH BASE: 25.50 (m)

BASE

CR4

24.00m

25.50m

Plate 4.458


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR4
DEPTH TOP: 24.00 (m)
DATE: 30/06/2022
BOX REF: 4
DEPTH BASE: 25.50 (m)
BASE
CR4
24.00m
25.50m

Plate 4.459


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR5
DEPTH TOP: 25.50 (m)
DATE: 30/06/2022
BOX REF: 5
DEPTH BASE: 27.00 (m)
BASE
CR5
(26.79m)+ A2CL -1
25.50m
27.00m

Plate 4.460


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR5
DEPTH TOP: 25.50 (m)
DATE: 30 / 06 / 2022
BOX REF: 5
DEPTH BASE: 27.00 (m)
BASE
CR5
25.50m
27.00m

Plate 4.461


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR6
DEPTH TOP: 27.00 (m)
DATE: 01/07/2022
BOX REF: 6
DEPTH BASE: 28.50 (m)
BASE
CR6
+(27.37m)
AZCL
27.00m
28.50m

Plate 4.462

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR7

DEPTH TOP: 28.50 (m)

DATE: 01/07/2022

BOX REF: 7

DEPTH BASE: 29.00 (m)

BASE

A2CL (28.90m) CR7

28.50m

29.00m



Plate 4.463

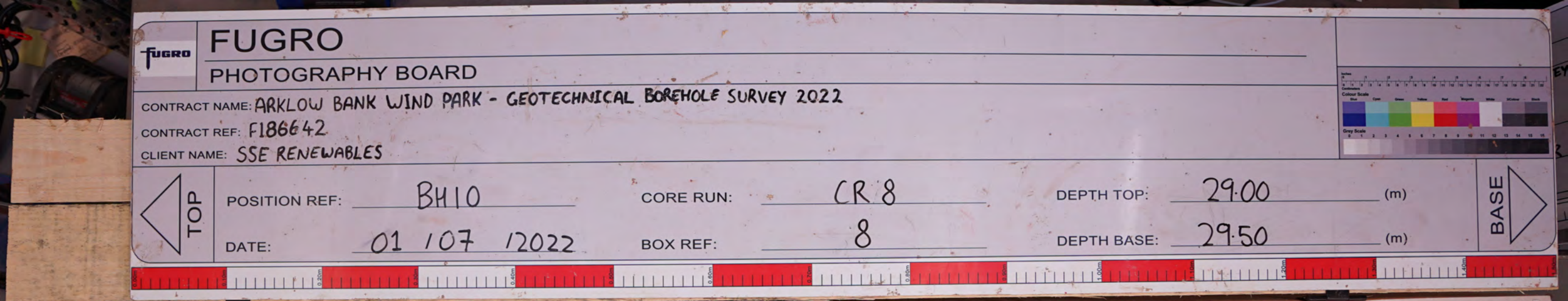
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 / 07 / 2022
CORE RUN: CR8
BOX REF: 8
DEPTH TOP: 29.00 (m)
DEPTH BASE: 29.50 (m)
BASE
CR8 (29.00m) AZCL
29.00m
29.50m

Plate 4.464

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR9

DEPTH TOP: 29.50 (m)

DATE: 01/07/2022

BOX REF: 9

DEPTH BASE: (30.44) (m)

BASE

CUTTINGS

CR9

+ CORE DROPPED INTO BOX 10

29.50m

(30.44m)

Plate 4.465

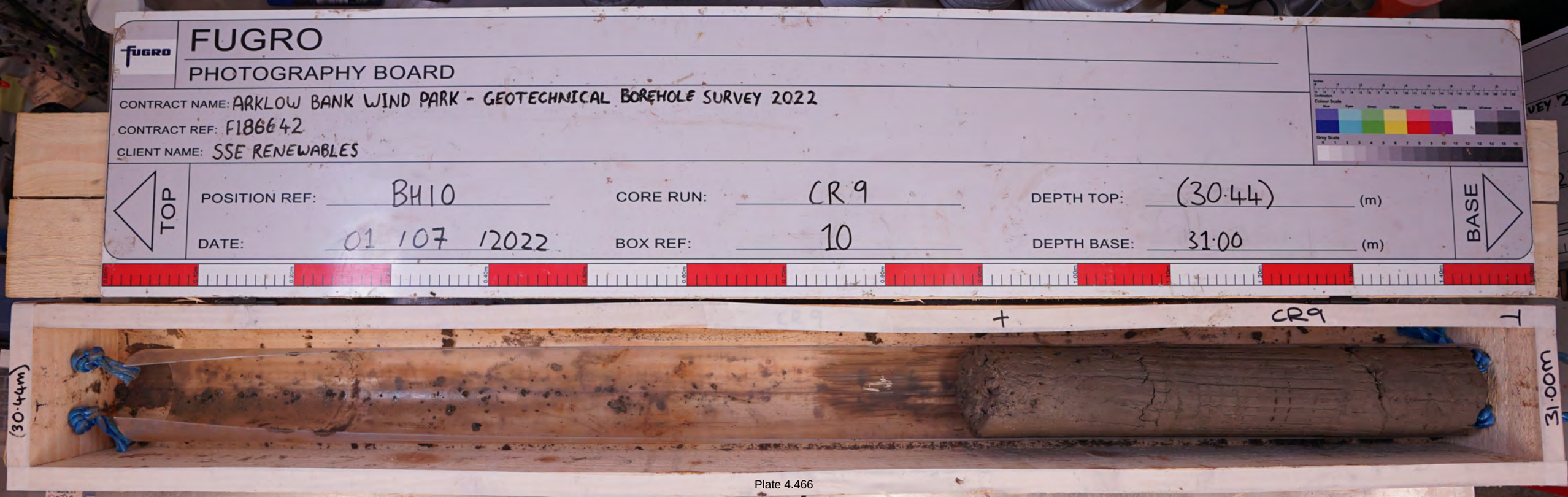
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR9
DEPTH TOP: (30.44) (m)
DATE: 01/07/2022
BOX REF: 10
DEPTH BASE: 31.00 (m)
BASE
CR9
(30.44m)
31.00m

Plate 4.466


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR9
DEPTH TOP: (30.44) (m)
DATE: 01 /07 /2022
BOX REF: 10
DEPTH BASE: 31.00 (m)
BASE
CR9
(30.44m)
31.00m

Plate 4.467

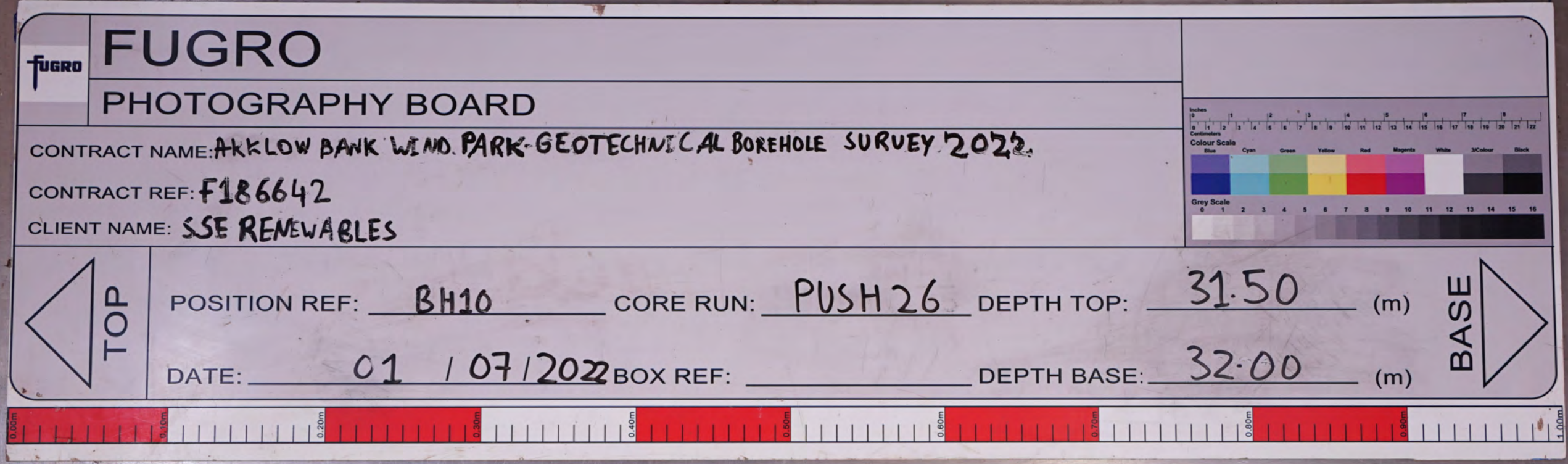
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: AKKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH 26
DEPTH TOP: 31.50 (m)
DATE: 01 / 07 / 2022
BOX REF:
DEPTH BASE: 32.00 (m)
BASE
NO RECOVERY

Plate 4.468

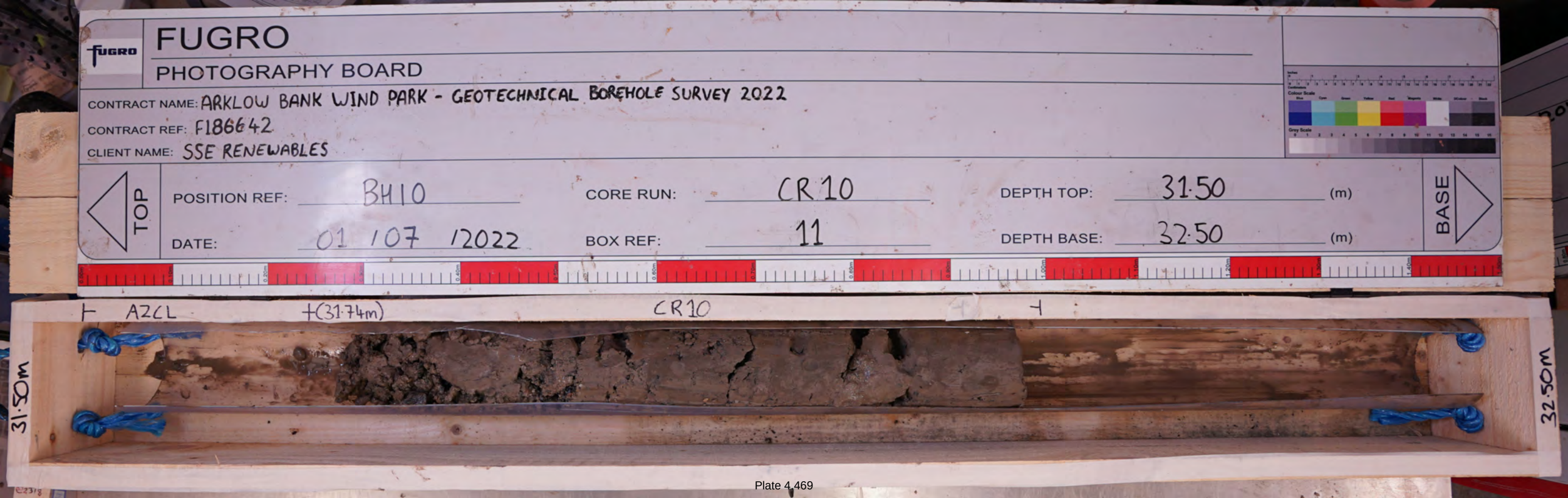
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01/07/2022
CORE RUN: CR10
BOX REF: 11
DEPTH TOP: 31.50 (m)
DEPTH BASE: 32.50 (m)
BASE
A2CL
+(31.74m)
CR10
31.50m
32.50m

Plate 4.469


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR10
DEPTH TOP: 31.50 (m)
DATE: 01/07/2022
BOX REF: 11
DEPTH BASE: 32.50 (m)
BASE
AZCL
+(31.74m)
CR10
31.50m
32.50m

Plate 4.470

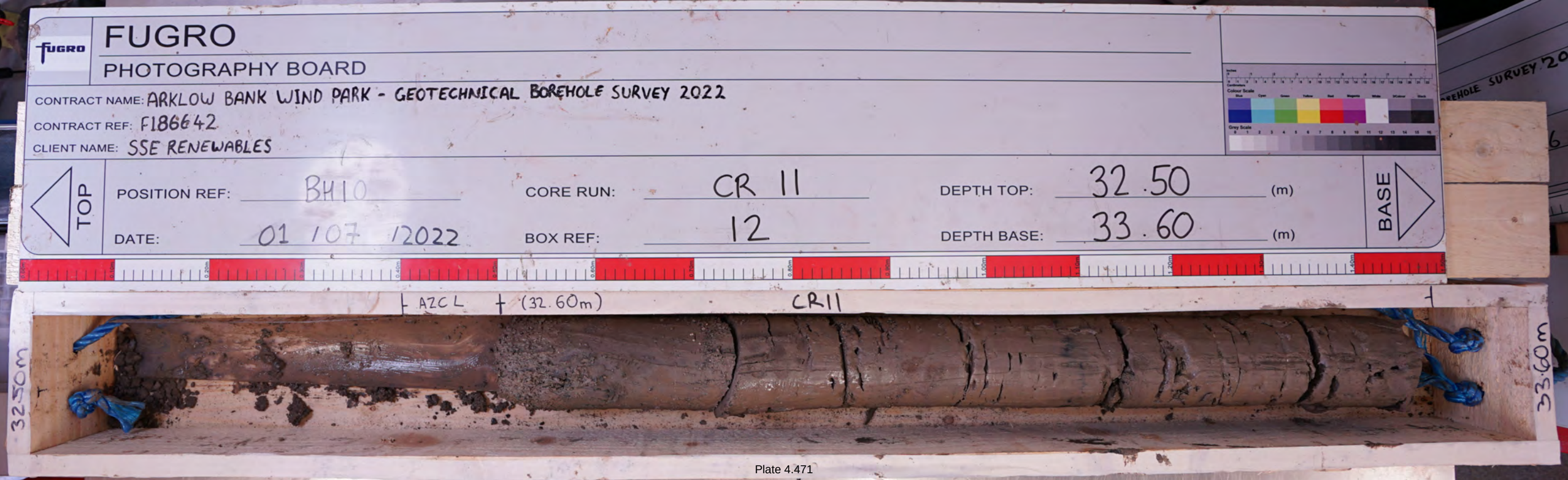
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 11
DEPTH TOP: 32.50 (m)
DATE: 01/07/2022
BOX REF: 12
DEPTH BASE: 33.60 (m)
BASE
AZCL (32.60m)
CR11
32.50m
33.60m

Plate 4.471


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 11
DEPTH TOP: 32.50 (m)
DATE: 01/07/2022
BOX REF: 12
DEPTH BASE: 33.60 (m)
BASE
AZCL (32.60m)
CR11
32.50m
33.60m

Plate 4.472

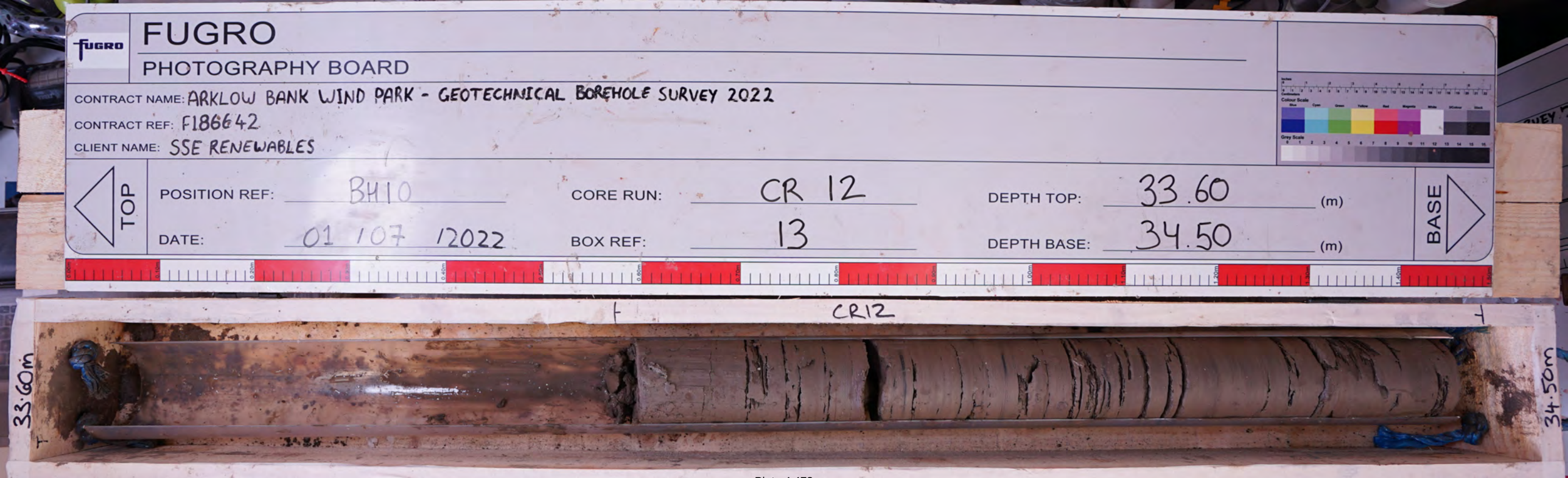
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 12
DEPTH TOP: 33.60 (m)
DATE: 01/07/2022
BOX REF: 13
DEPTH BASE: 34.50 (m)
BASE
CR12
33.60m
34.50m

Plate 4.473


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 12
DEPTH TOP: 33.60 (m)
DATE: 01/07/2022
BOX REF: 13
DEPTH BASE: 34.50 (m)
BASE
CR12
33.60m
34.50m

Plate 4.474

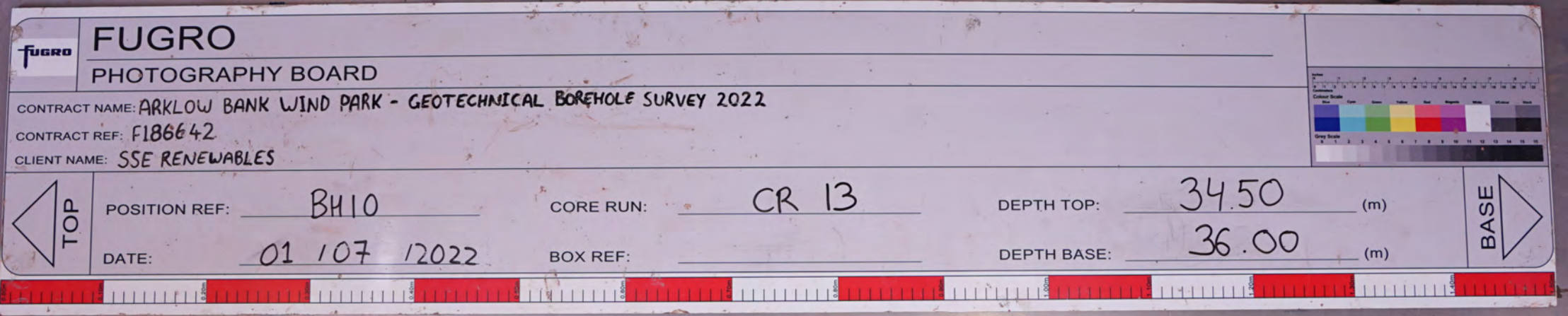
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 13
DEPTH TOP: 34.50 (m)
DATE: 01 /07 /2022
BOX REF:
DEPTH BASE: 36.00 (m)
BASE
NO RECOVERY

Plate 4.475

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 /07 /2022

CORE RUN: CR 14

BOX REF: 14

DEPTH TOP: 35.00 (m)

DEPTH BASE: 36.50 (m)

BASE



Plate 4.476


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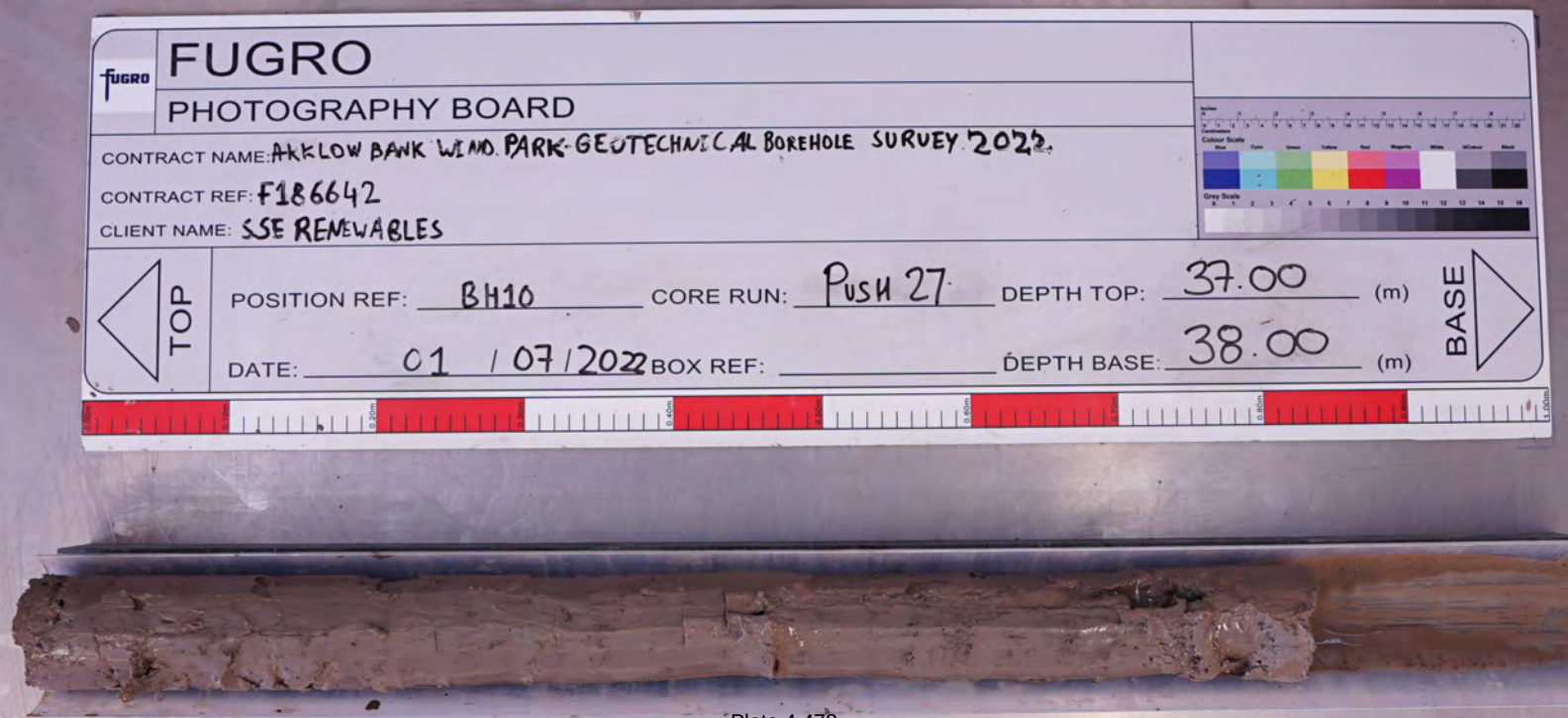
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 14
DEPTH TOP: 35.00 (m)
DATE: 01 / 07 / 2022
BOX REF: 14
DEPTH BASE: 36.50 (m)
BASE
35.00
36.50

Plate 4.477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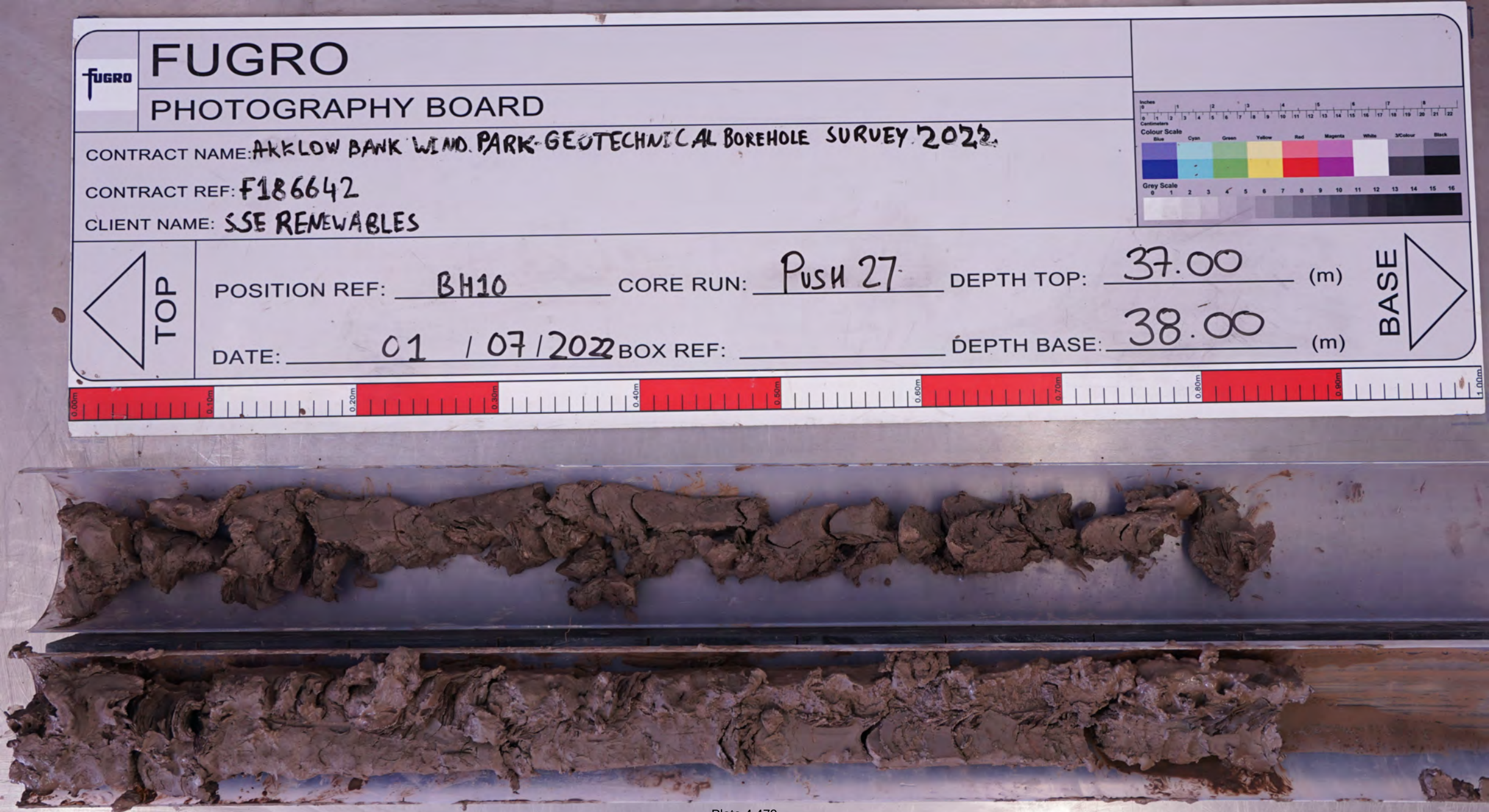
PHOTOGRAPHY BOARD
CONTRACT NAME: AKKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH 27
DEPTH TOP: 37.00 (m)
DATE: 01/07/2022
BOX REF:
DEPTH BASE: 38.00 (m)
BASE

Plate 4.478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PHOTOGRAPHY BOARD
CONTRACT NAME: AKKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH 27
DEPTH TOP: 37.00 (m)
DATE: 01 / 07 / 2022
BOX REF:
DEPTH BASE: 38.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.479


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PHOTOGRAPHY BOARD
CONTRACT NAME: AKKLOW BANK WIND PARK-GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH 28
DEPTH TOP: 38.00 (m)
DATE: 01 / 07 / 2022
BOX REF:
DEPTH BASE: 38.40 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.480

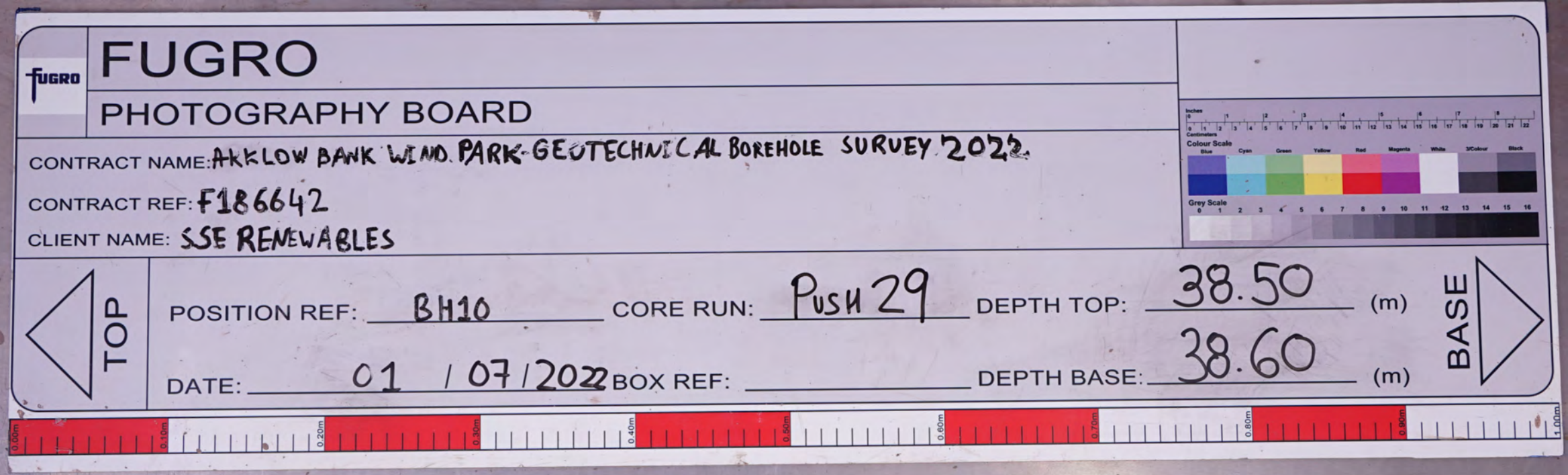
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: AKKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022.
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: PUSH 29
DEPTH TOP: 38.50 (m)
DATE: 01 / 07 / 2022
BOX REF:
DEPTH BASE: 38.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m



Plate 4.481

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 / 07 / 2022

CORE RUN: CR 15

BOX REF: 15

DEPTH TOP: 38.50 (m)

DEPTH BASE: 40.00 (m)

BASE

AZCL

+(39.50m)

38.50 m

40.00 m

39.70

39.75

Plate 4.482

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 / 07 / 2022

CORE RUN: CR 16

BOX REF: 16

DEPTH TOP: 40.00 (m)

DEPTH BASE: 41.00 (m)

BASE

CR 16 (40.45m) AZCL

40.00m

41.00m



Plate 4.483


FUGRO
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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 16
DEPTH TOP: 40.00 (m)
DATE: 01/07/2022
BOX REF: 16
DEPTH BASE: 41.00 (m)
BASE
CR 16 (40.45m) AZCL
40.00m
41.00m

Plate 4.484

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: AKKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: PUSH 30 DEPTH TOP: 41.00 (m)

DATE: 01 / 07 / 2022 BOX REF: _____ DEPTH BASE: 41.10 (m)

BASE

NO RECOVERY

Plate 4.485


FUGRO
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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 /07 /2022
CORE RUN: CR 17
BOX REF: 17
DEPTH TOP: 41.00 (m)
DEPTH BASE: 41.75 (m)
BASE
F CR 17 (41.40m) AZCL
41.00 m
41.75 m

Plate 4.486

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 / 07 / 2022

CORE RUN: CR 18

BOX REF: 18

DEPTH TOP: 41.75 (m)

DEPTH BASE: 42.50 (m)

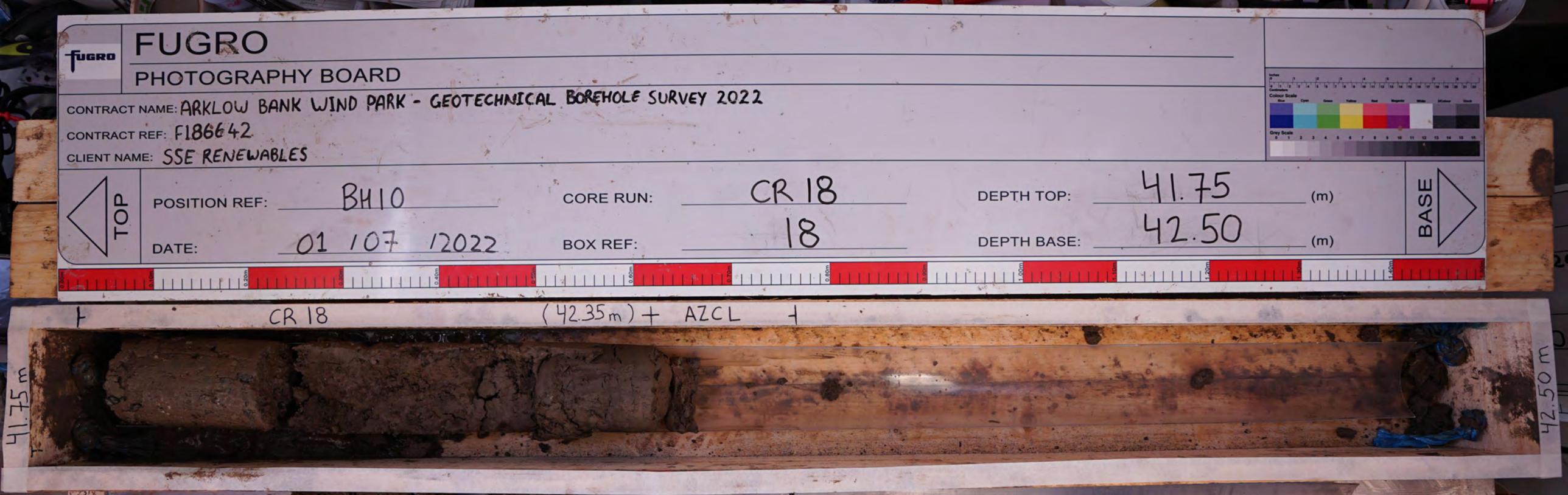
BASE

CR 18 (42.35m) + AZCL

41.75m

42.50m

Plate 4.487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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 18
DEPTH TOP: 41.75 (m)
DATE: 01 /07 /2022
BOX REF: 18
DEPTH BASE: 42.50 (m)
BASE
CR 18 (42.35m) + AZCL
41.75m
42.50m

Plate 4.488


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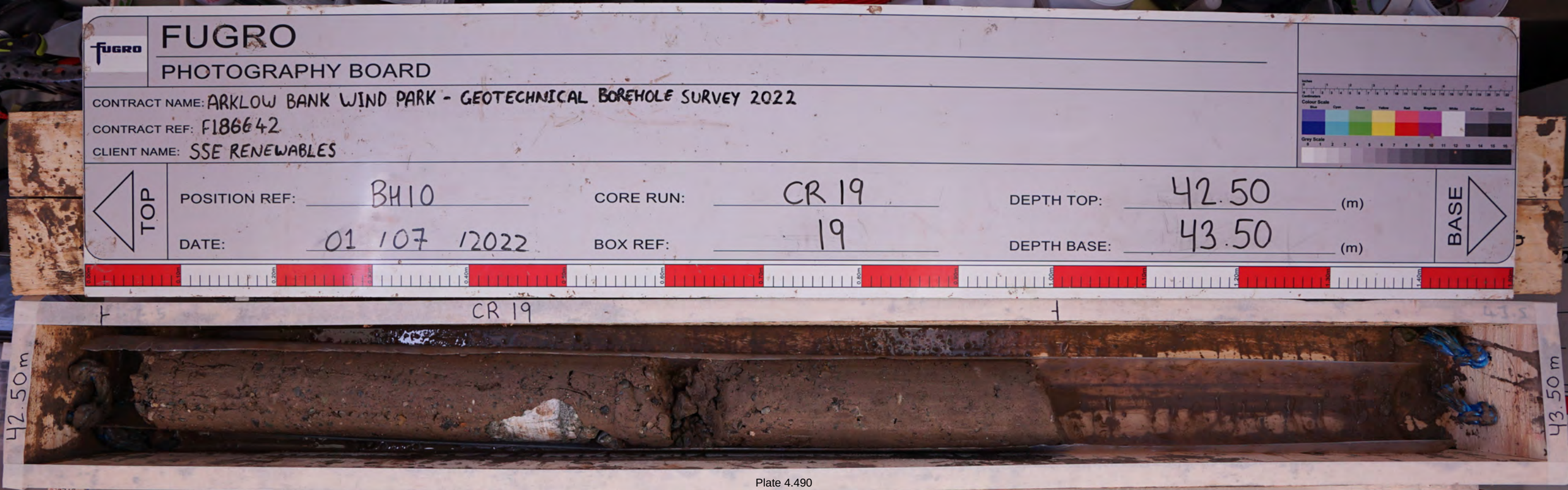
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR 19
DEPTH TOP: 42.50 (m)
DATE: 01 /07 /2022
BOX REF: 19
DEPTH BASE: 43.50 (m)
BASE
CR 19
42.50m
43.50m

Plate 4.489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PHOTOGRAPHY BOARD
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 /07 /2022
CORE RUN: CR 19
BOX REF: 19
DEPTH TOP: 42.50 (m)
DEPTH BASE: 43.50 (m)
BASE
CR 19
42.50m
43.50m

Plate 4.490


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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 /07 /2022
CORE RUN: CR20
BOX REF: 20
DEPTH TOP: 43.50 (m)
DEPTH BASE: 44.50 (m)
BASE
AZL (43.60m)
CR20
43.50m
44.50m

Plate 4.491

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CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01/07/2022

CORE RUN: CR21

BOX REF: 21

DEPTH TOP: 44.50 (m)

DEPTH BASE: 45.00 (m)

BASE

CR21

44.50m

45.00m

Plate 4.492


NO RECOVERY
NOT EXTRUDED
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
CORE RUN: CR22
DEPTH TOP: 45.00 (m)
DATE: 01/07/2022
BOX REF: 22
DEPTH BASE: 46.50 (m)
BASE
CR22
45.00m
46.50m
STRATA

Plate 4.493


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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 /07 /2022
CORE RUN: CR23
BOX REF: 23
DEPTH TOP: 46.50 (m)
DEPTH BASE: 48.00 (m)
BASE
AZCL
(46.80m)
CR 23
46.50m
48.00m

Plate 4.494


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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 01 /07 /2022
CORE RUN: CR24
BOX REF: 24
DEPTH TOP: 48.00 (m)
DEPTH BASE: 49.50 (m)
BASE
A2CL
+(48.99m)
CR24
48.00m
49.50m

Plate 4.495

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 /07 /2022

CORE RUN: CR25

BOX REF: 25

DEPTH TOP: 49.50 (m)

DEPTH BASE: 51.00 (m)

BASE

CR25

49.50m

51.00m

Plate 4.496

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 / 07 / 2022

CORE RUN: CR26

BOX REF: 26

DEPTH TOP: 51.00 (m)

DEPTH BASE: 52.50 (m)

BASE

A2CL

+(51.18m)

CR26

51.00m

52.50

Plate 4.497

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10 CORE RUN: CR27 DEPTH TOP: 52.50 (m)

DATE: 01/07/2022 BOX REF: 27 DEPTH BASE: (53.68) (m)

BASE

52.5

CUTTINGS + AZCL NTS + (52.75m) CR27 + Slipped core

52.50 m

(53.43m)



Plate 4.498

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 01 / 07 / 2022

CORE RUN: CR 27+28

BOX REF: 28

DEPTH TOP: (53.43) (m)

DEPTH BASE: (54.90) (m)

BASE

+ CR27 +54.00m CR 28 +Slipped core

(53.43m)

(54.90m)



Plate 4.499

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR28+29

DEPTH TOP: (54.90) (m)

DATE: 02/07/2022

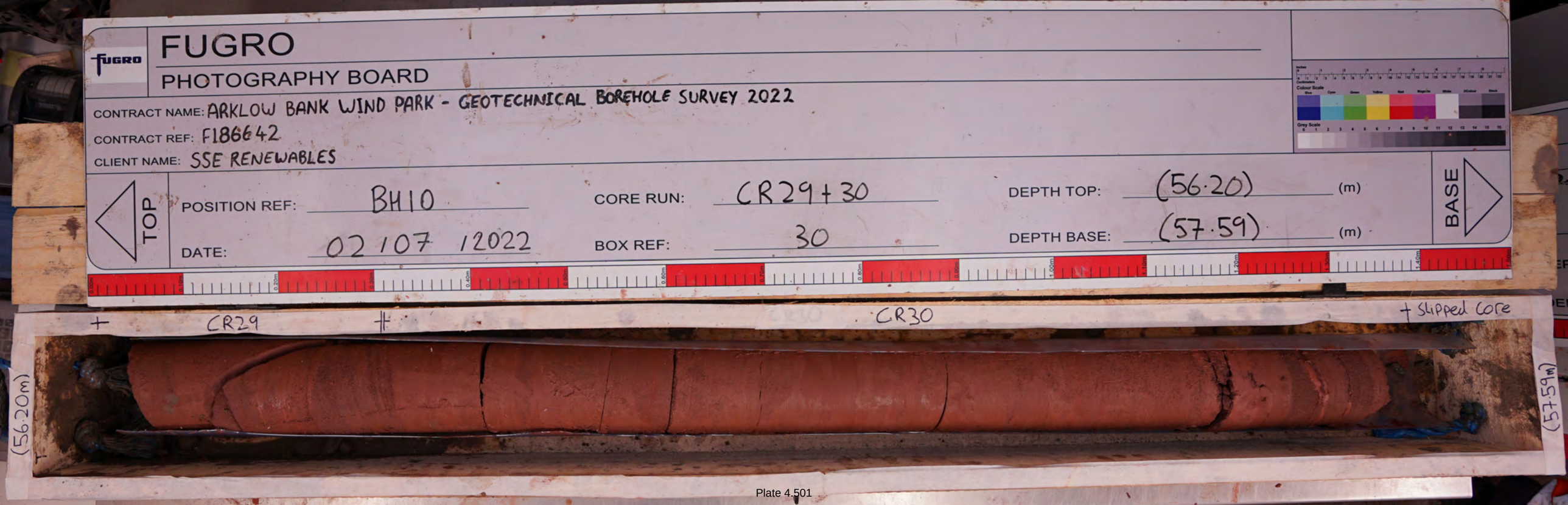
BOX REF: 29

DEPTH BASE: (56.20) (m)

BASE



Plate 4.500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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 02/07/2022
CORE RUN: CR29+30
BOX REF: 30
DEPTH TOP: (56.20) (m)
DEPTH BASE: (57.59) (m)
BASE
CR29
CR30
+ Slipped Core
(56.20m)
(57.59m)

Plate 4.501

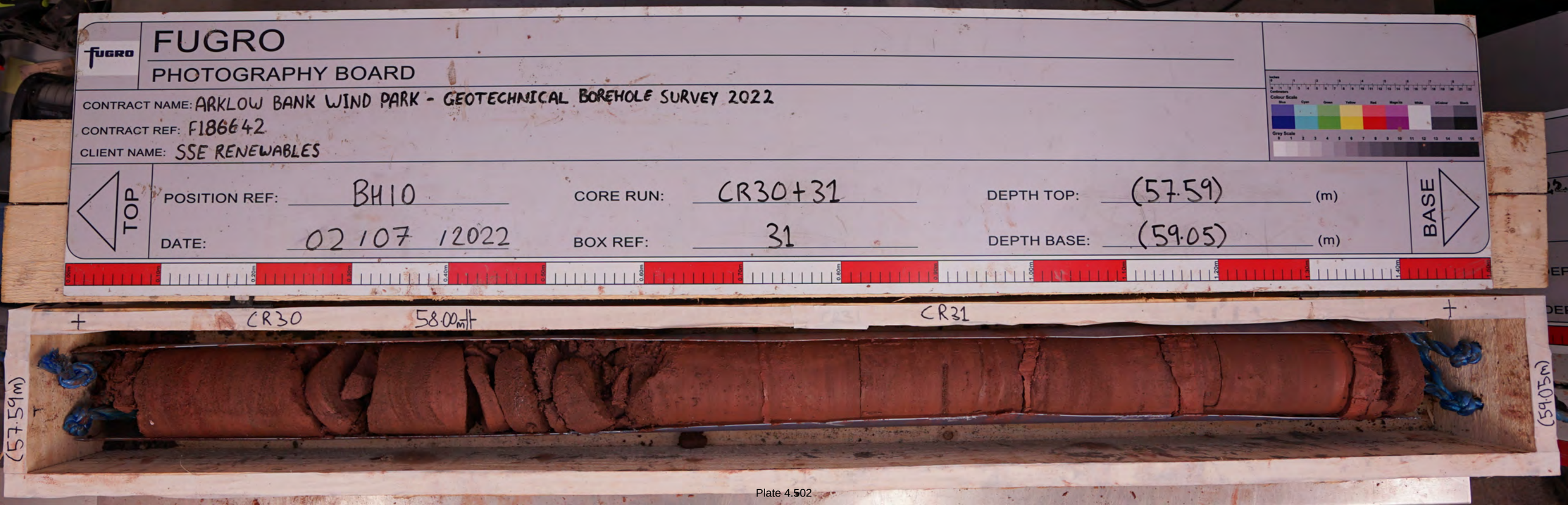
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 02/07/2022
CORE RUN: CR30+31
BOX REF: 31
DEPTH TOP: (57.59) (m)
DEPTH BASE: (59.05) (m)
BASE
CR30
58.00m
CR31
(57.59m)
(59.05m)

Plate 4.502

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CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

CORE RUN: CR31+32

DEPTH TOP: (59.05) (m)

DATE: 02/07/2022

BOX REF: 32

DEPTH BASE: 60.50 (m)

BASE

CR31 59.50m CR32 (60.30m) AZCL

(59.05m)

60.50m

Plate 4.503

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CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH10

DATE: 02/07/2022

CORE RUN: CR33

BOX REF: 33

DEPTH TOP: 60.50 (m)

DEPTH BASE: 61.50 (m)

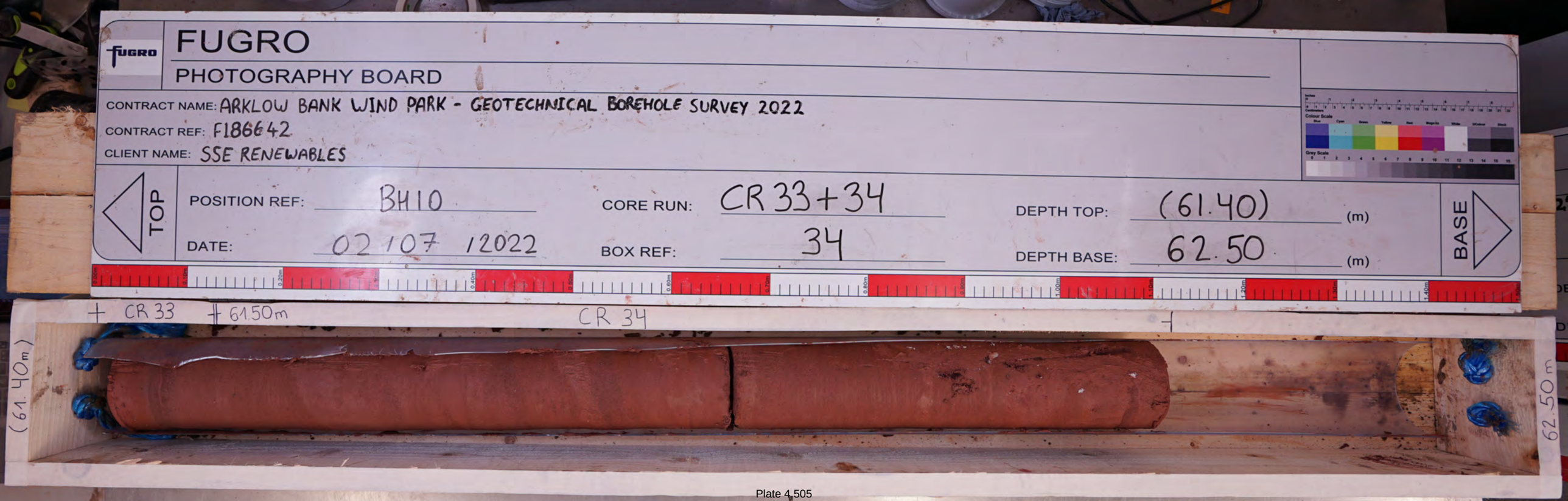
BASE

CR33 (61.40m) Slipped Core

60.50m

61.50m

Plate 4.504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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH10
DATE: 02/07/2022
CORE RUN: CR33+34
BOX REF: 34
DEPTH TOP: (61.40) (m)
DEPTH BASE: 62.50 (m)
BASE
CR 33
61.50m
CR 34
(61.40m)
62.50m

Plate 4.505

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: HAMMER 3 DEPTH TOP: 0.50 (m)

DATE: 20/06/22 BOX REF: DEPTH BASE: 0.95 (m)

BASE

NO RECOVERY

Plate 4.506

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CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 2 DEPTH TOP: 0.50 (m)

DATE: 20/06/22 BOX REF: DEPTH BASE: 1.00 (m)

BASE

NO RECOVERY

Plate 4.507

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

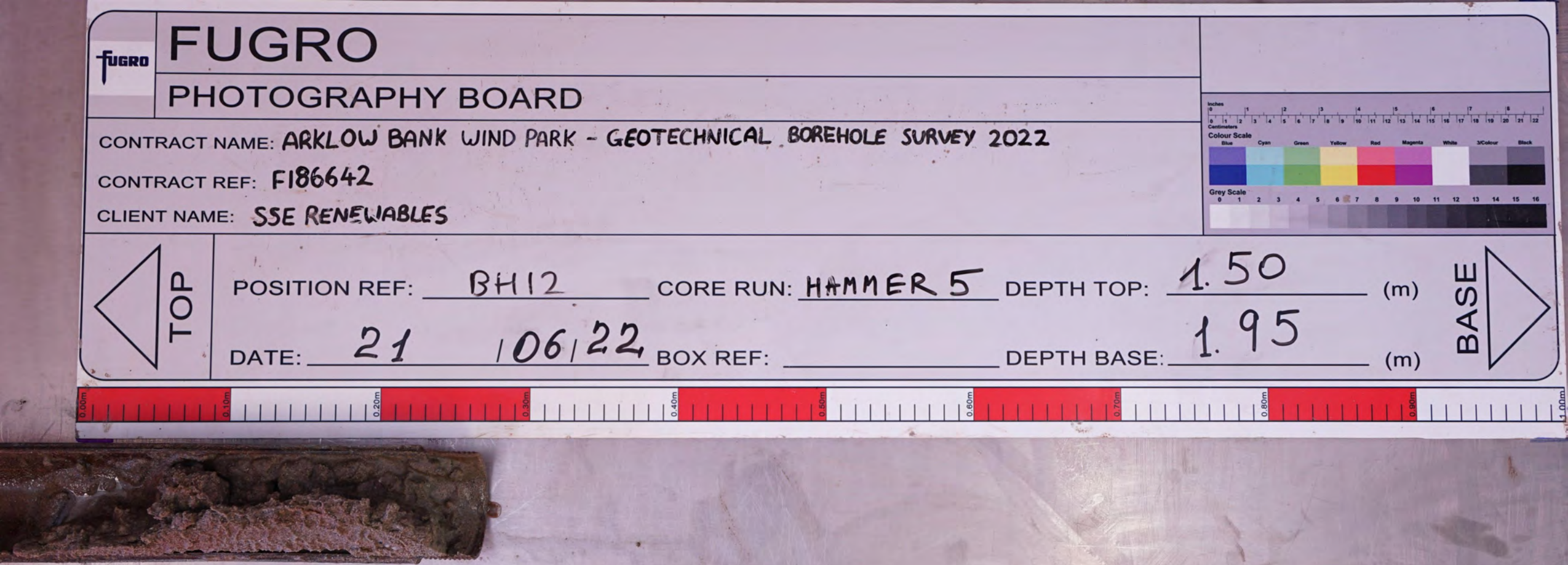
POSITION REF: BH12 CORE RUN: PUSH 4 DEPTH TOP: 1.00 (m)

DATE: 20/06/22 BOX REF: DEPTH BASE: 1.50 (m)

BASE

NO RECOVERY

Plate 4.508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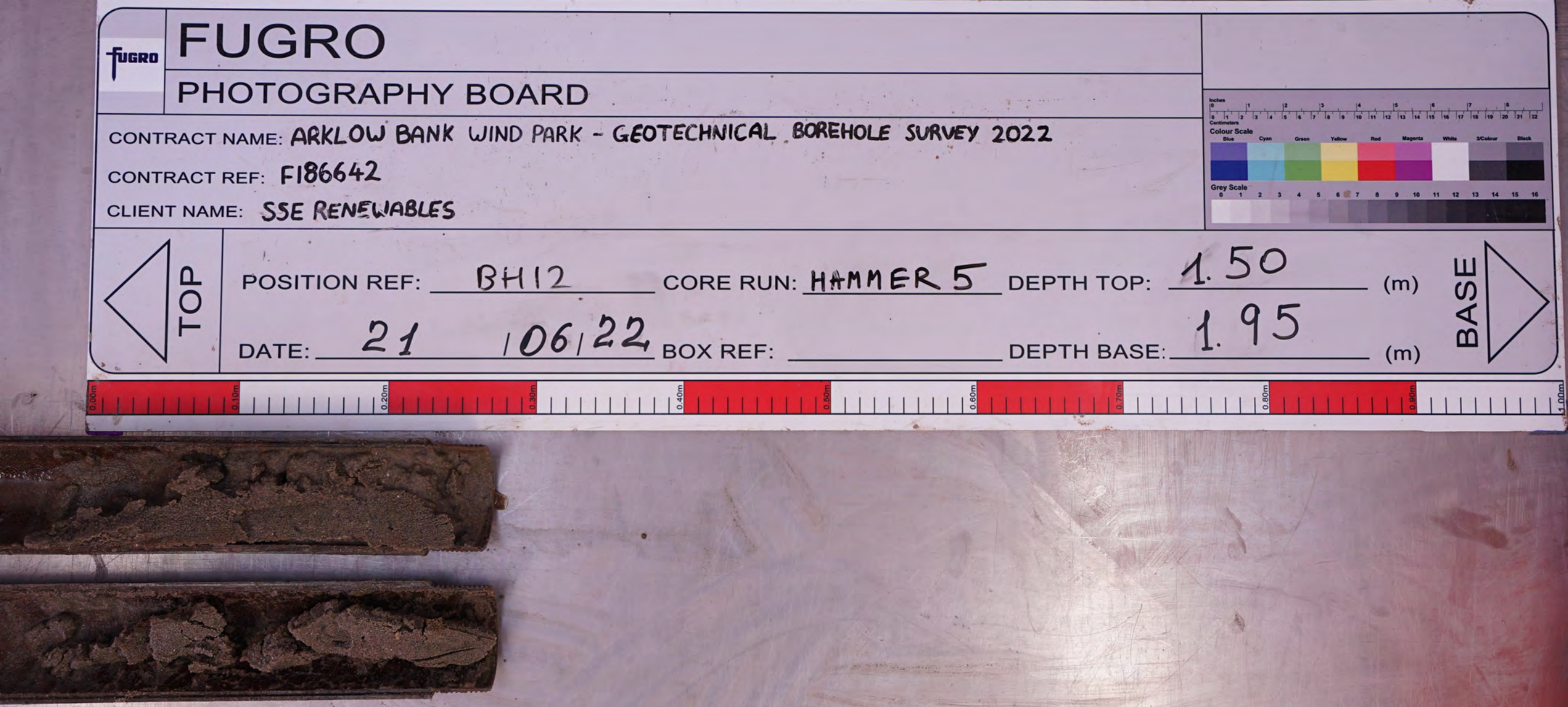
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
Inches
Centimeters
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
TOP
POSITION REF: BH12
CORE RUN: HAMMER 5
DEPTH TOP: 1.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 1.95 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.509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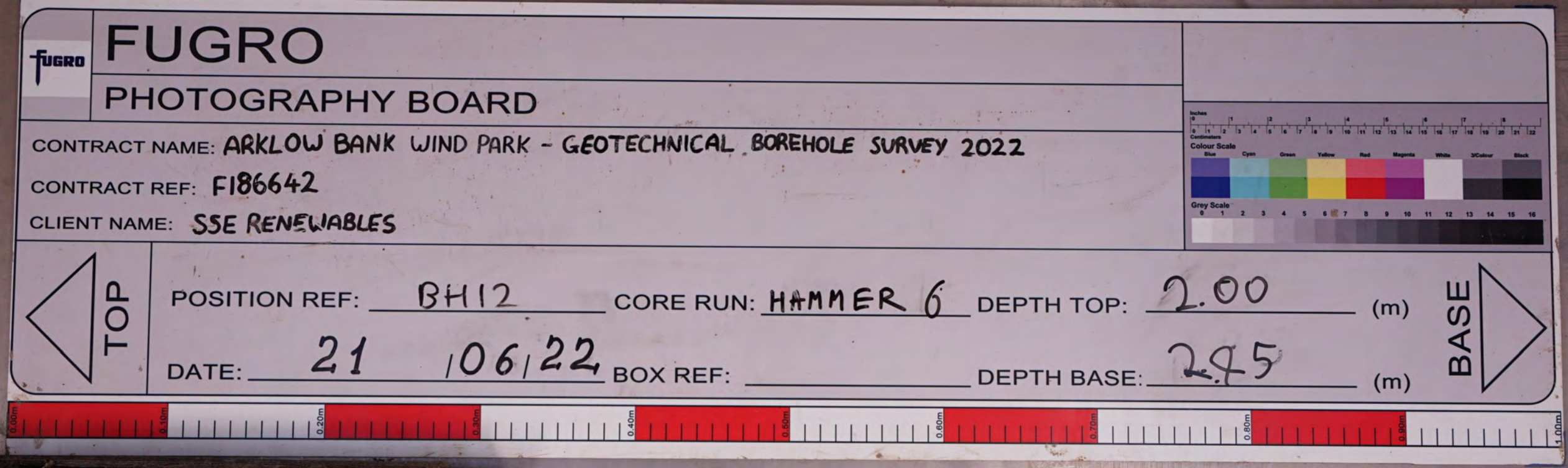
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: HAMMER 5
DEPTH TOP: 1.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 1.95 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.510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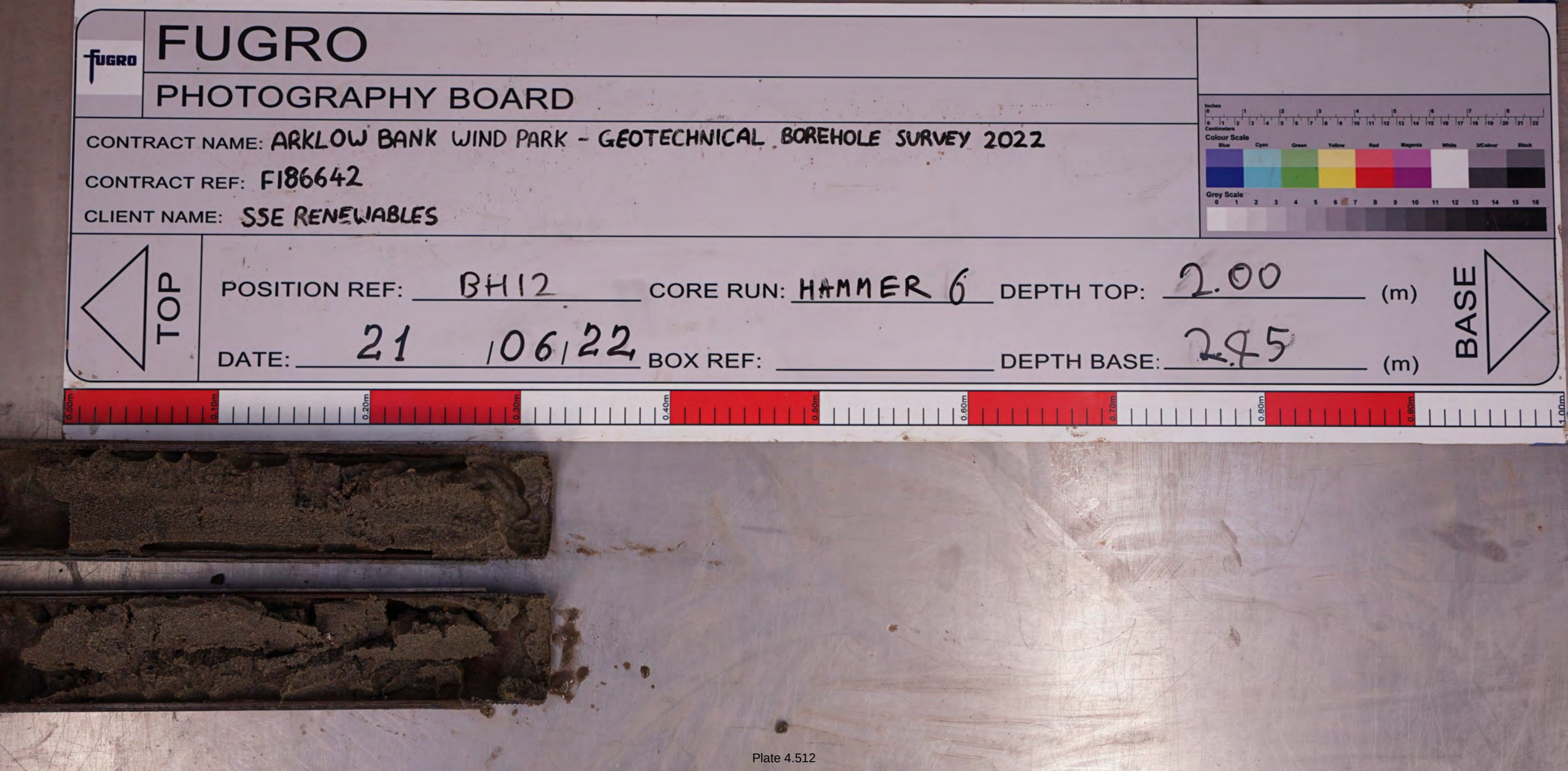
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: HAMMER 6
DEPTH TOP: 2.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 2.85 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.511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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: HAMMER 6
DEPTH TOP: 2.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 2.85 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.512

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 7 DEPTH TOP: 3.00 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 4.00 (m)

BASE



Plate 4.513

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 7 DEPTH TOP: 3.00 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 4.00 (m)

BASE



Plate 4.514

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 8 DEPTH TOP: 4.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 5.50 (m)

BASE



Plate 4.515

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 8 DEPTH TOP: 4.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 5.50 (m)

BASE

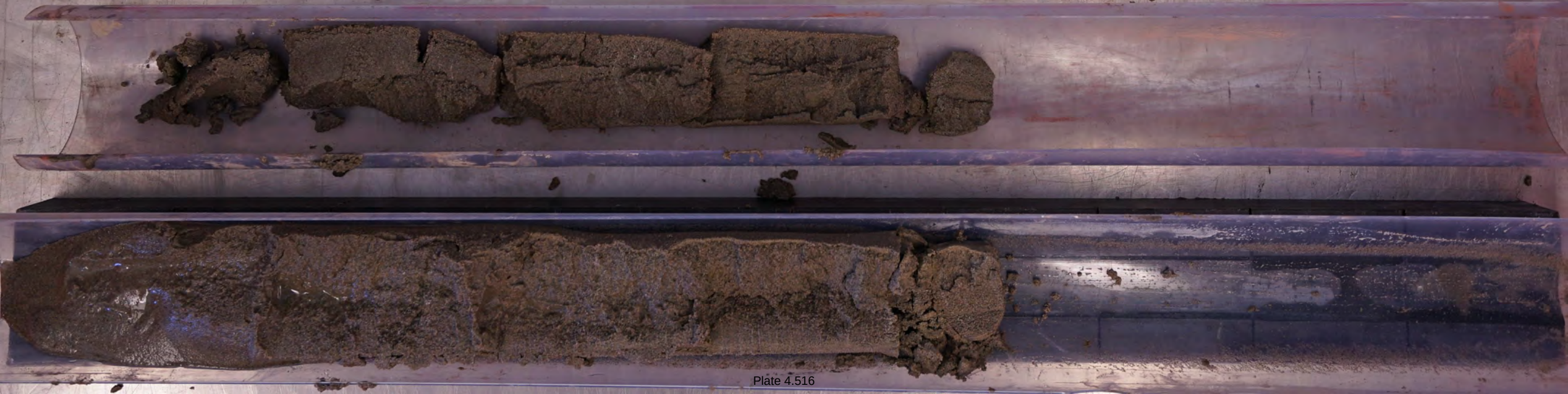

Plate 4.516

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

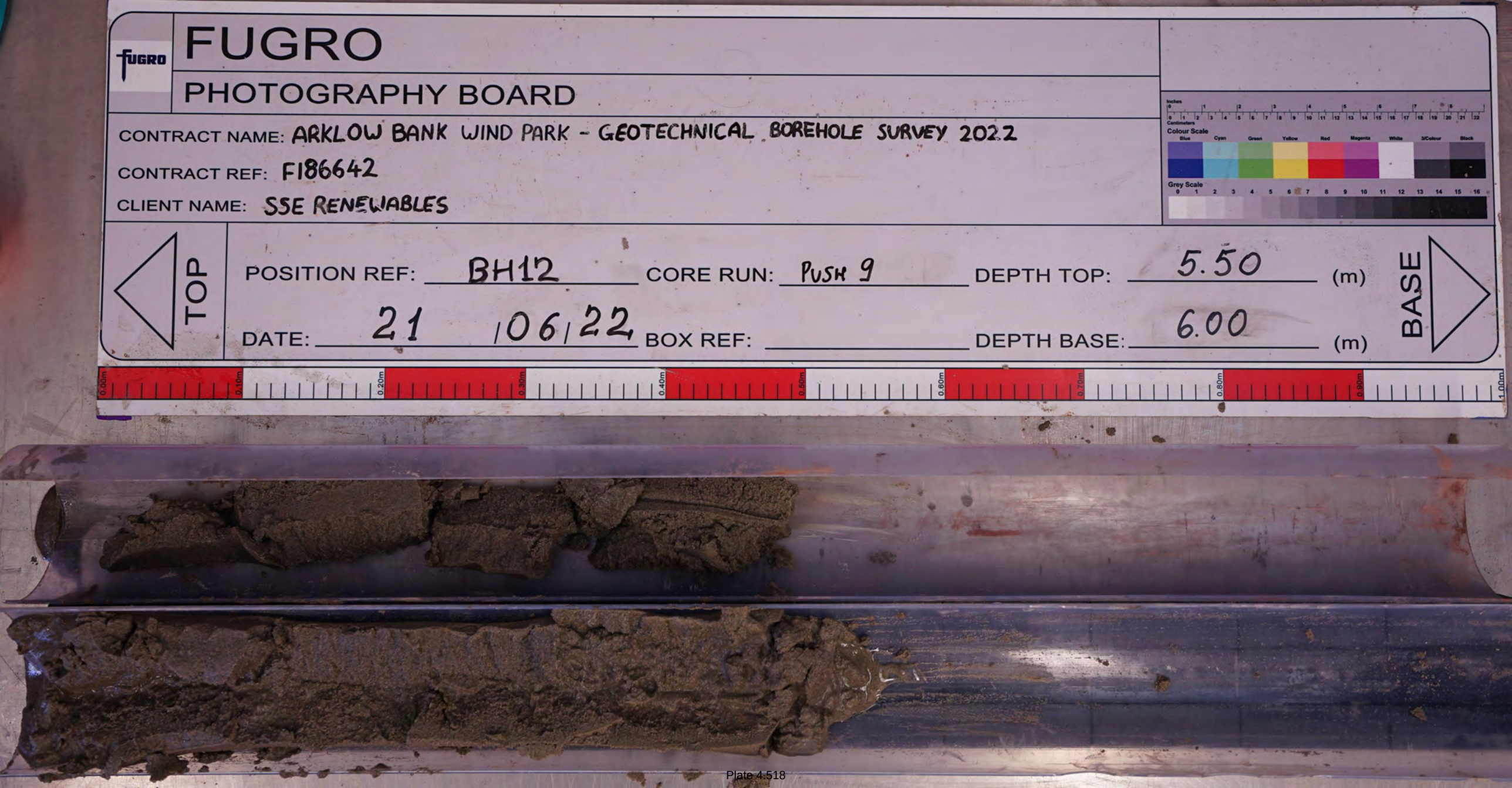
POSITION REF: BH12 CORE RUN: PUSH 9 DEPTH TOP: 5.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 6.00 (m)

BASE



Plate 4.517


FUGRO
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 9
DEPTH TOP: 5.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 6.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

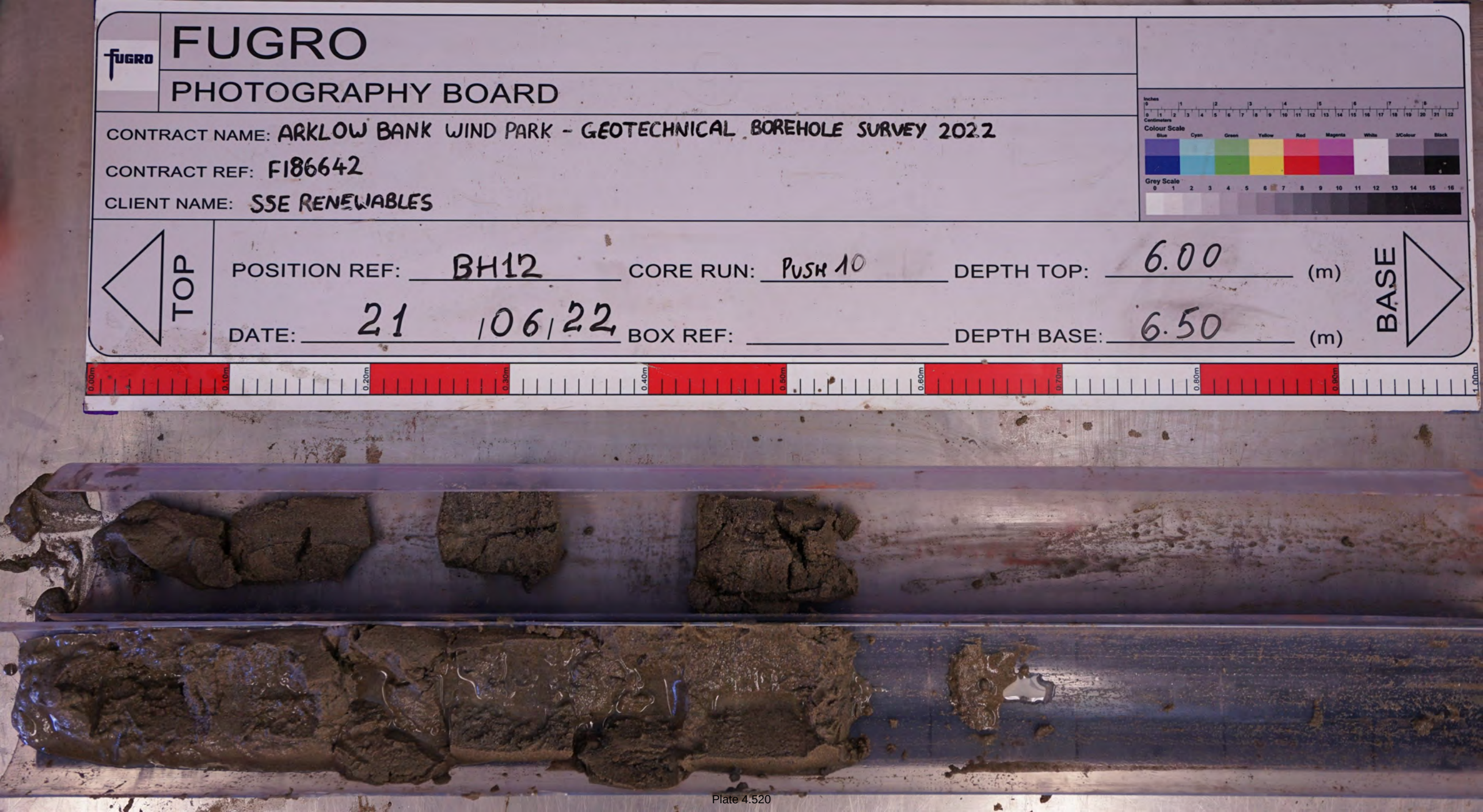
POSITION REF: BH12 CORE RUN: PUSH 10 DEPTH TOP: 6.00 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 6.50 (m)

BASE



Plate 4.519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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 10
DEPTH TOP: 6.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 6.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.520

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 11 DEPTH TOP: 7.00 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 8.00 (m)

BASE



Plate 4.521

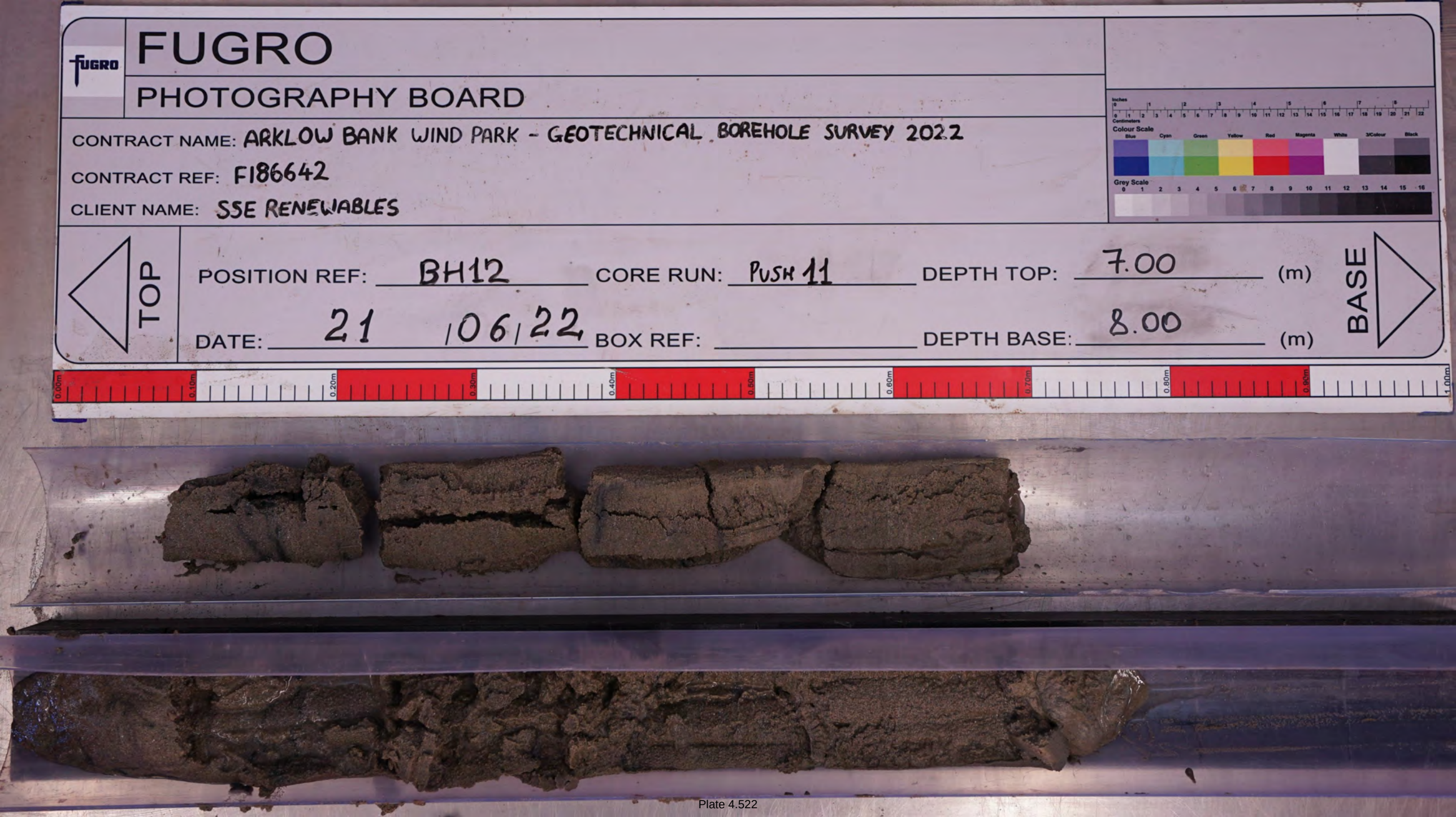
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 11
DEPTH TOP: 7.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 8.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.522

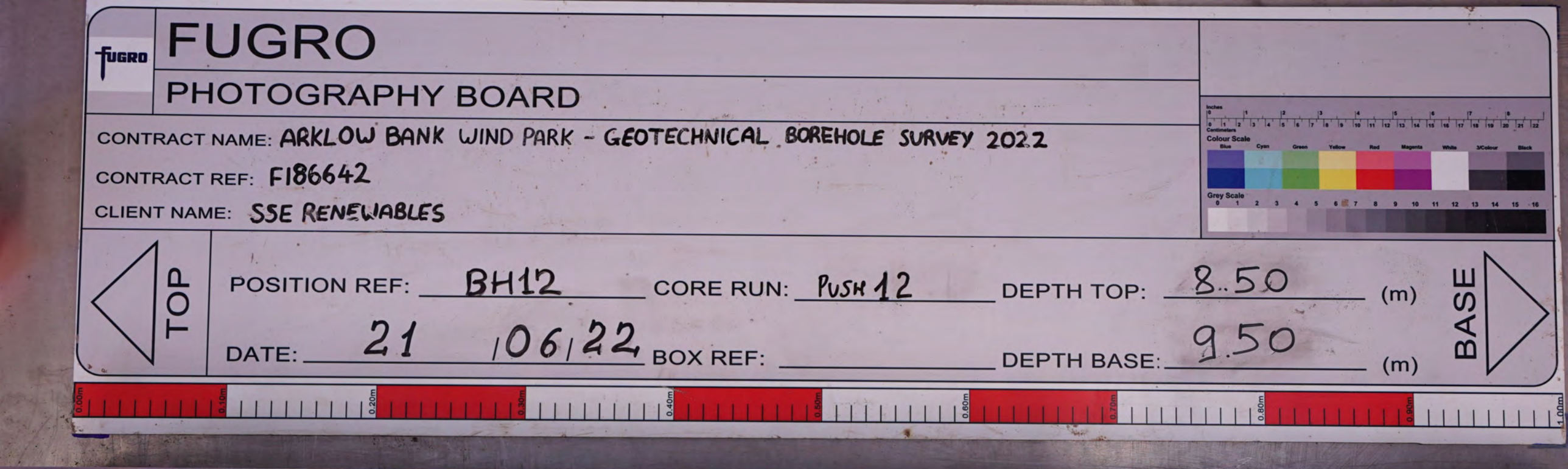
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 12
DEPTH TOP: 8.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 9.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.523

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 12 DEPTH TOP: 8.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 9.50 (m)

BASE



Plate 4.524

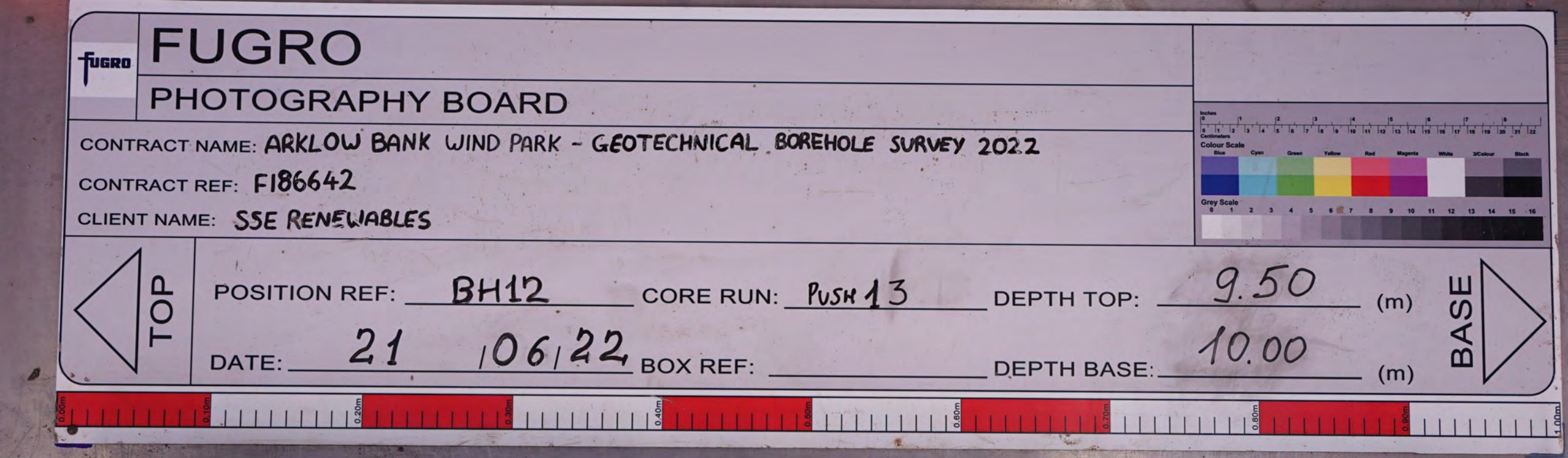
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 13
DEPTH TOP: 9.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 10.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.525

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 13 DEPTH TOP: 9.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 10.00 (m)

BASE

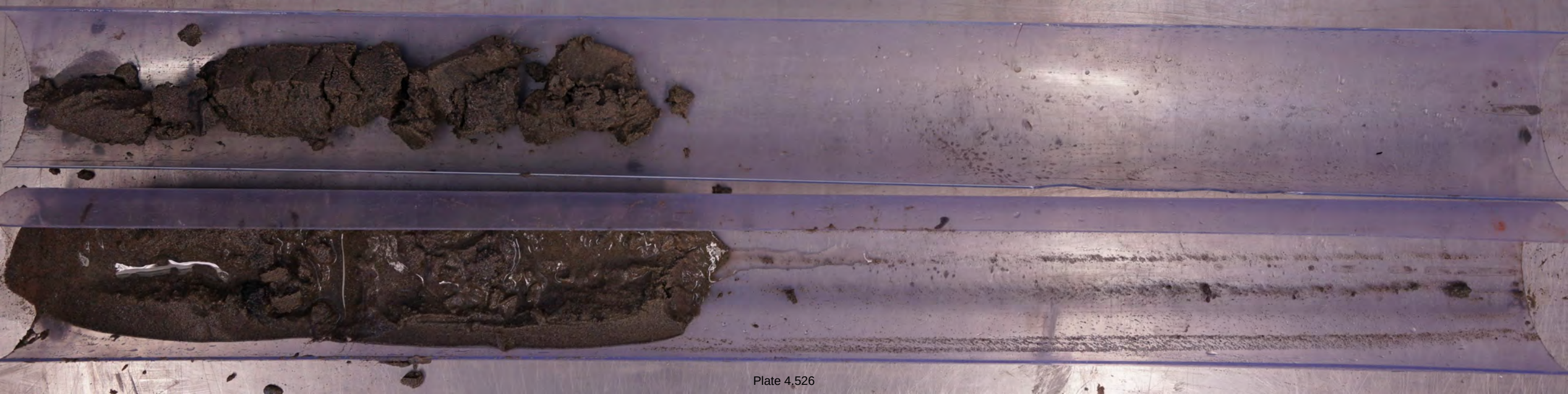


Plate 4,526

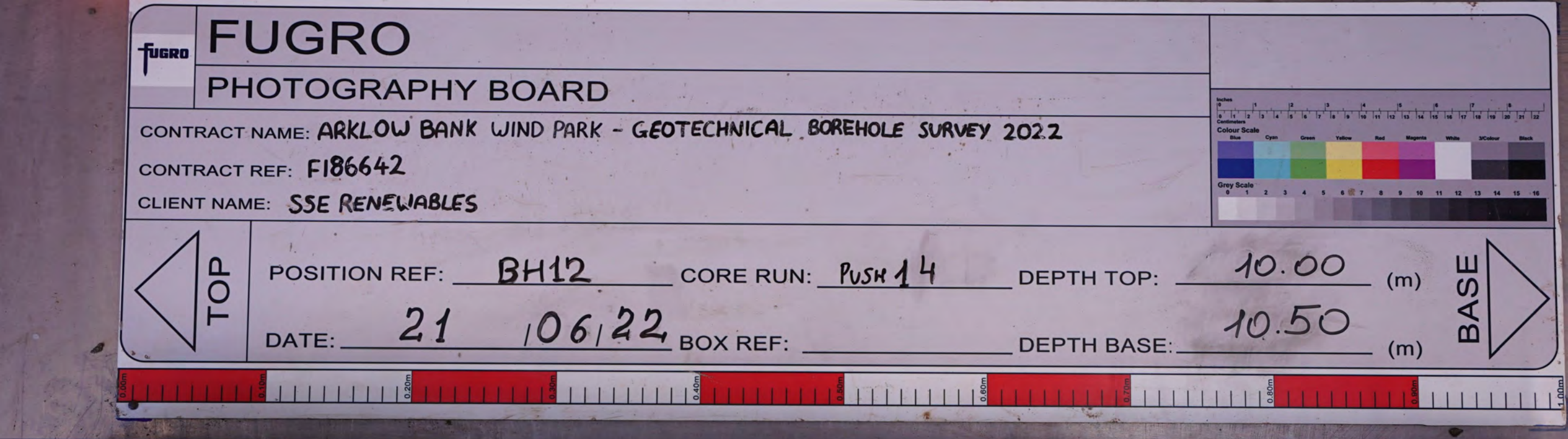

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 14
DEPTH TOP: 10.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 10.50 (m)
BASE

Plate 4.527

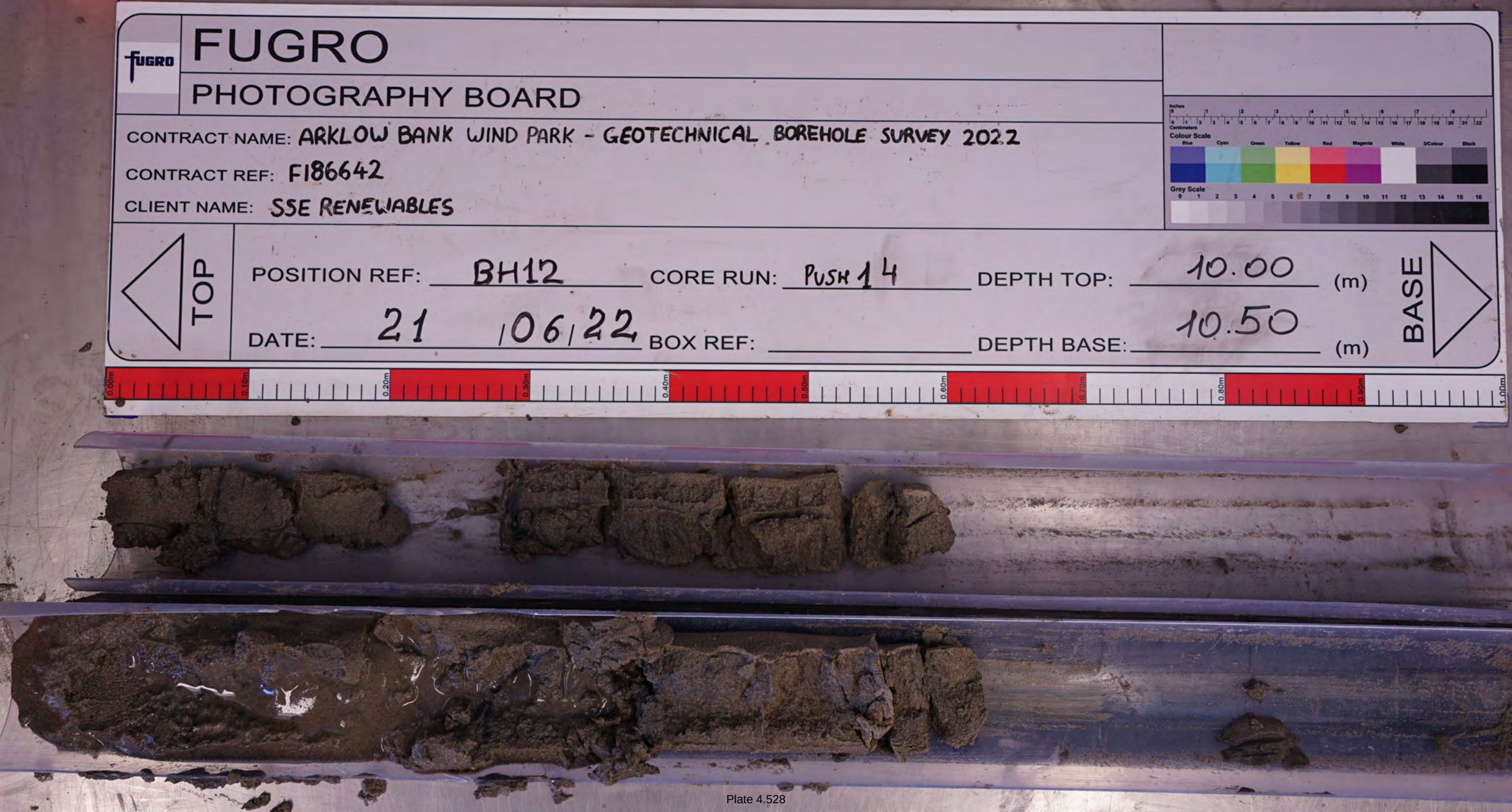
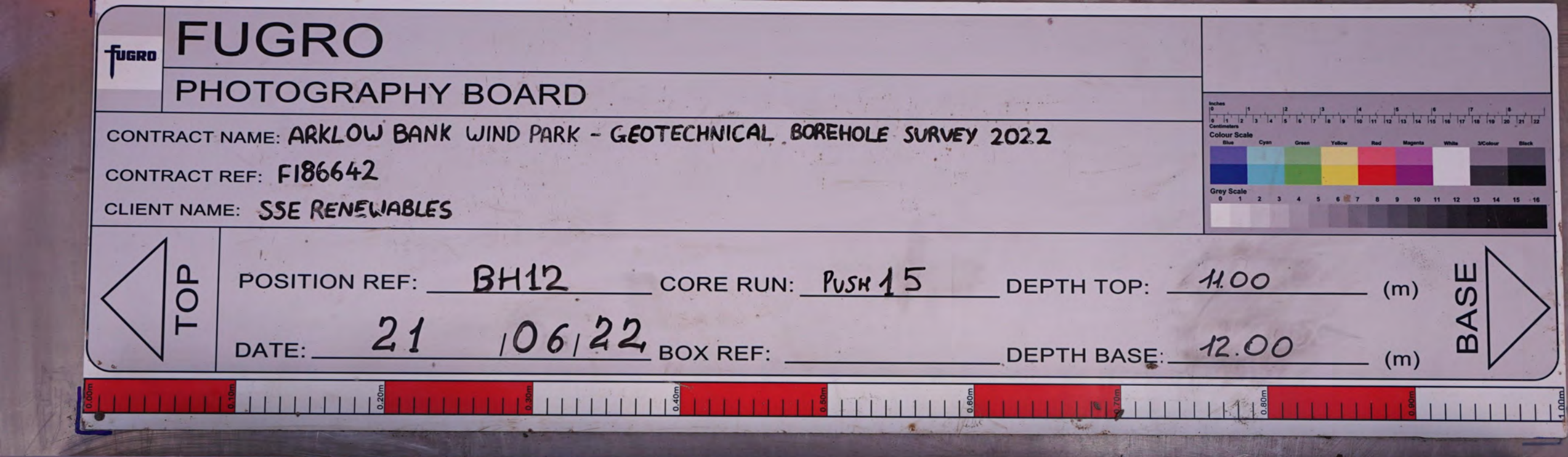

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 14
DEPTH TOP: 10.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 10.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.528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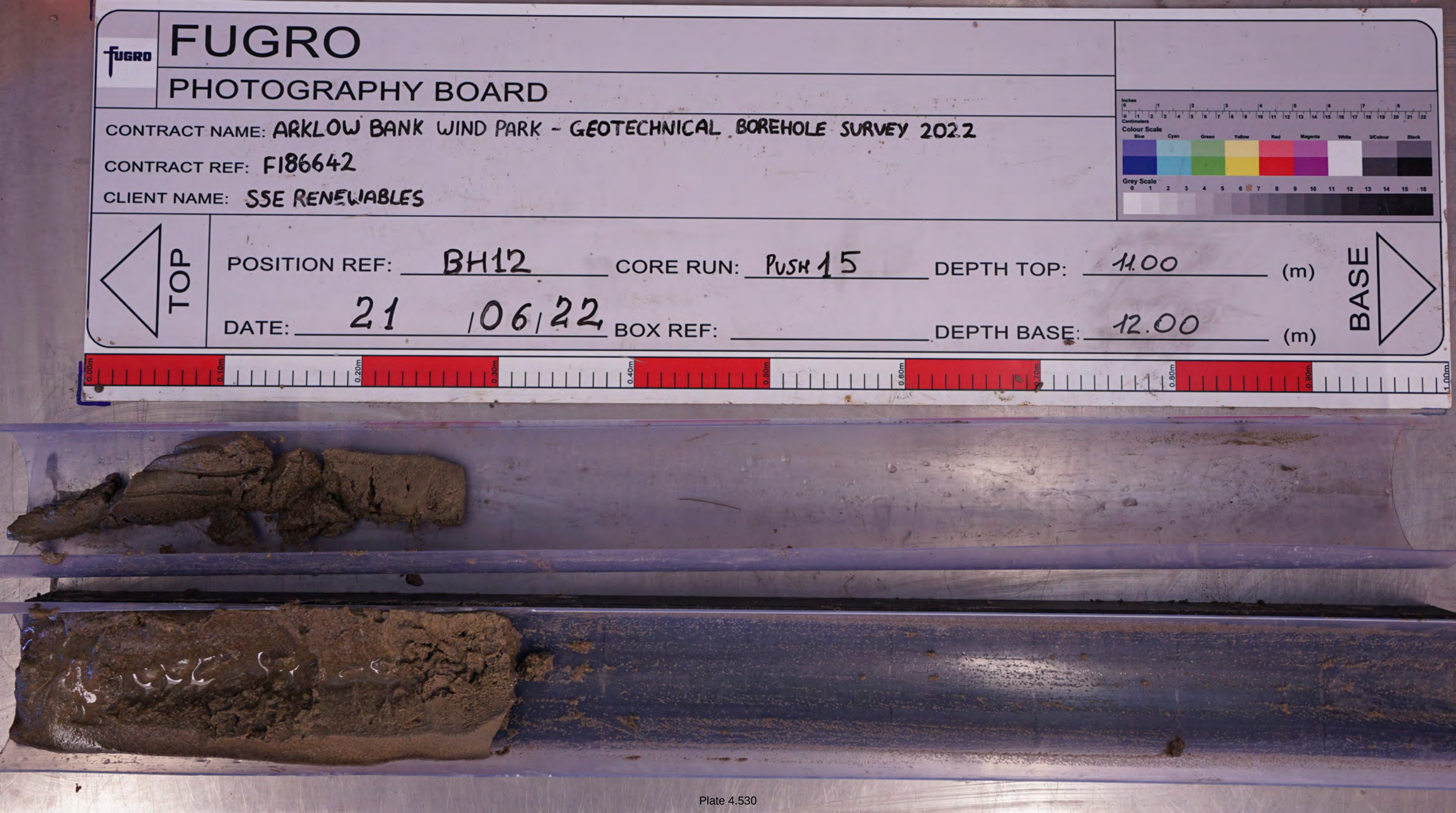
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 15
DEPTH TOP: 11.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 12.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.529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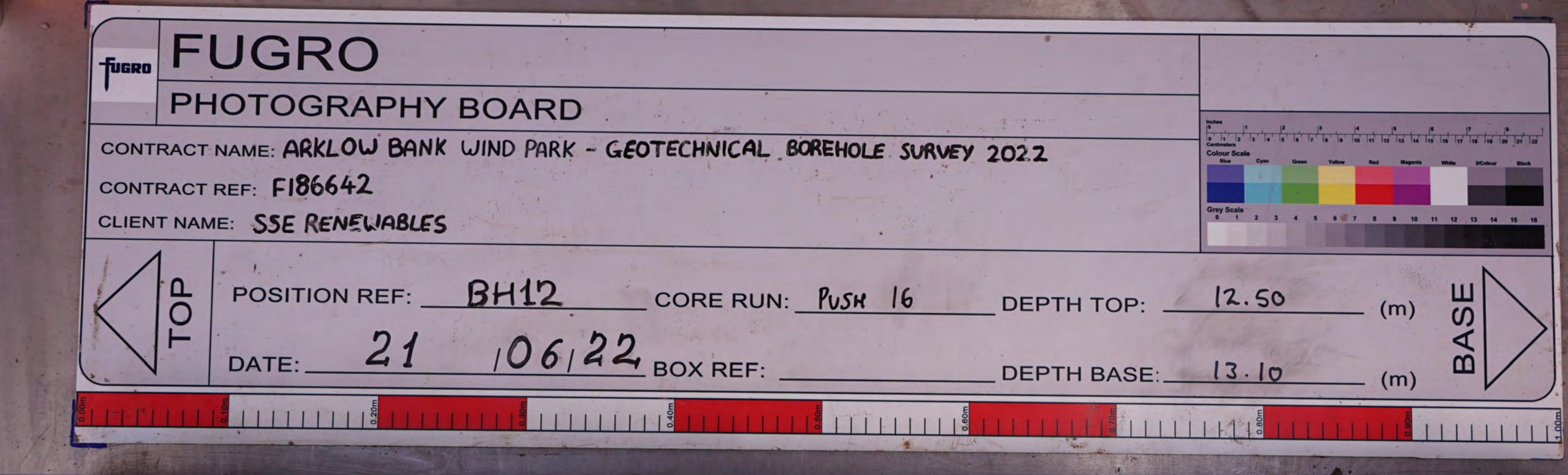
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 15
DEPTH TOP: 11.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 12.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.530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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 16
DEPTH TOP: 12.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 13.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.531

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

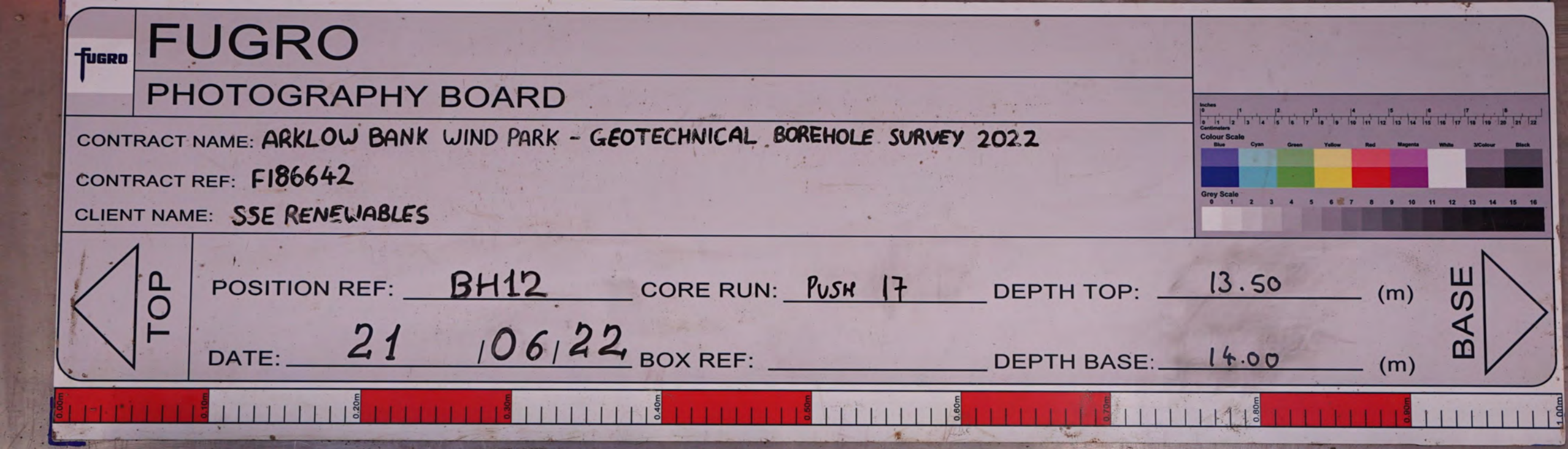
POSITION REF: BH12 CORE RUN: PUSH 16 DEPTH TOP: 12.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 13.10 (m)

BASE



Plate 4.532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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 17
DEPTH TOP: 13.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.533

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 17 DEPTH TOP: 13.50 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 14.00 (m)

BASE

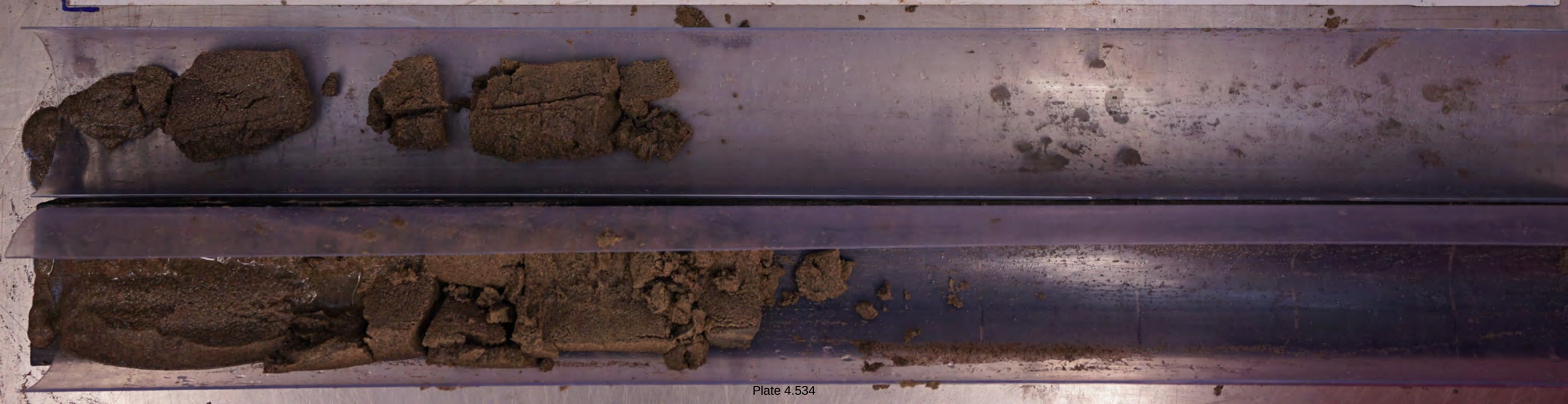
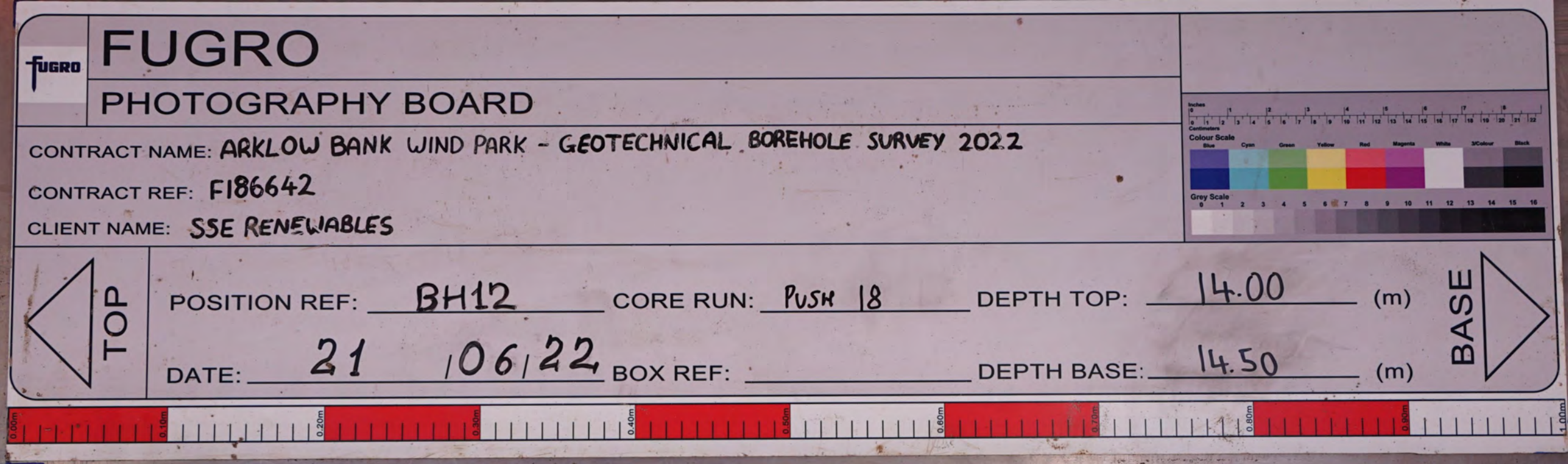


Plate 4.534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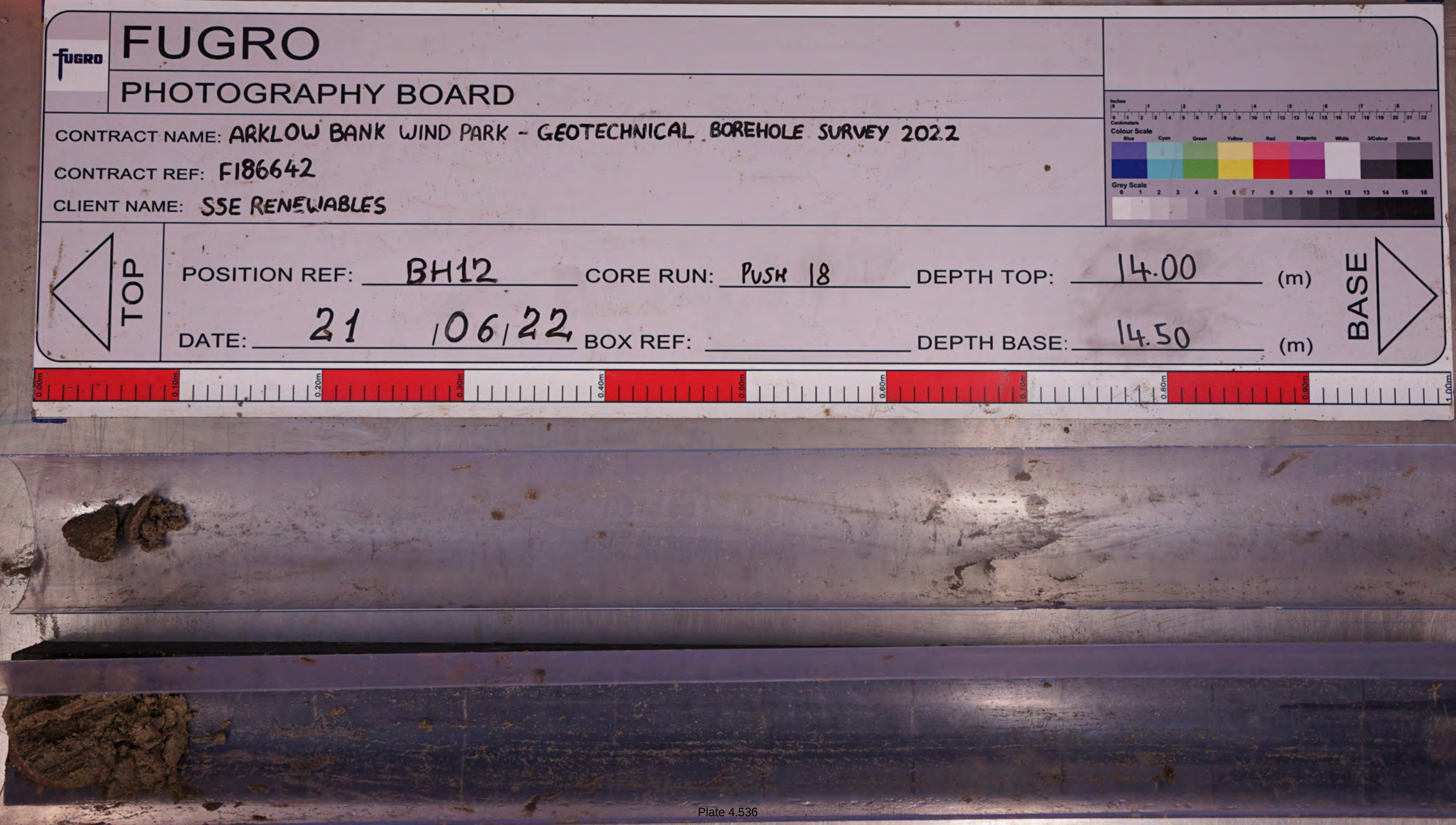
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 18
DEPTH TOP: 14.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.535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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 18
DEPTH TOP: 14.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.536

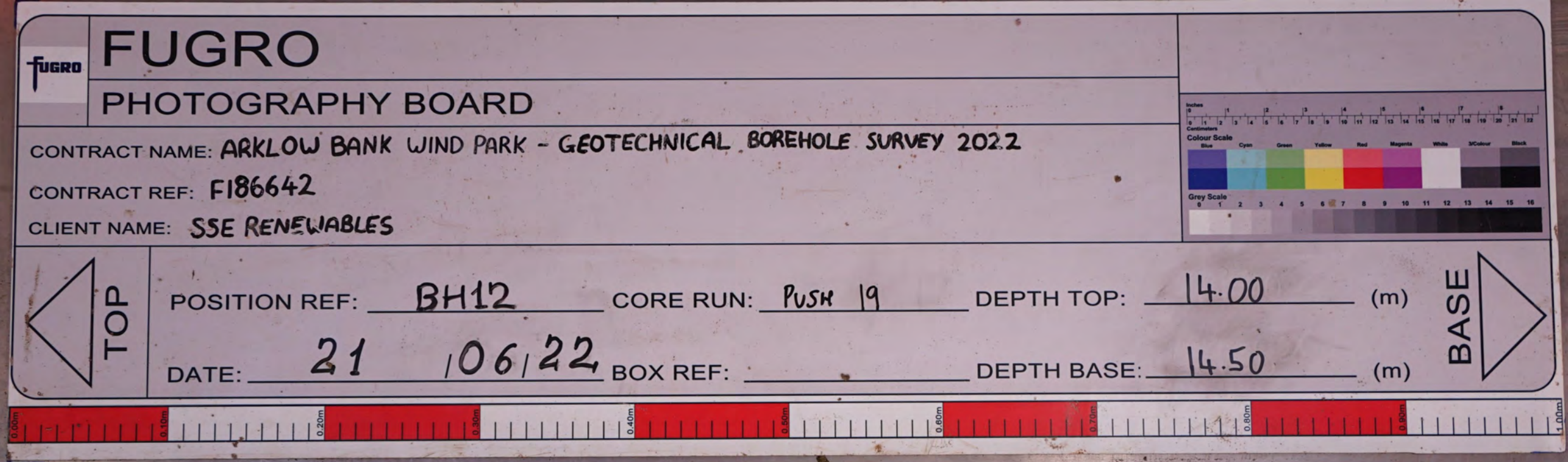
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 19
DEPTH TOP: 14.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.537

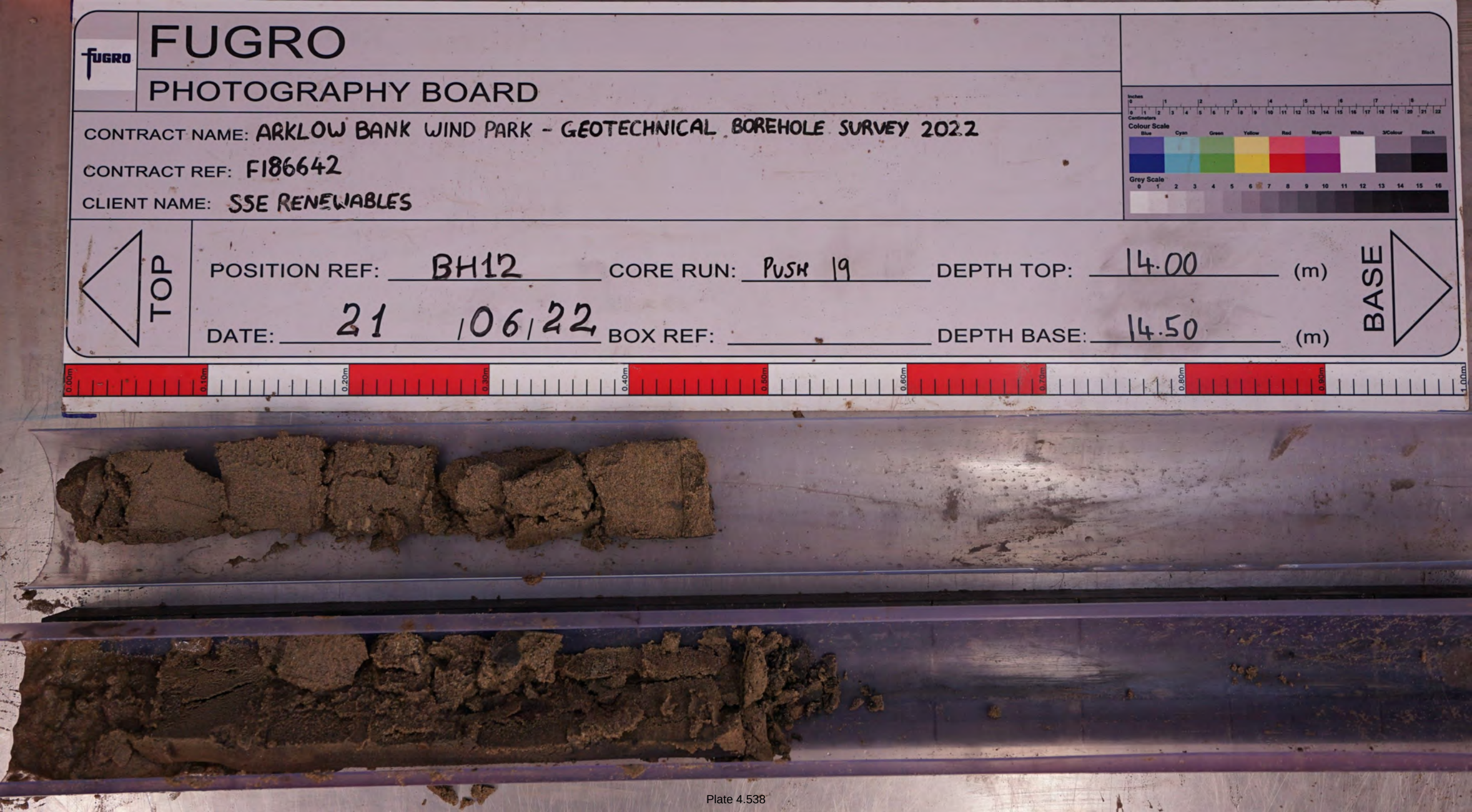
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 19
DEPTH TOP: 14.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.538

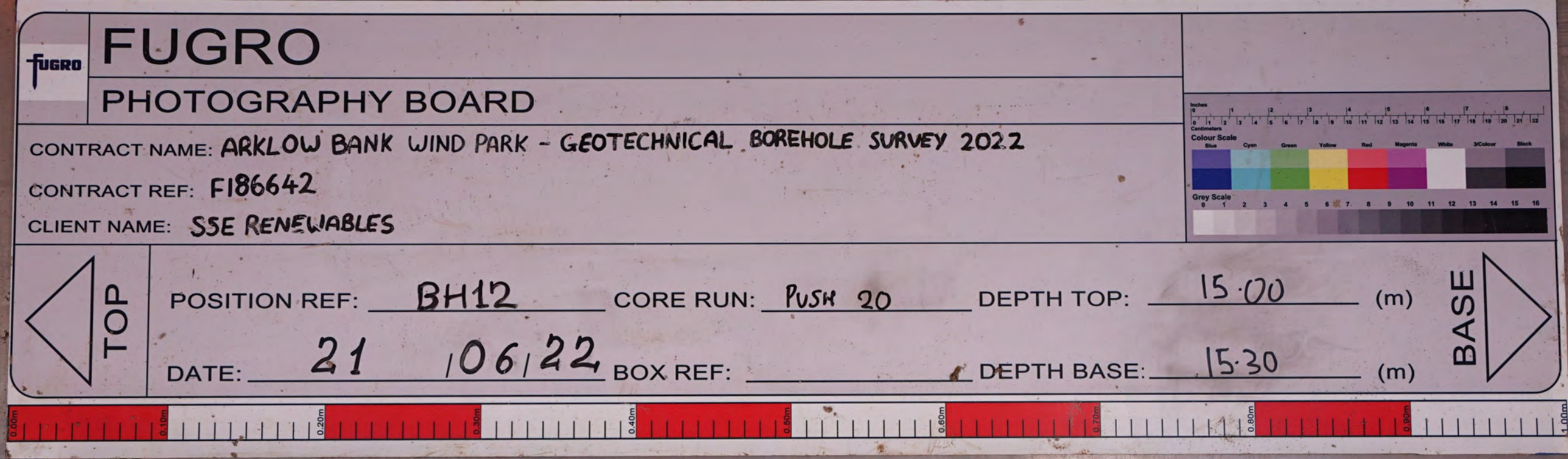
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH 20
DEPTH TOP: 15.00 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 15.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.539

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: PUSH 20 DEPTH TOP: 15.00 (m)

DATE: 21/06/22 BOX REF: DEPTH BASE: 15.30 (m)

BASE

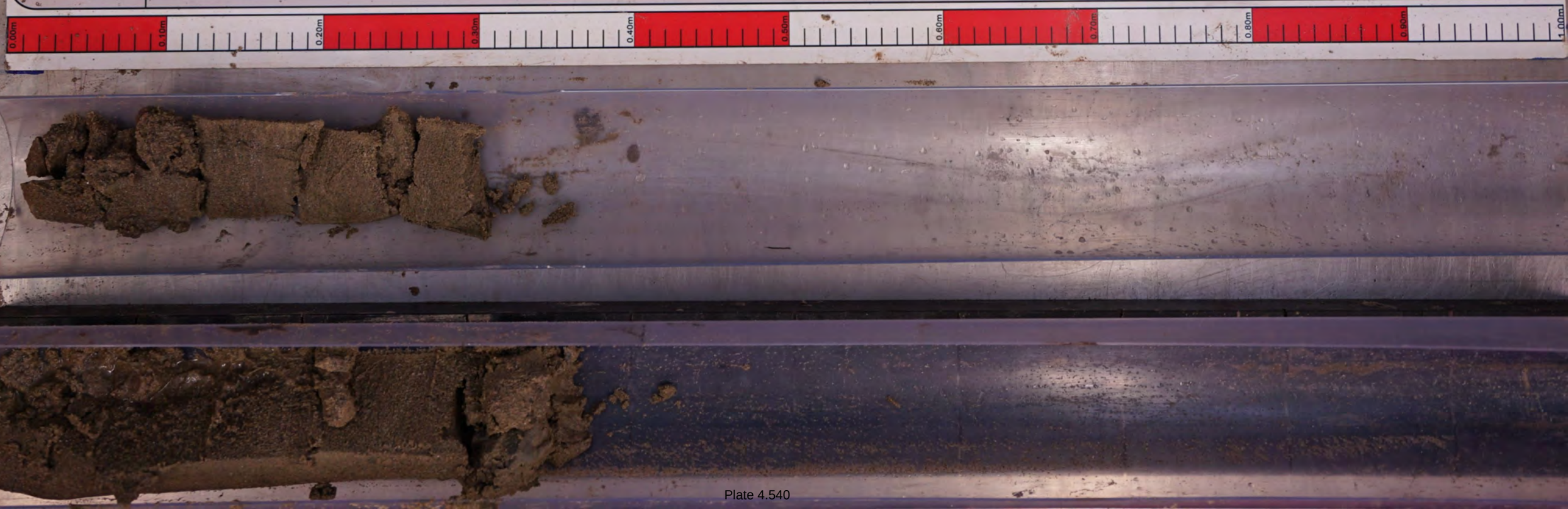

Plate 4.540

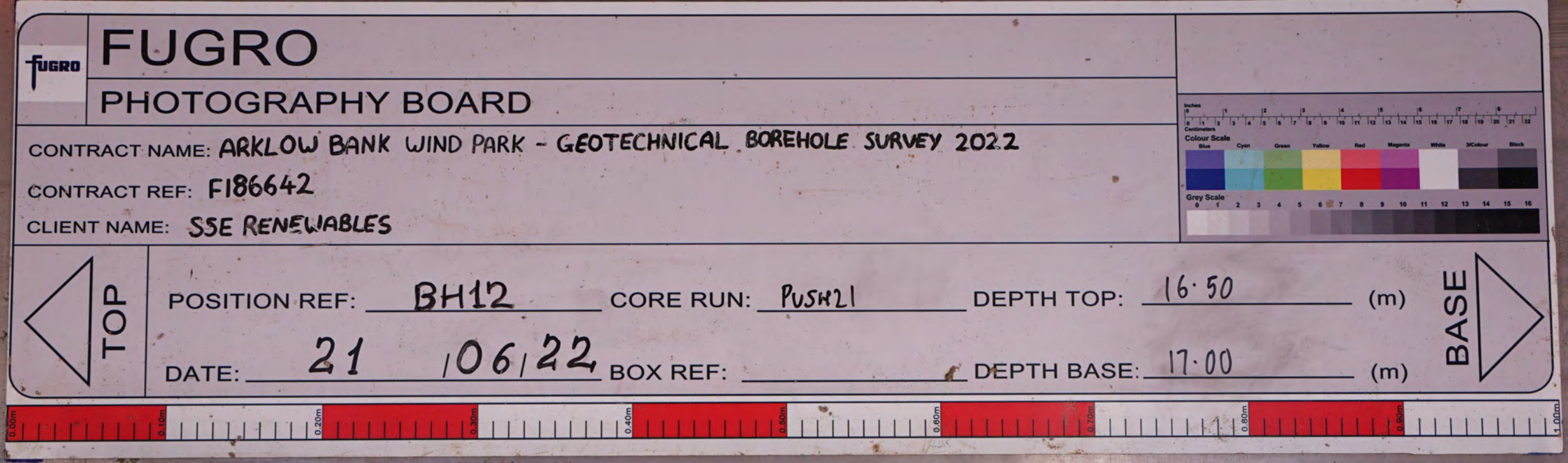
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: PUSH21
DEPTH TOP: 16.50 (m)
DATE: 21/06/22
BOX REF:
DEPTH BASE: 17.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.541

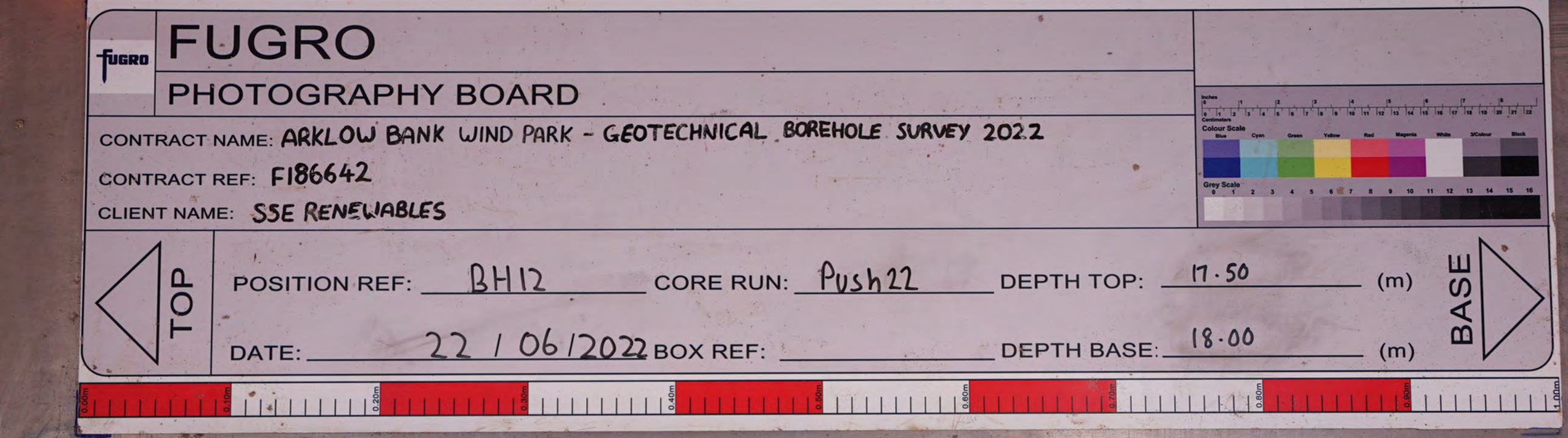
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push22
DEPTH TOP: 17.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.542

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push22 DEPTH TOP: 17.50 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 18.00 (m)

BASE



Plate 4.543

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push23 DEPTH TOP: 18.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 18.05 (m)

BASE

NO RECOVERY

Plate 4.544

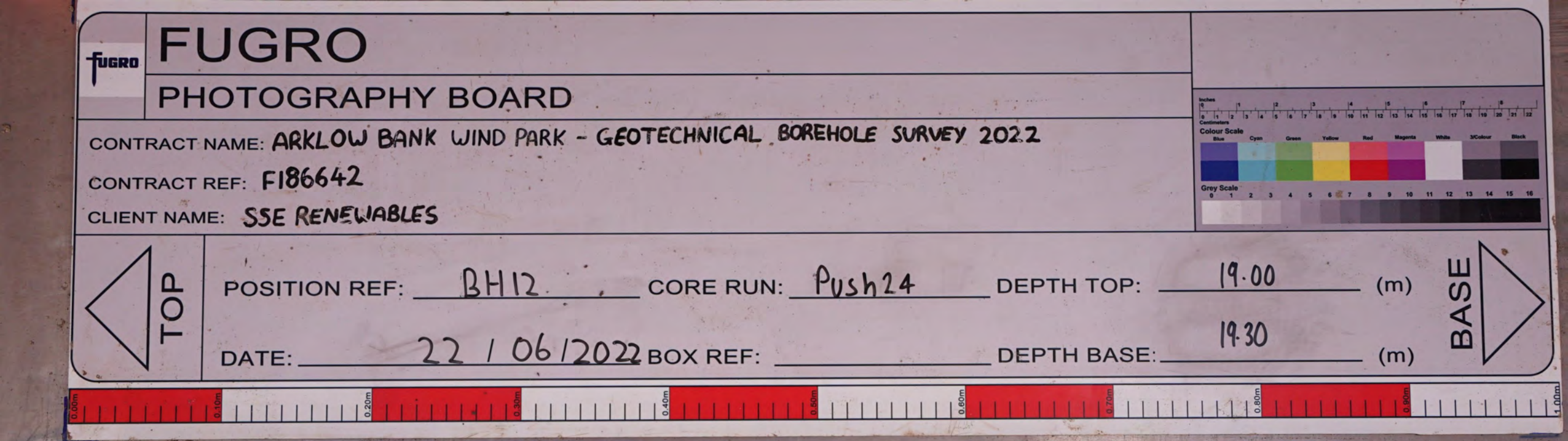
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push24
DEPTH TOP: 19.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 19.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.545

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push24 DEPTH TOP: 19.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 19.30 (m)

BASE



Plate 4.546

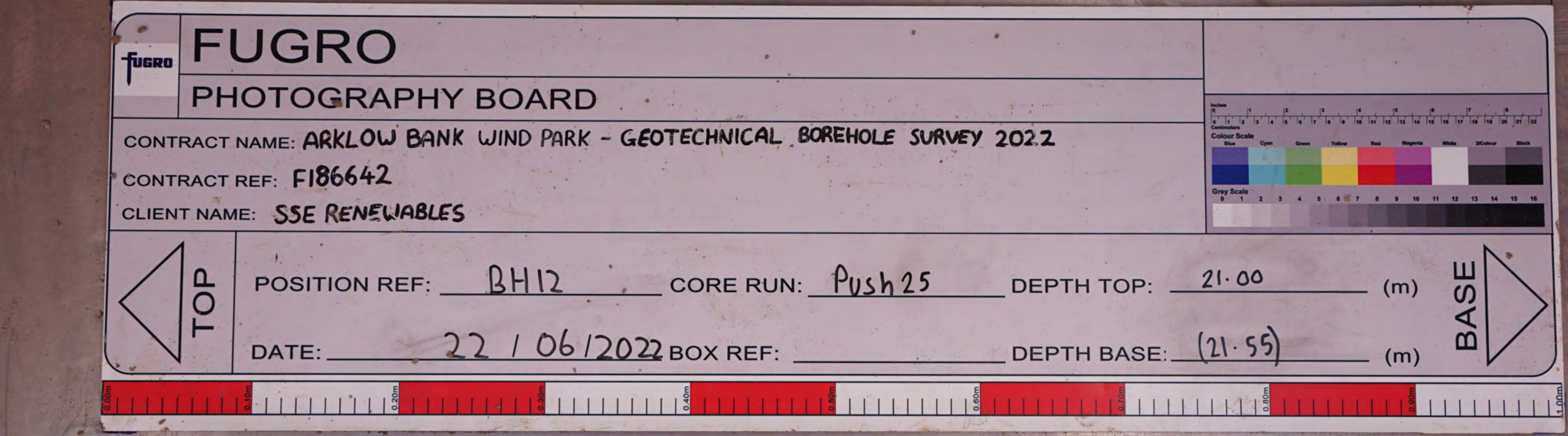
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 25
DEPTH TOP: 21.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: (21.55) (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.547

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 25 DEPTH TOP: 21.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: (21.55) (m)

BASE

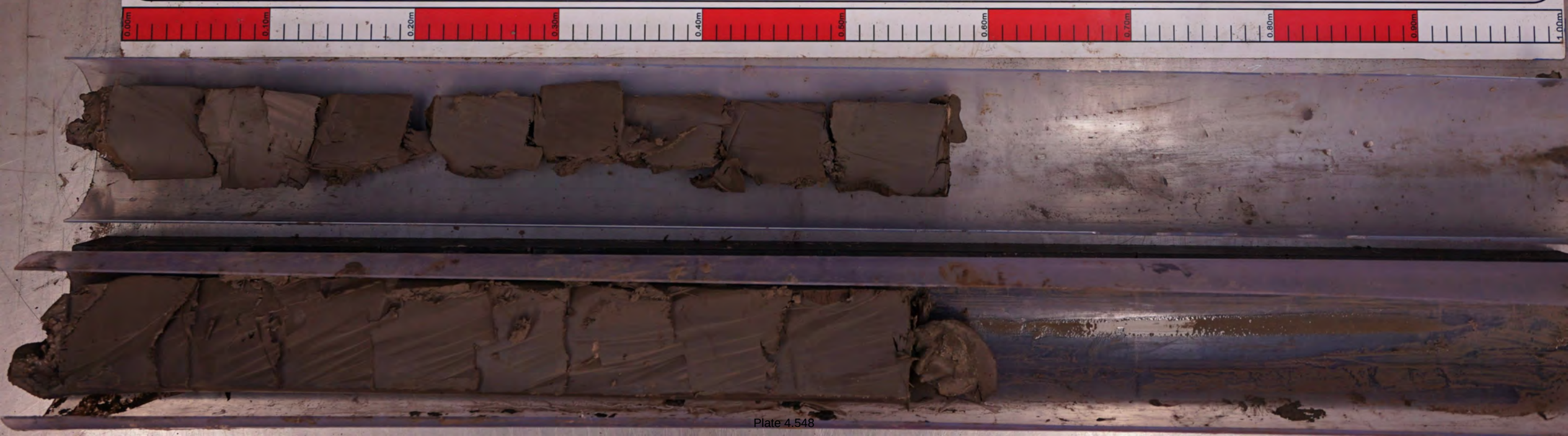

Plate 4.548

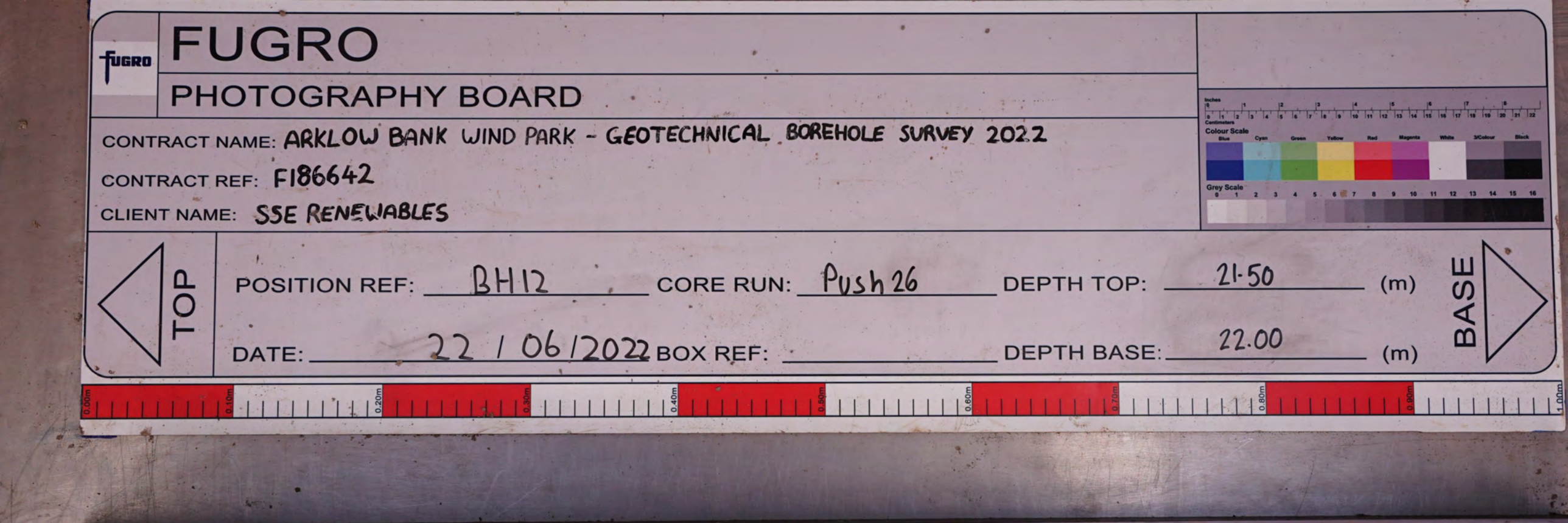
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 26
DEPTH TOP: 21.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.549

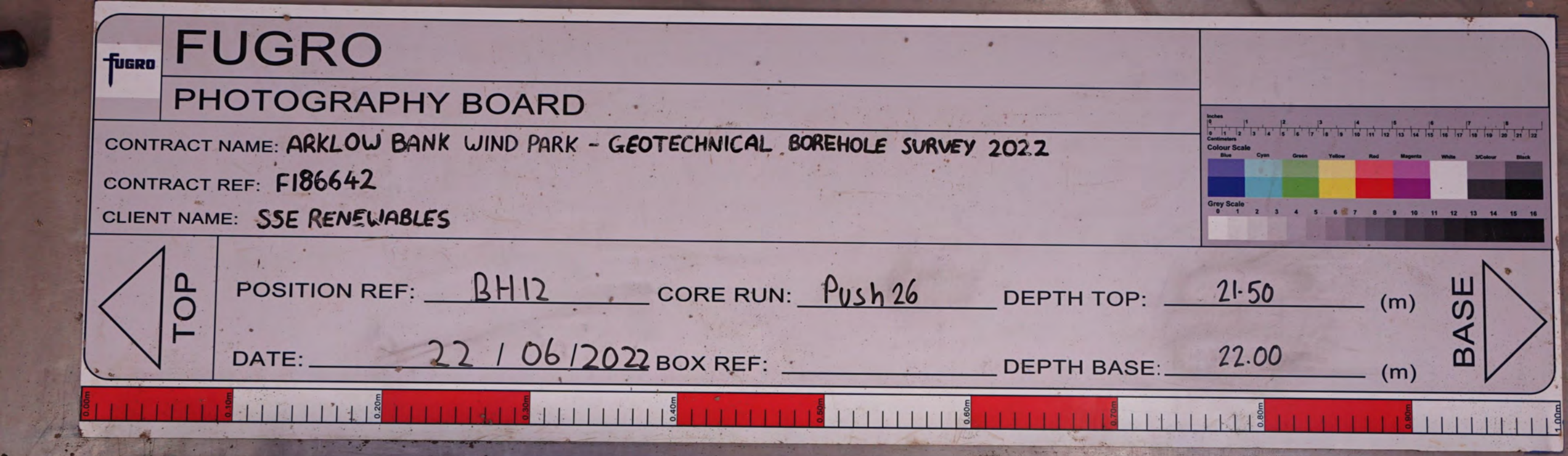
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 26
DEPTH TOP: 21.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.550

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 27 DEPTH TOP: 21.50 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 22.50 (m)

BASE



Plate 4.551

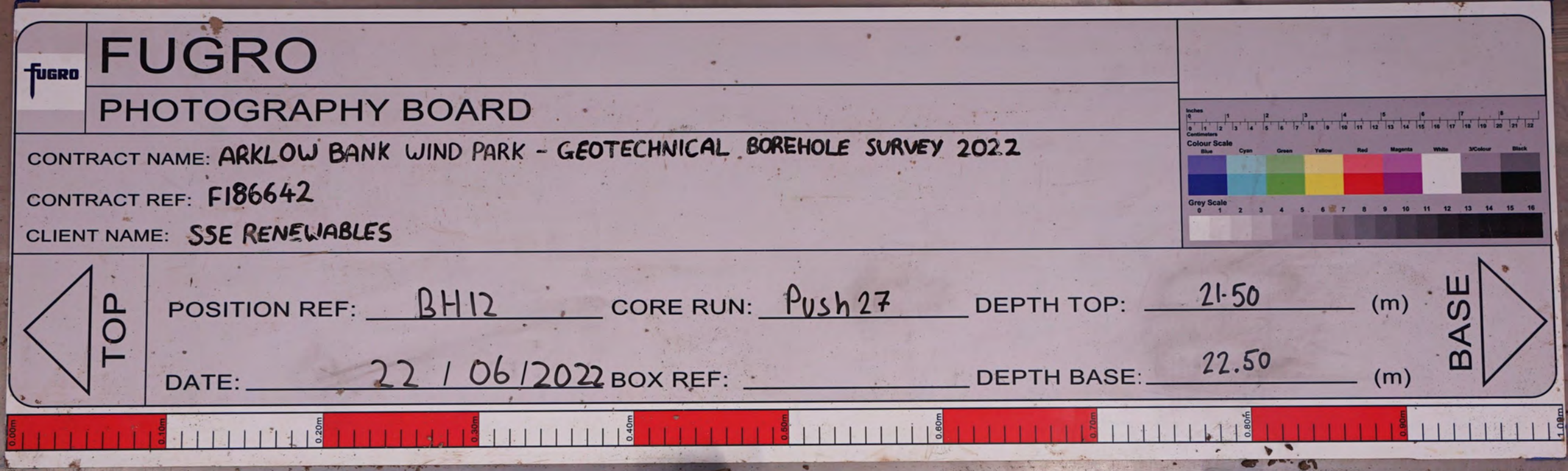
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 27
DEPTH TOP: 21.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 22.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.552

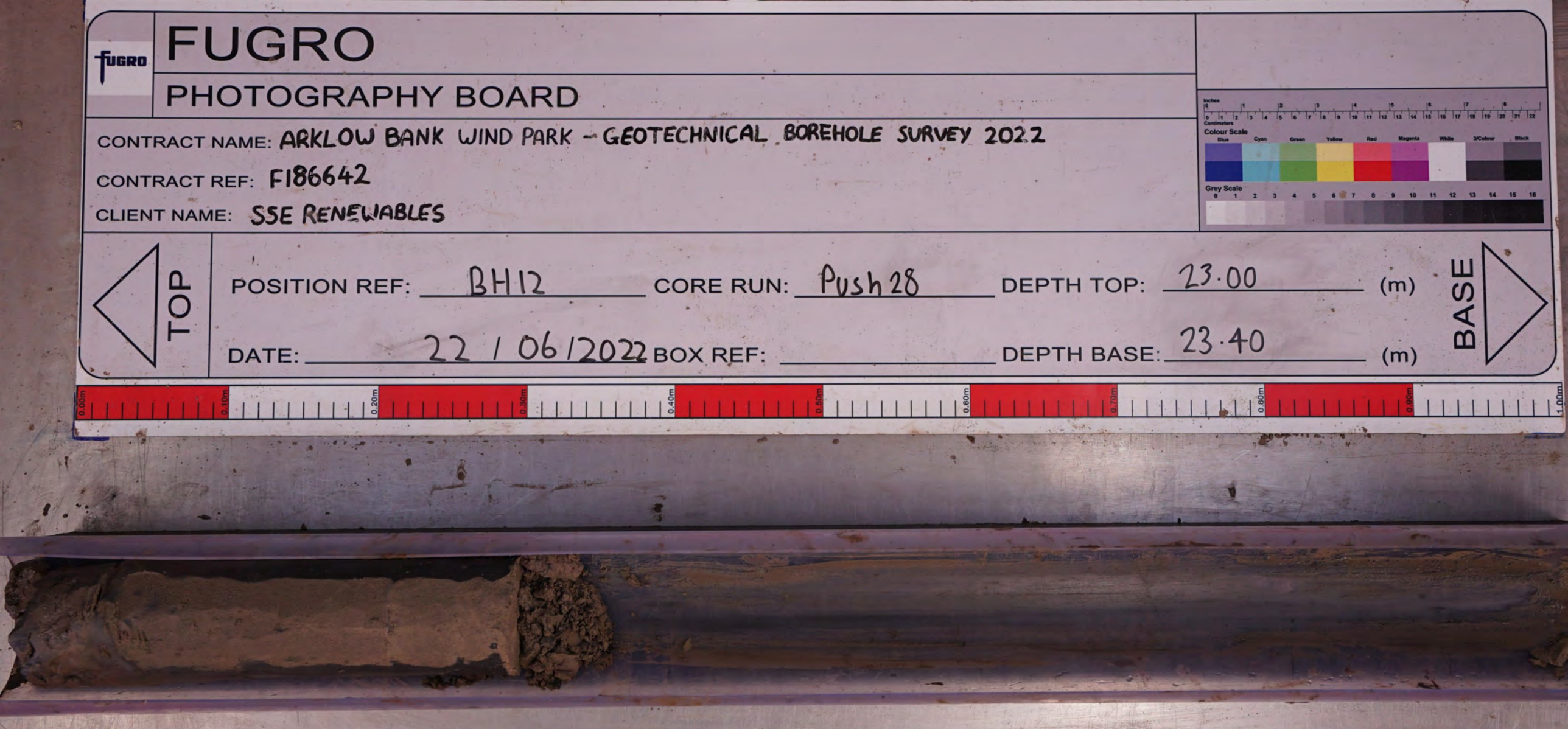
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 28
DEPTH TOP: 23.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 23.40 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.553

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 28 DEPTH TOP: 23.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 23.40 (m)

BASE



Plate 4.554

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 28 DEPTH TOP: 23.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 23.40 (m)

BASE



Plate 4.555

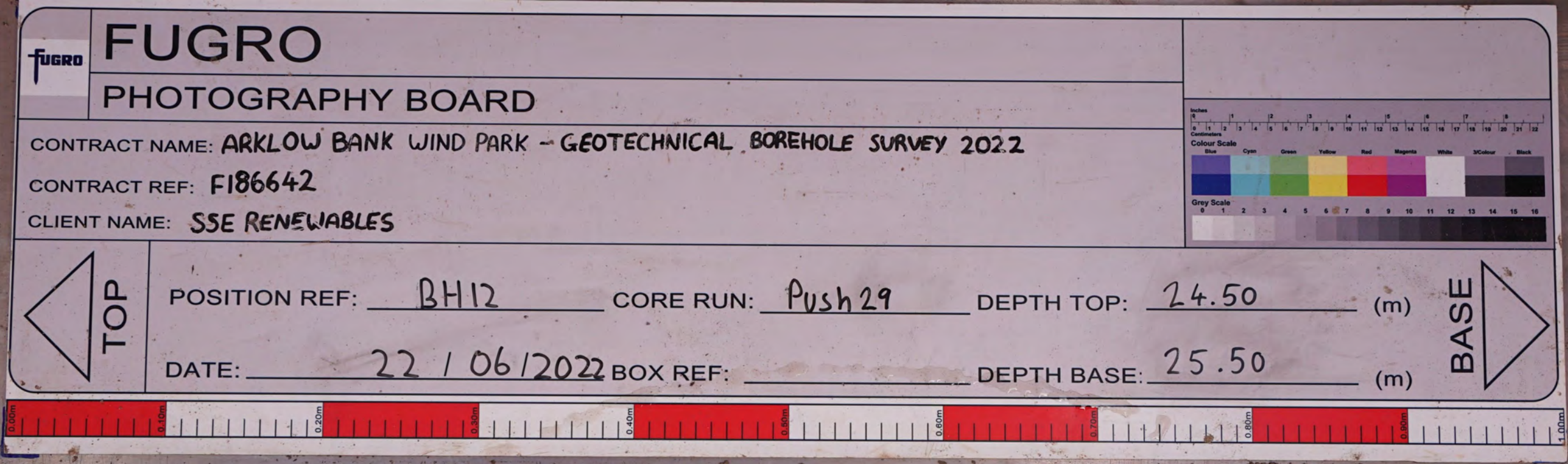
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 29
DEPTH TOP: 24.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.556

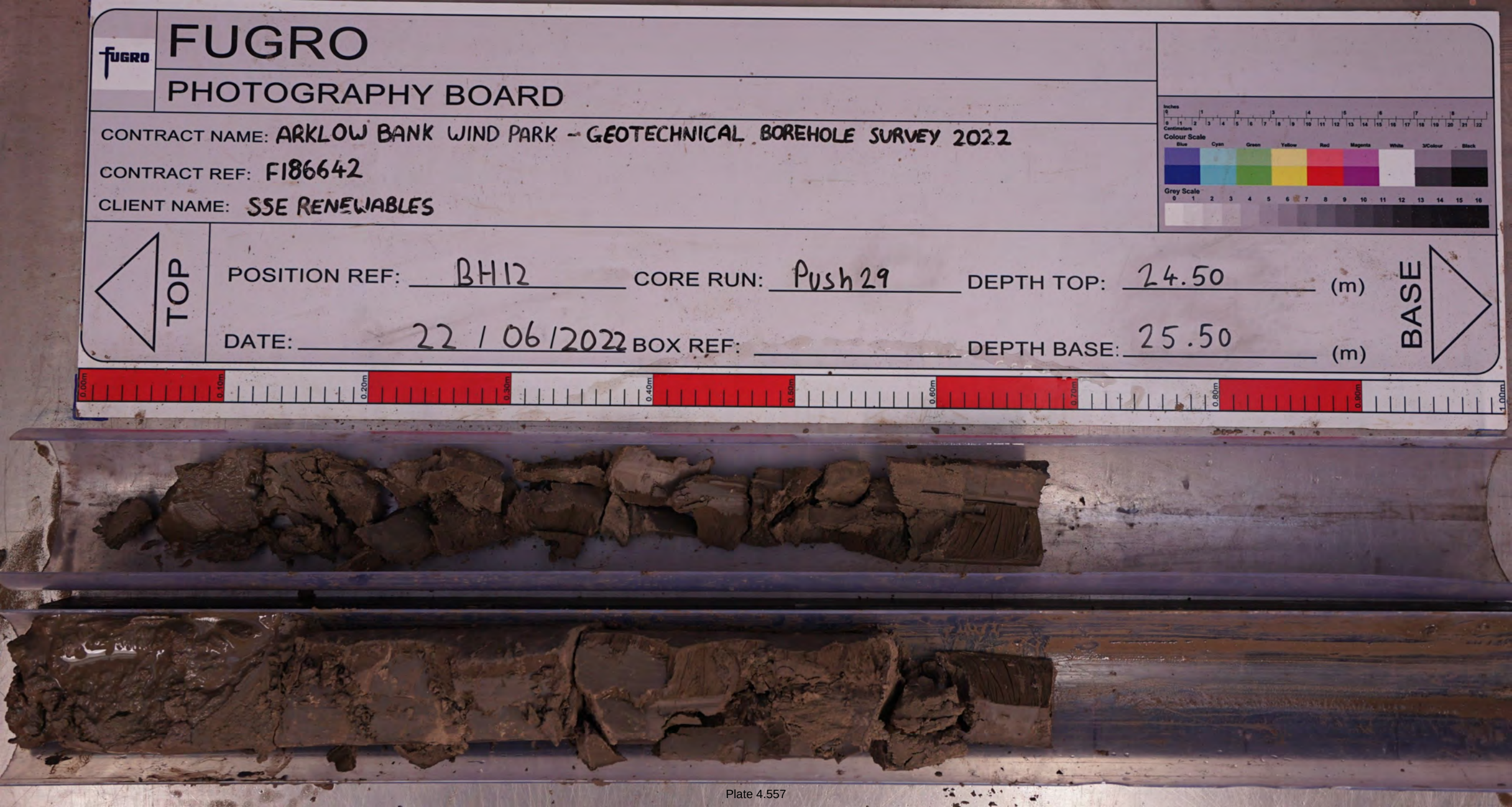
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 29
DEPTH TOP: 24.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.557

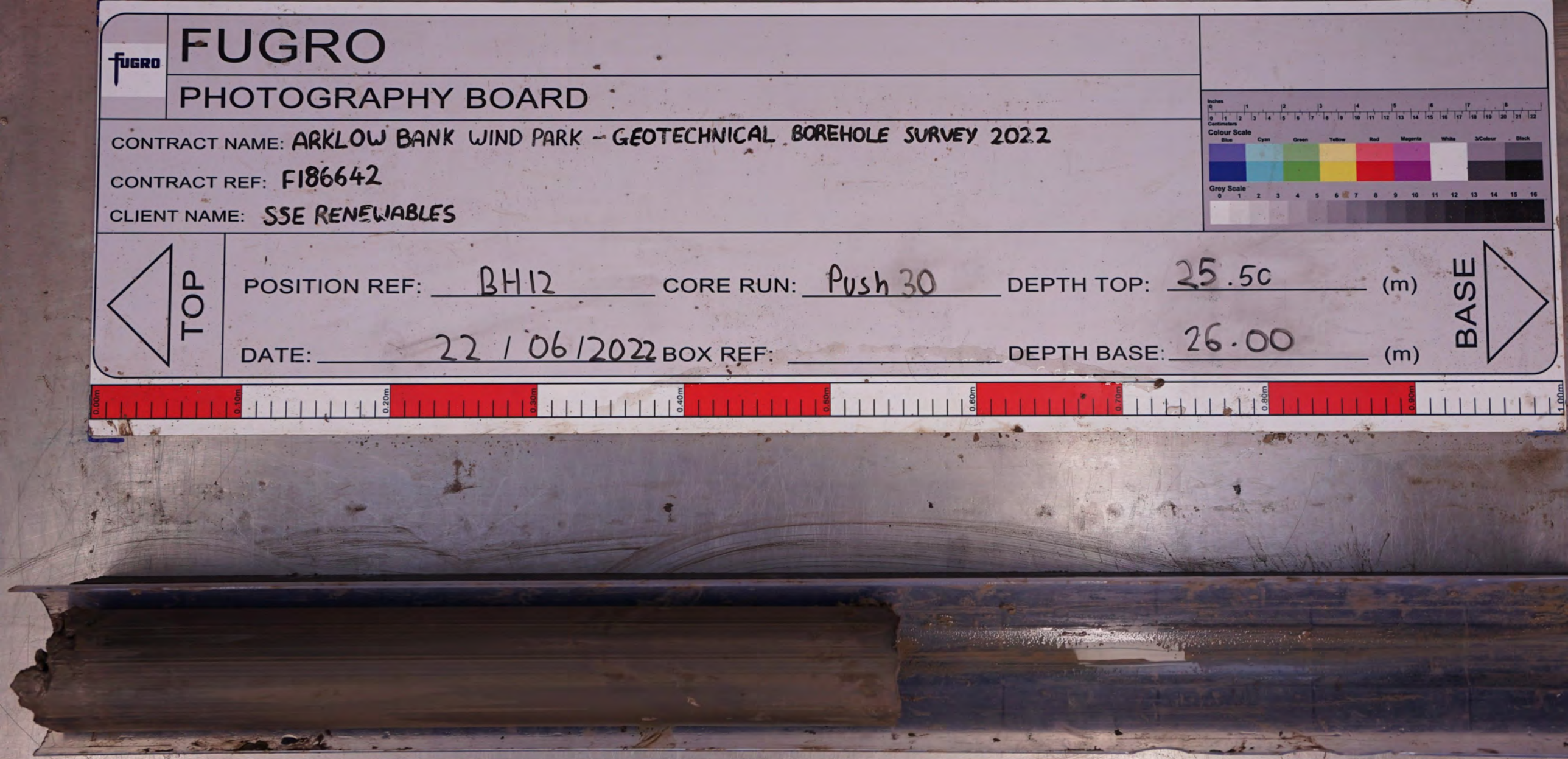
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 30
DEPTH TOP: 25.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 26.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.558

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 30 DEPTH TOP: 25.50 (m)

DATE: 22/06/2022 BOX REF: _____ DEPTH BASE: 26.00 (m)

BASE

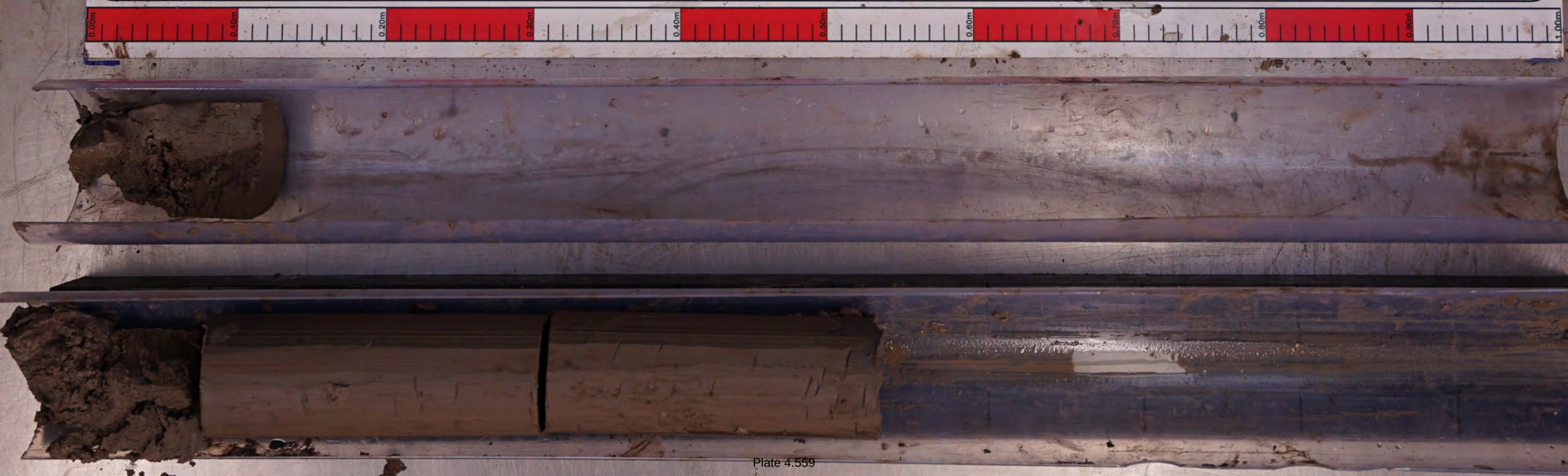

Plate 4.559

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 31 DEPTH TOP: 26.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 26.50 (m)

BASE



Plate 4.560


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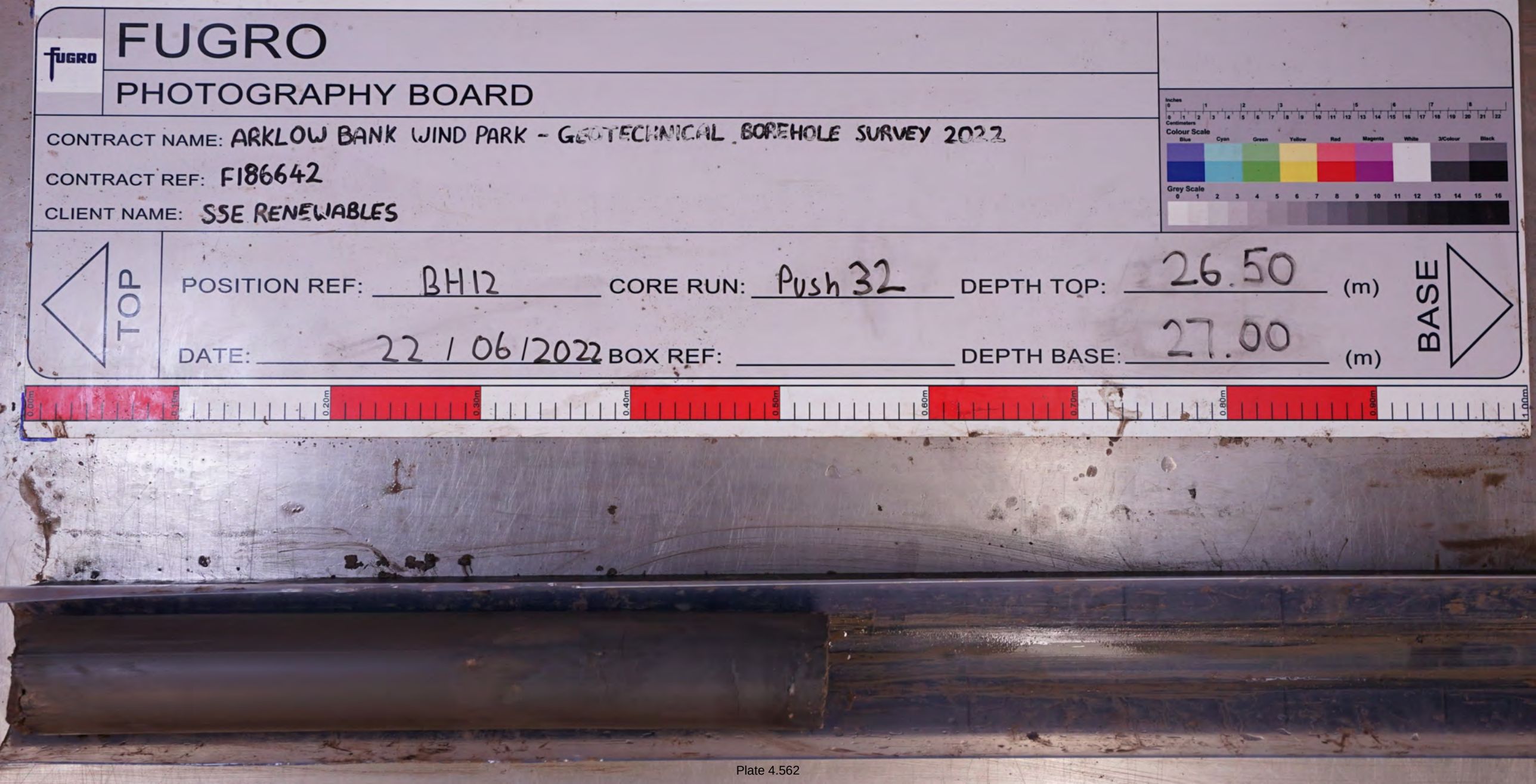
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 31
DEPTH TOP: 26.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.561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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 32
DEPTH TOP: 26.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.562

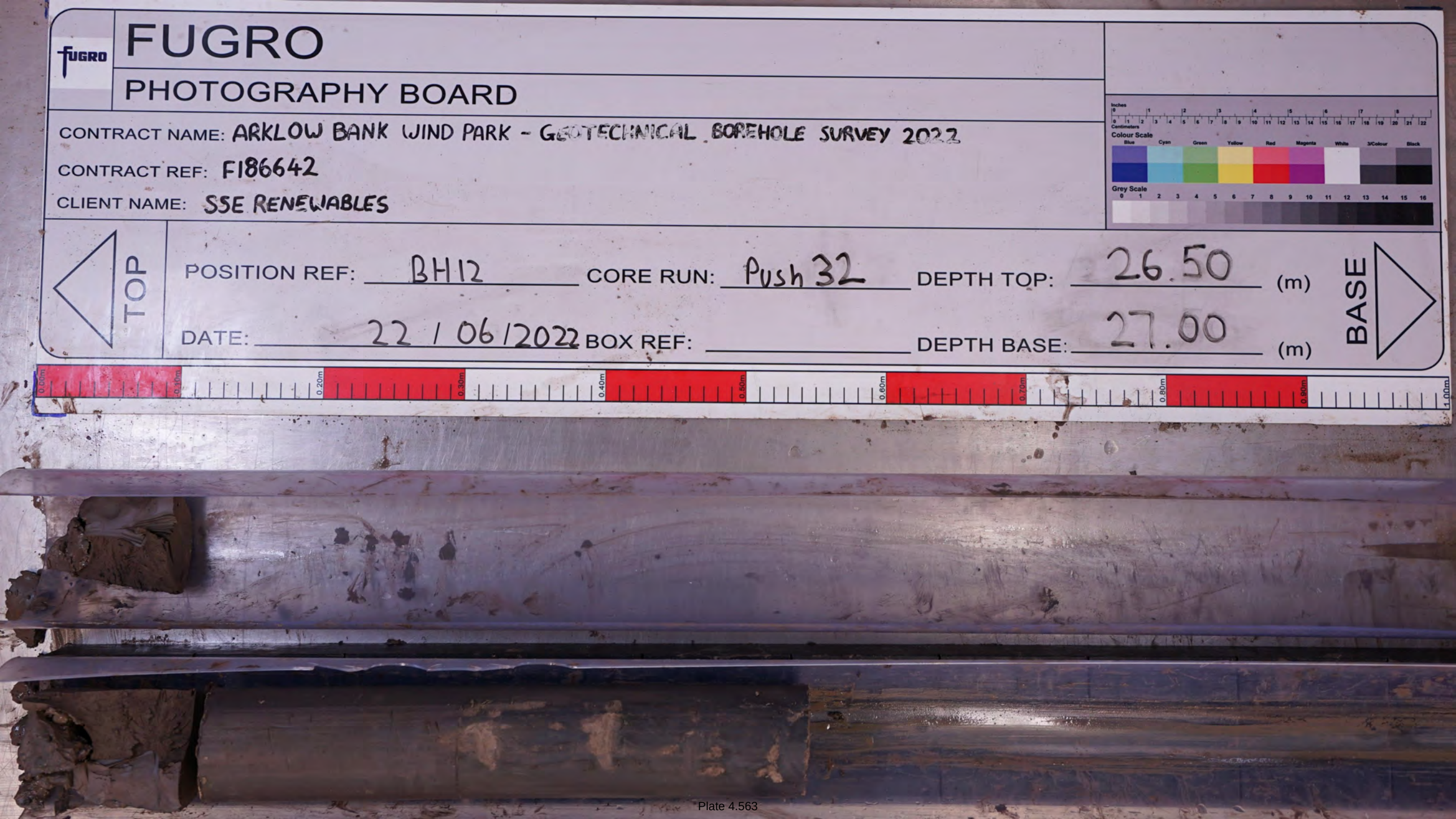
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 32
DEPTH TOP: 26.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.563

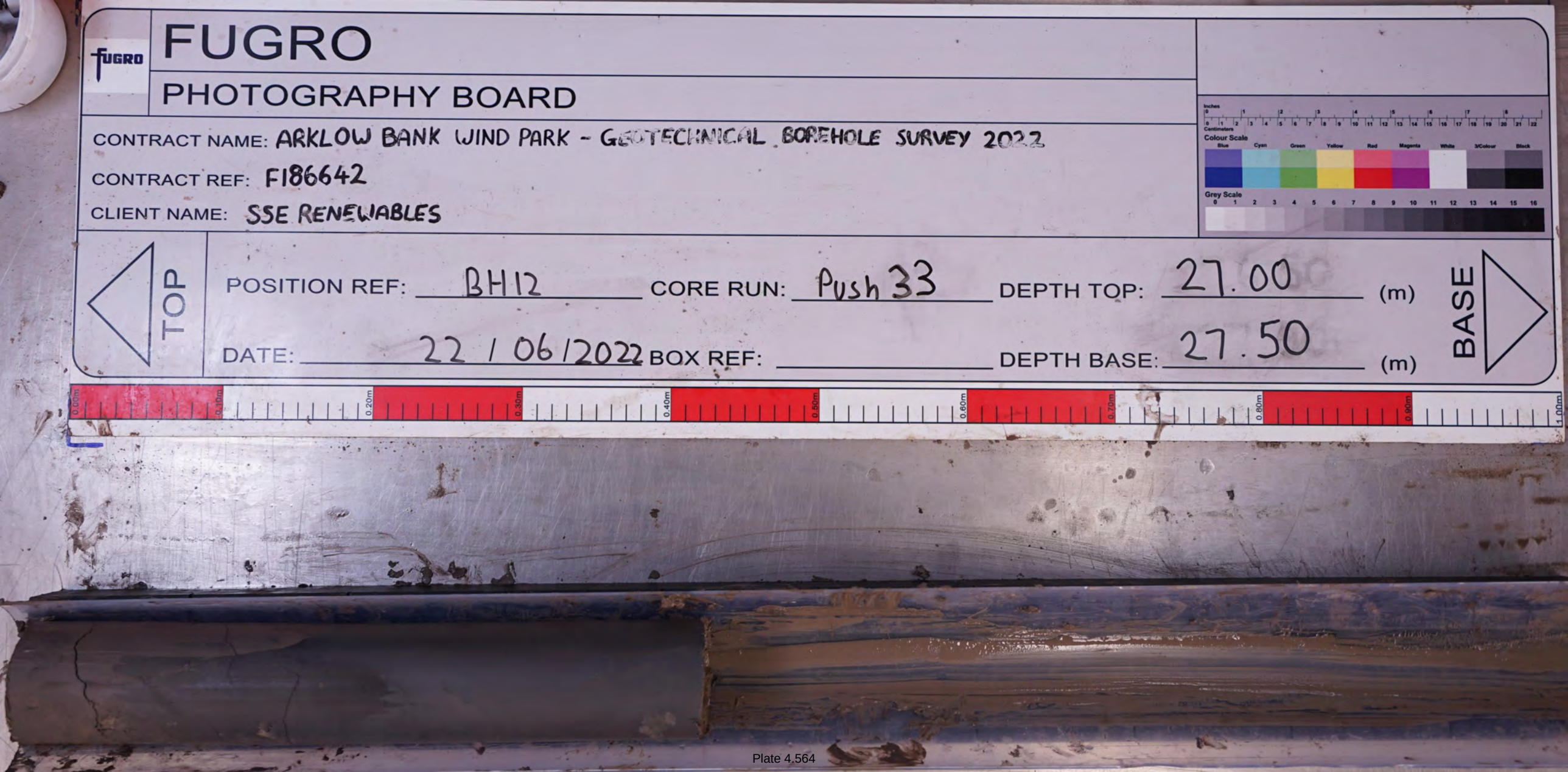
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 33
DEPTH TOP: 27.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 27.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.564

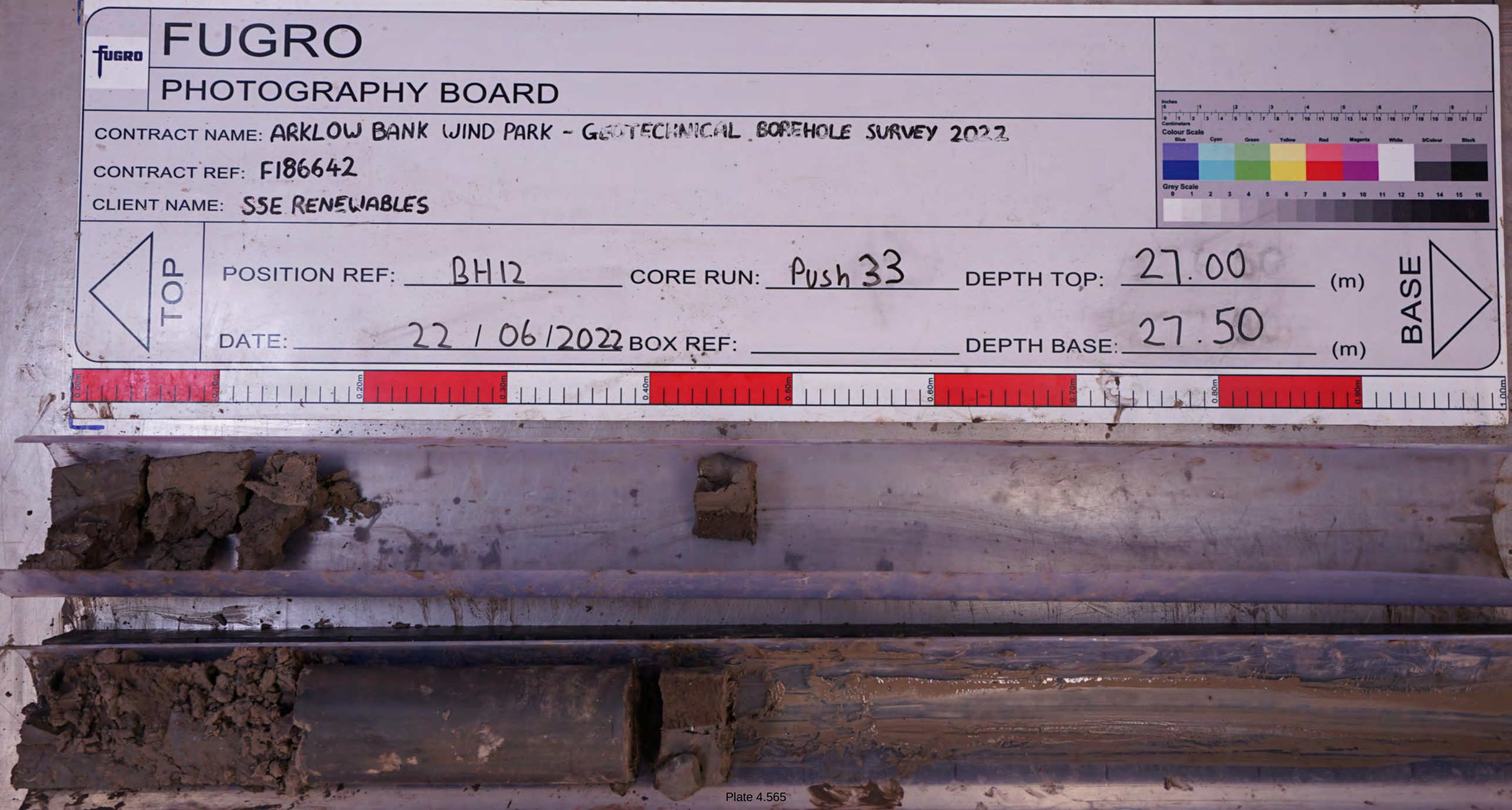
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 33
DEPTH TOP: 27.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 27.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.565

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 34 DEPTH TOP: 28.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 29.00 (m)

BASE



Plate 4.566

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 34 DEPTH TOP: 28.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 29.00 (m)

BASE



Plate 4.567

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 35 DEPTH TOP: 29.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 29.50 (m)

BASE

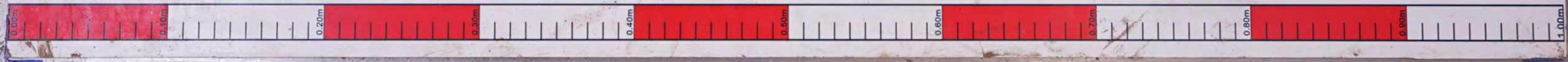

Plate 4.568

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 35 DEPTH TOP: 29.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 29.50 (m)

BASE

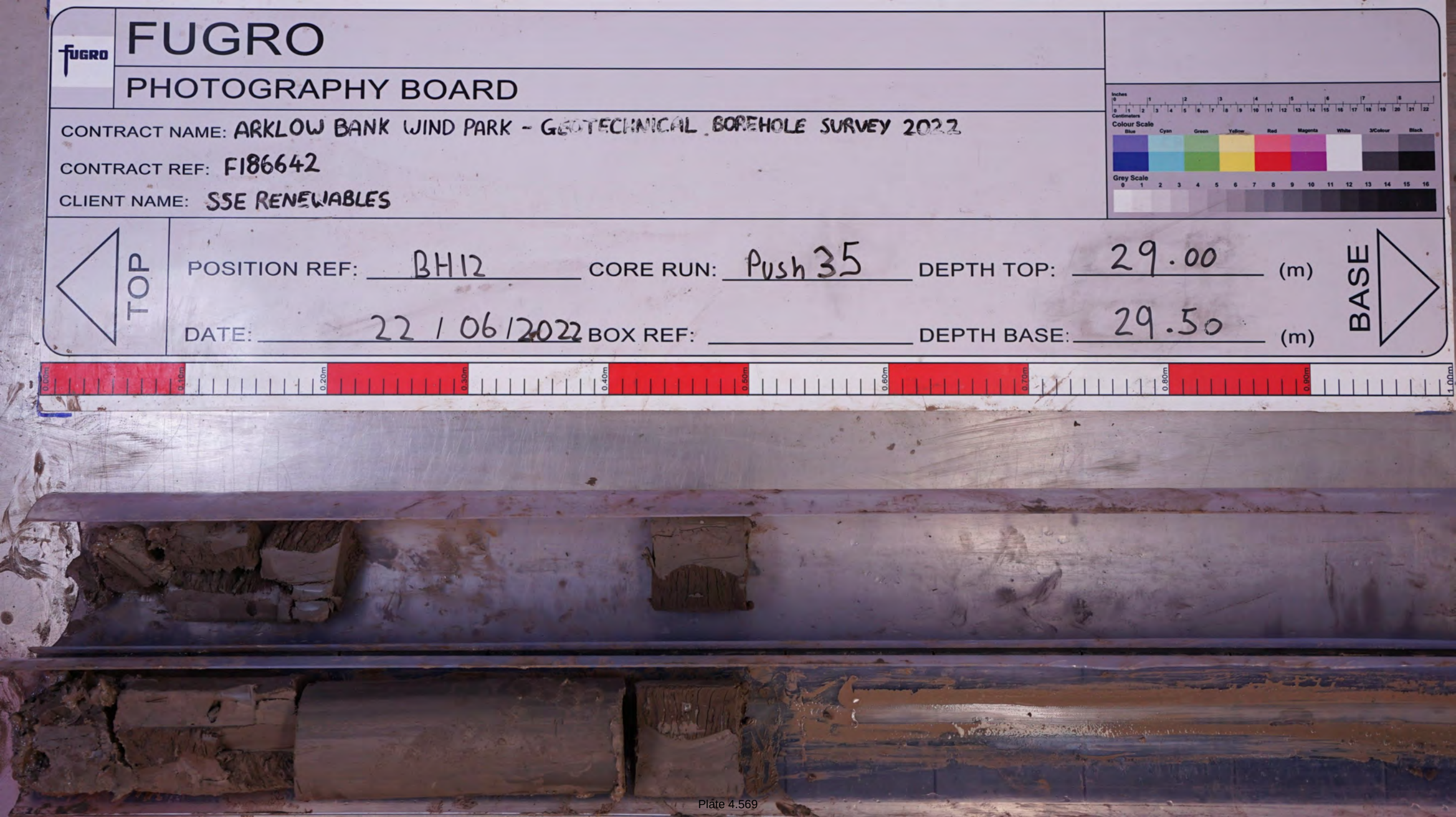

Plate 4.569

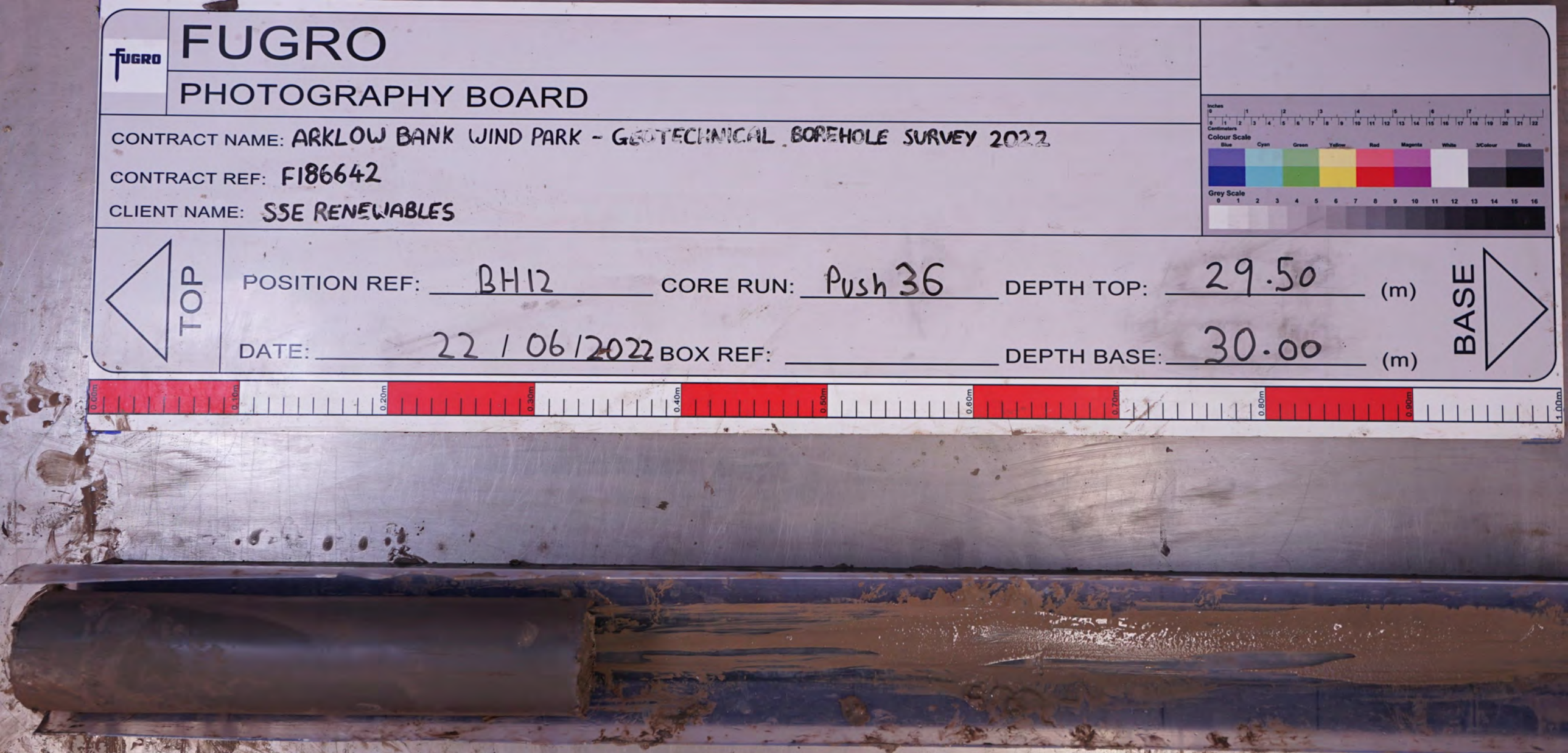
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 36
DEPTH TOP: 29.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 30.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.570


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 36
DEPTH TOP: 29.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 30.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.571

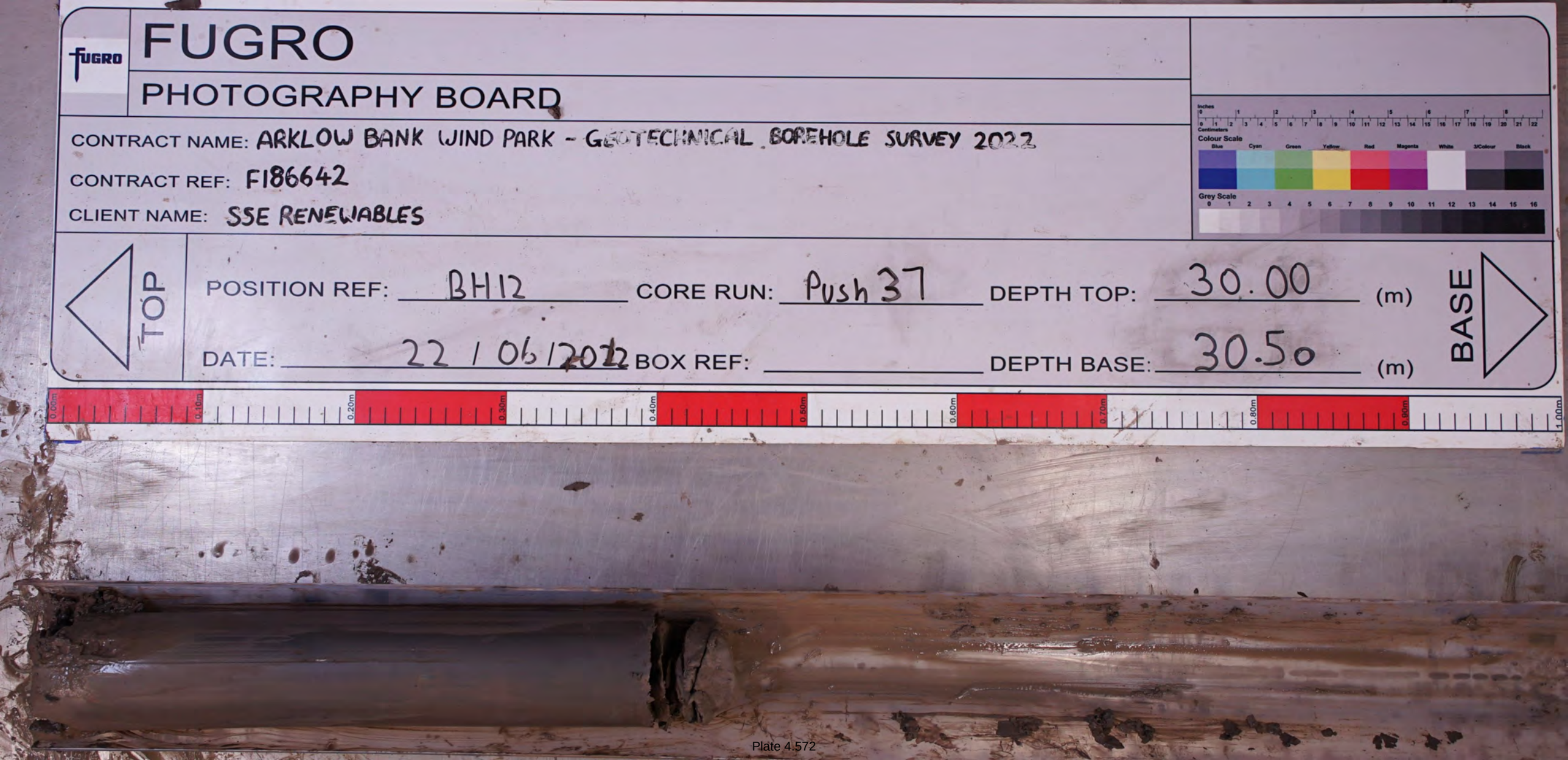
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 37
DEPTH TOP: 30.00 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 30.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.572

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 37 DEPTH TOP: 30.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 30.50 (m)

BASE



Plate 4.573

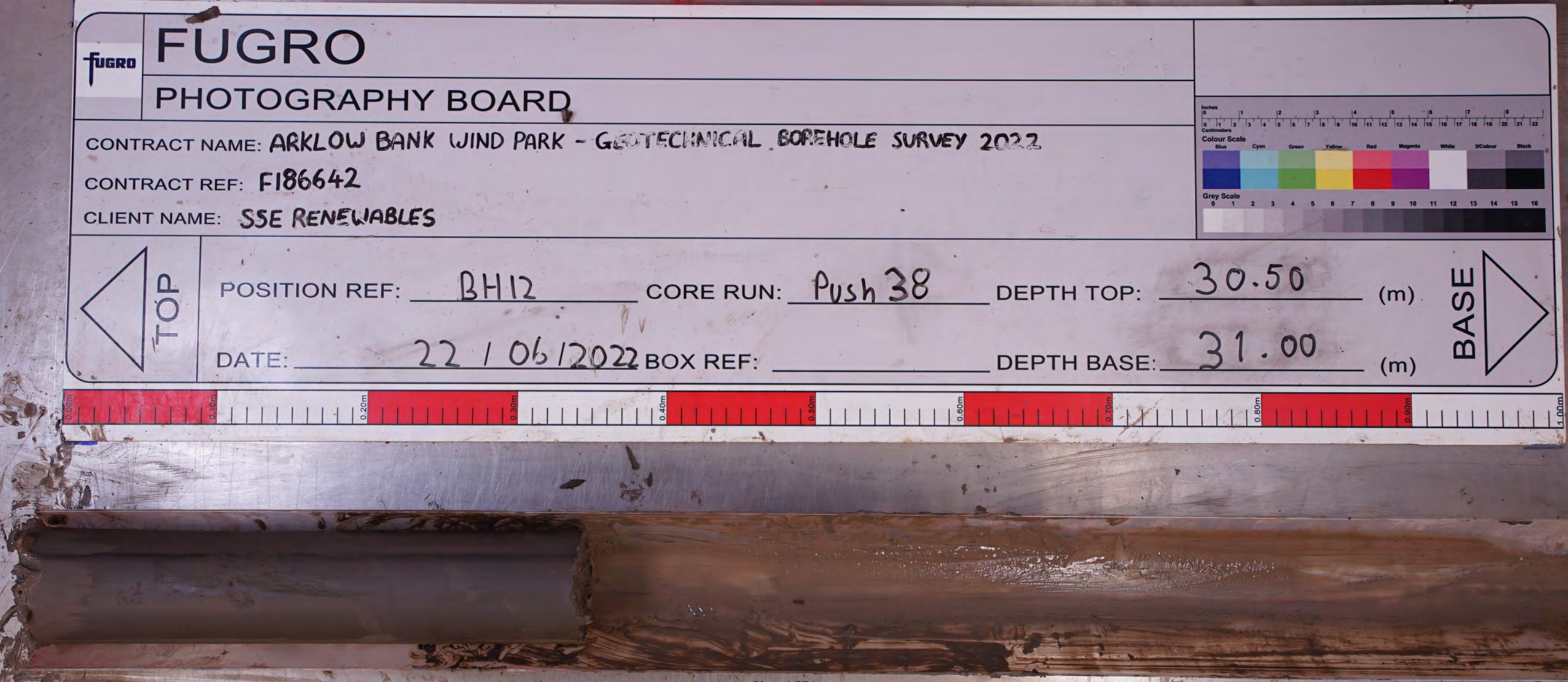
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 38
DEPTH TOP: 30.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 31.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.574

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 38 DEPTH TOP: 30.50 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 31.00 (m)

BASE

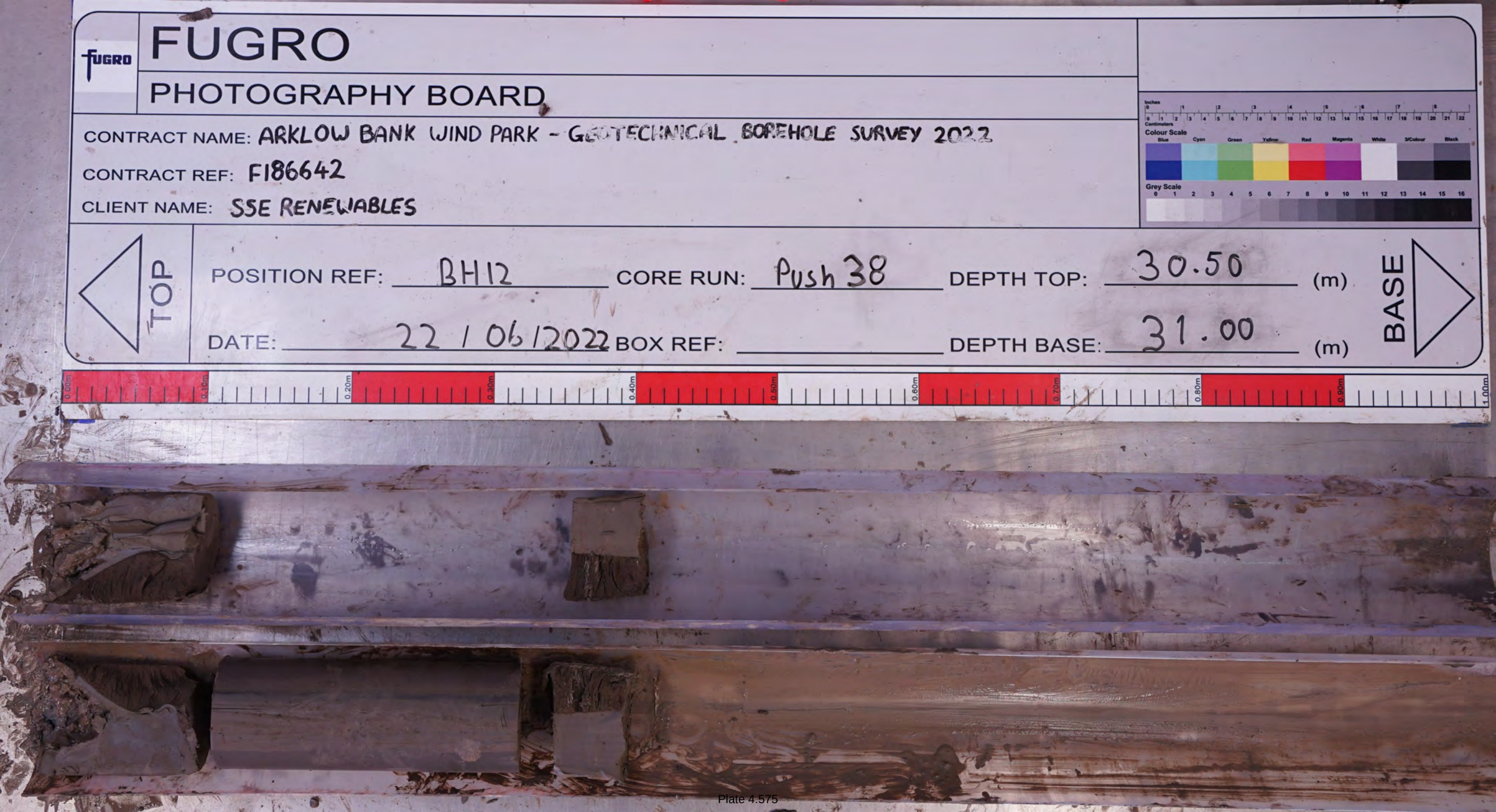
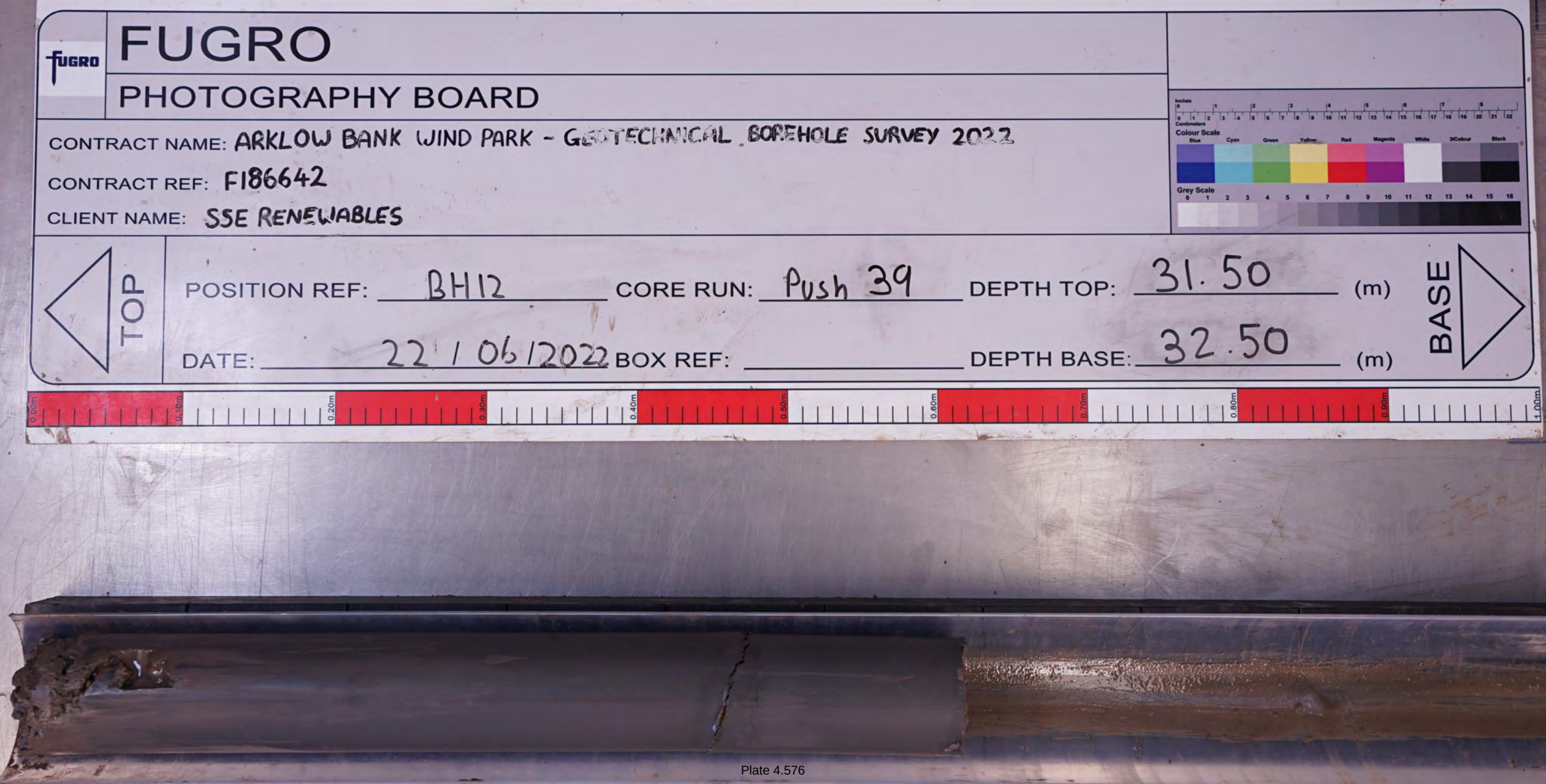


Plate 4.575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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 39
DEPTH TOP: 31.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 32.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.576

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 39 DEPTH TOP: 31.50 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 32.50 (m)

BASE

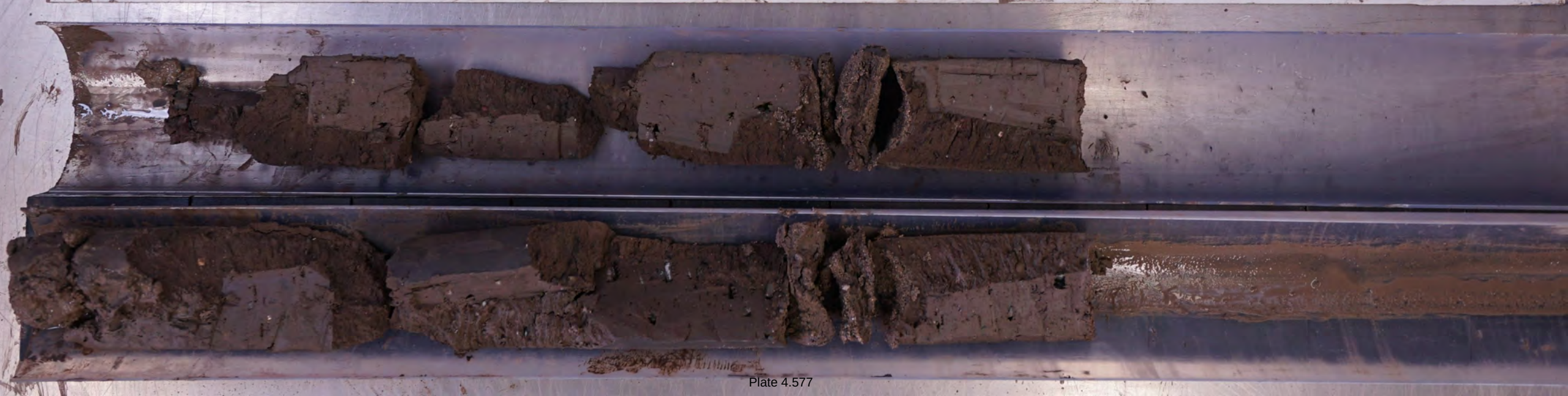

Plate 4.577

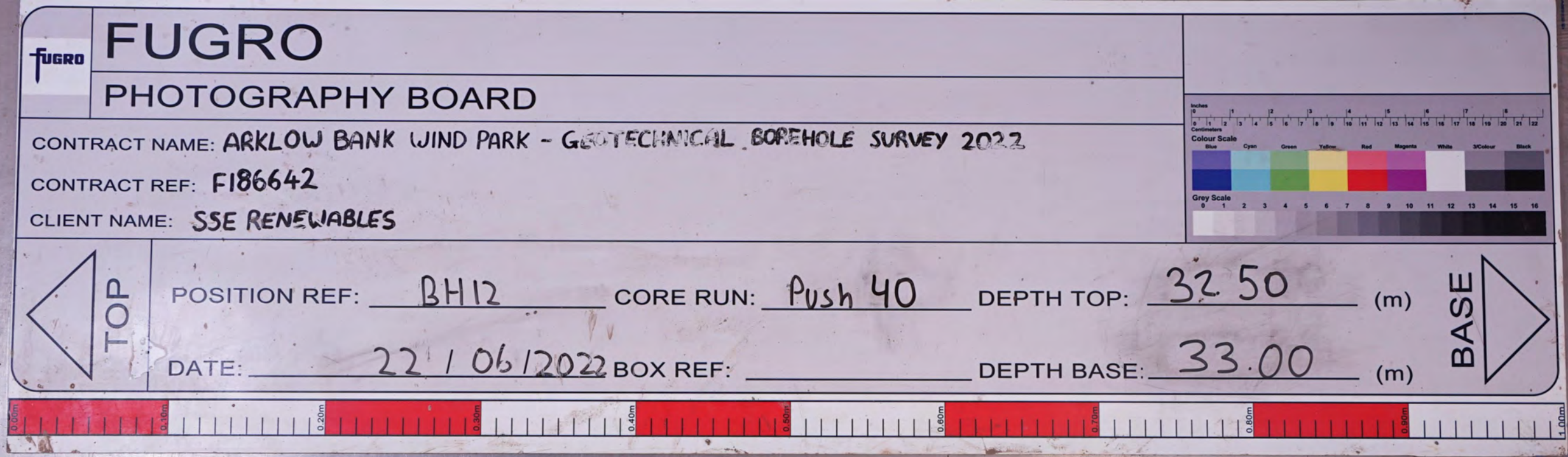
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 40
DEPTH TOP: 32.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 33.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.578


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 40
DEPTH TOP: 32.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 33.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.579

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 41 DEPTH TOP: 33.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 33.40 (m)

BASE



Plate 4.580

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 41 DEPTH TOP: 33.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 33.40 (m)

BASE



Plate 4.581

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 42 DEPTH TOP: 33.50 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 34.00 (m)

BASE





Plate 4.582

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 42 DEPTH TOP: 33.50 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 34.00 (m)

BASE



Plate 4.583

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 43 DEPTH TOP: 34.50 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 35.20 (m)

BASE



Plate 4.584

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 43 DEPTH TOP: 34.50 (m)

DATE: 22/06/2022 BOX REF: _____ DEPTH BASE: 35.20 (m)

BASE



Plate 4.585

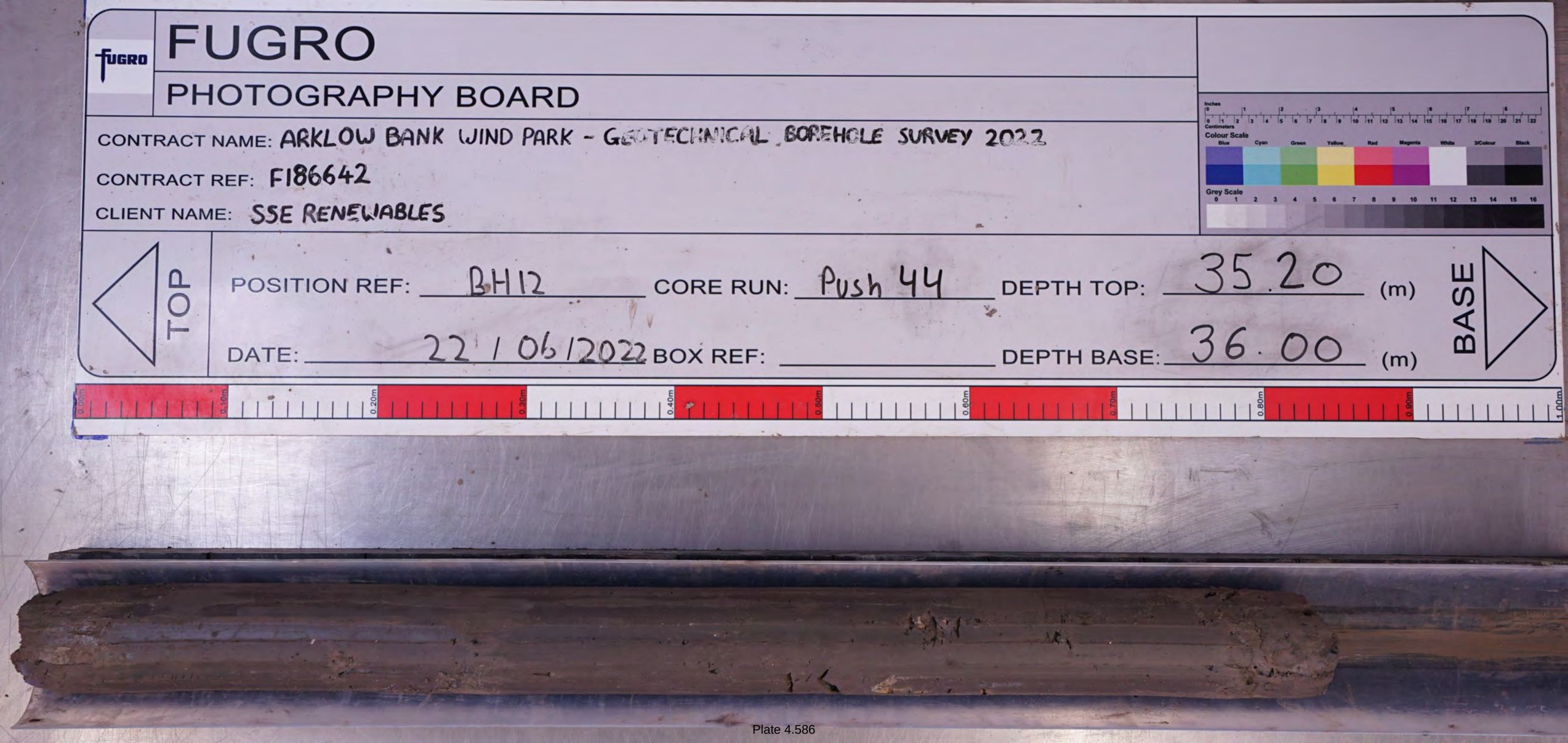

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 44
DEPTH TOP: 35.20 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 36.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.586

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 44 DEPTH TOP: 35.20 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 36.00 (m)

BASE



Plate 4.587

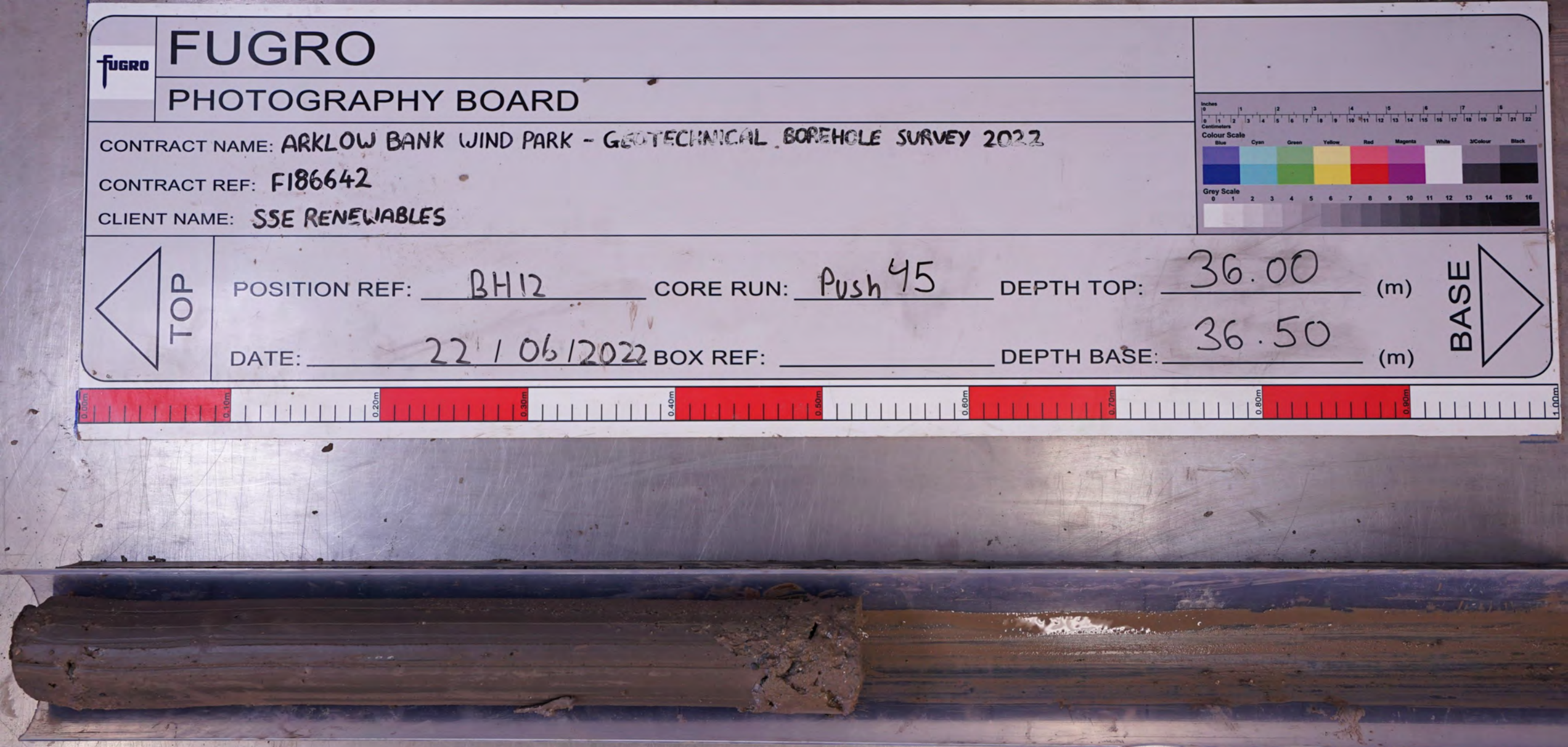

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 45
DEPTH TOP: 36.00 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 36.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.588

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 45 DEPTH TOP: 36.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 36.50 (m)

BASE





Plate 4.589

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 46 DEPTH TOP: 36.50 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 37.00 (m)

BASE



Plate 4.590

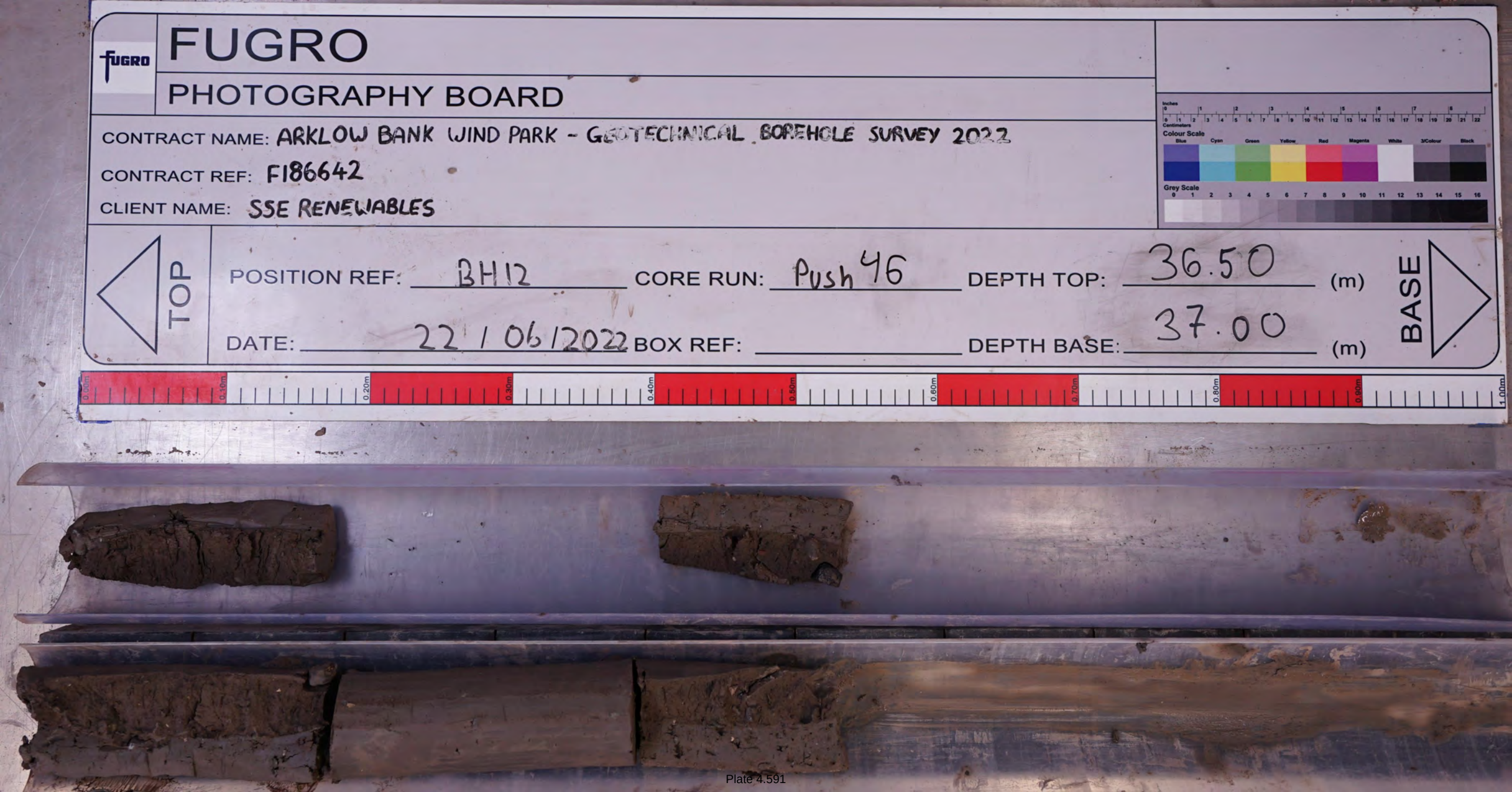

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 46
DEPTH TOP: 36.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 37.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.591

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 47 DEPTH TOP: 37.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 37.50 (m)

BASE



Plate 4.592

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

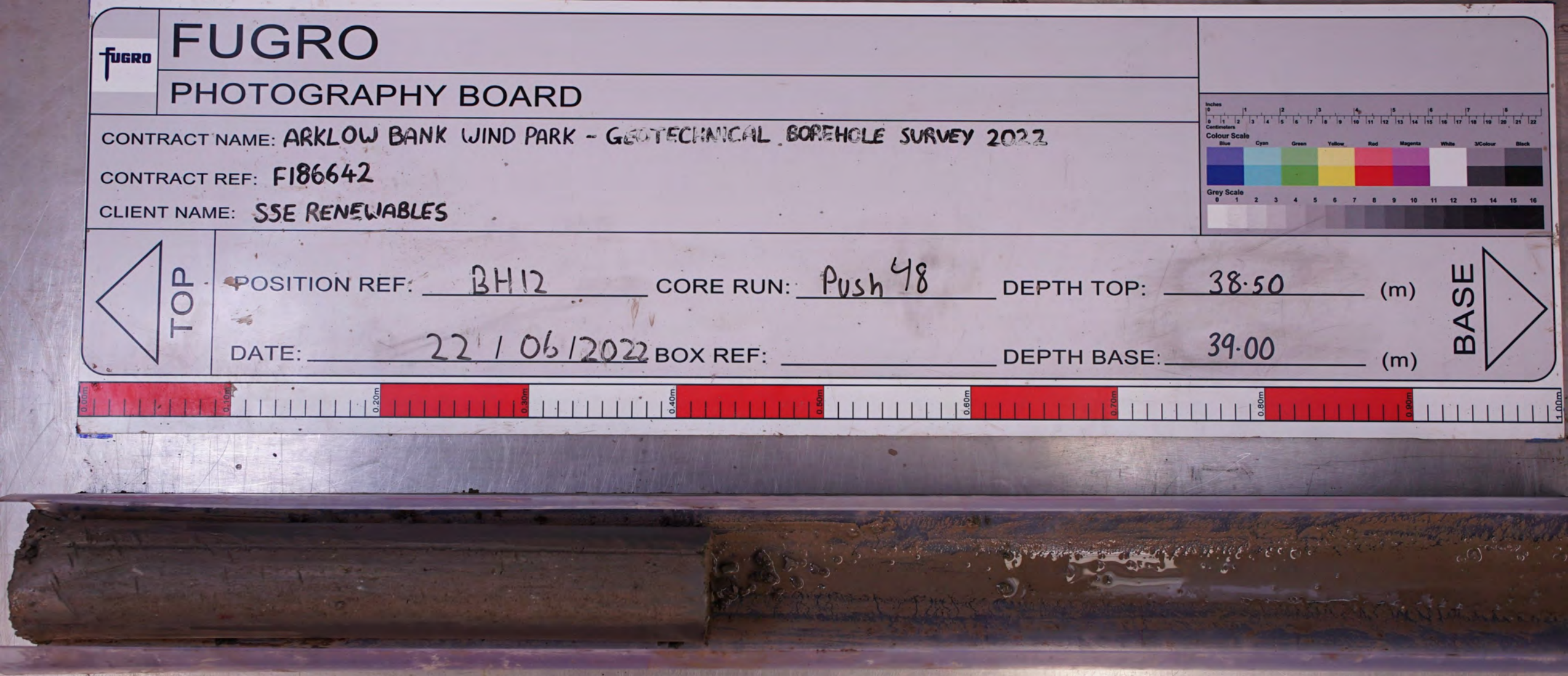
POSITION REF: BH12 CORE RUN: Push 47 DEPTH TOP: 37.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 37.50 (m)

BASE



Plate 4.593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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 48
DEPTH TOP: 38.50 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 39.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.594

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 48 DEPTH TOP: 38.50 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 39.00 (m)

BASE

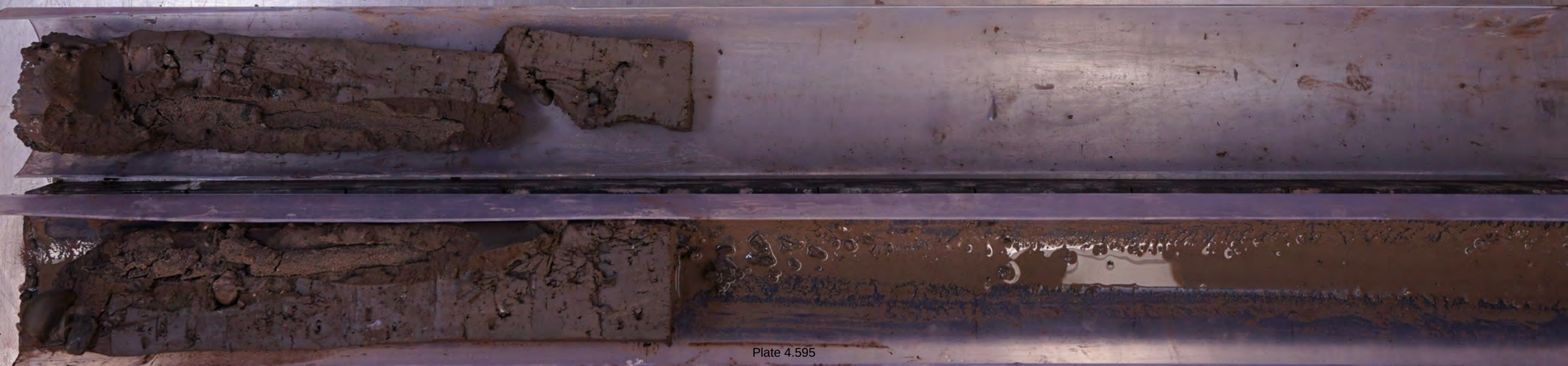
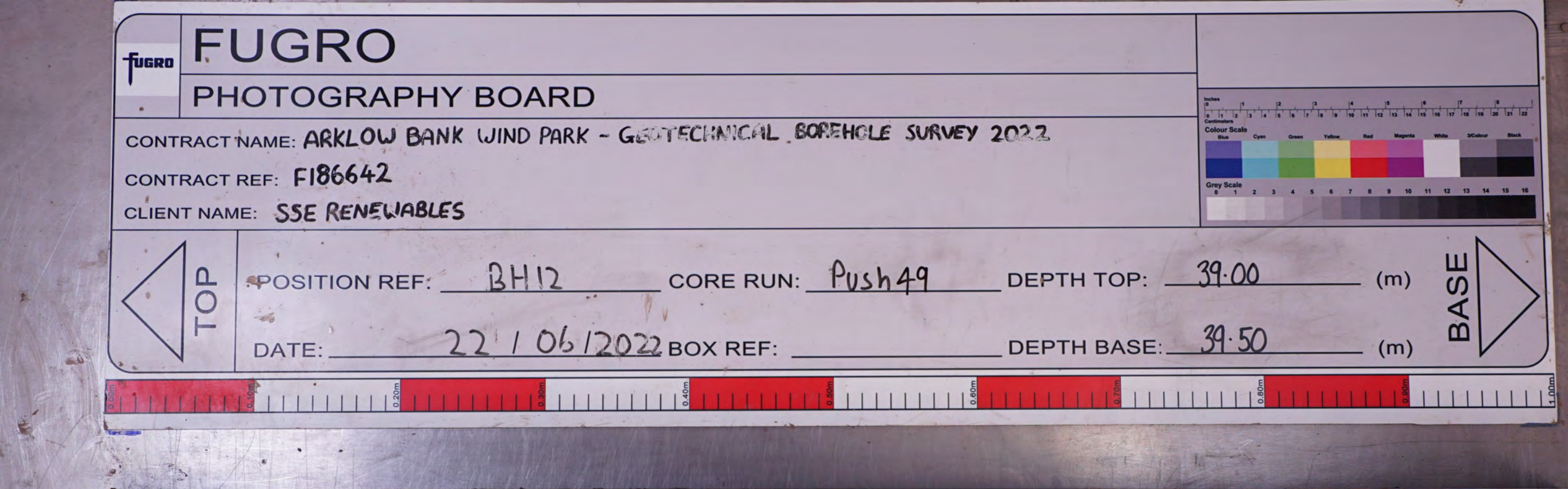


Plate 4.595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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push49
DEPTH TOP: 39.00 (m)
DATE: 22/06/2022
BOX REF:
DEPTH BASE: 39.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.596

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push49 DEPTH TOP: 39.00 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 39.50 (m)

BASE



Plate 4.597

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 50 DEPTH TOP: 39.50 (m)

DATE: 22/06/2022 BOX REF: DEPTH BASE: 40.00 (m)

BASE



Plate 4.598

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 50 DEPTH TOP: 39.50 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 40.00 (m)

BASE



Plate 4.599

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 51 DEPTH TOP: 40.00 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 40.50 (m)

BASE



Plate 4.600

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 51 DEPTH TOP: 40.00 (m)

DATE: 22 / 06 / 2022 BOX REF: _____ DEPTH BASE: 40.50 (m)

BASE



Plate 4.601

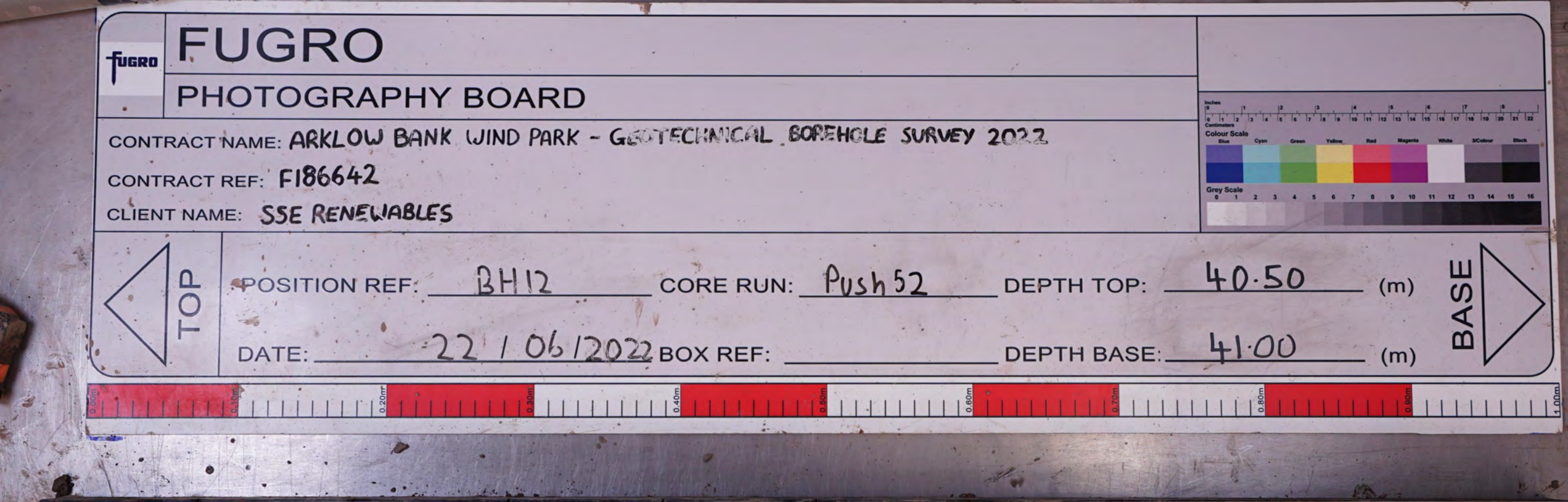
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH12
CORE RUN: Push 52
DEPTH TOP: 40.50 (m)
DATE: 22 / 06 / 2022
BOX REF:
DEPTH BASE: 41.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.602

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH12 CORE RUN: Push 52 DEPTH TOP: 40.50 (m)

DATE: 22 / 06 / 2022 BOX REF: DEPTH BASE: 41.00 (m)

BASE



Plate 4.603

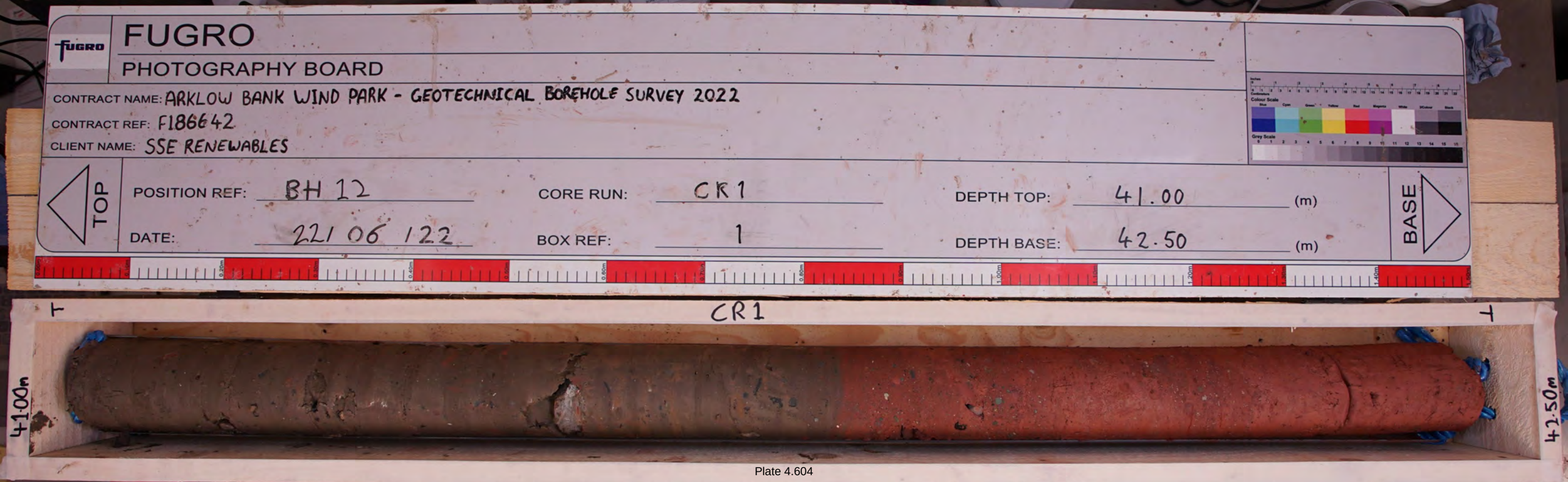
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
CORE RUN: CR1
DEPTH TOP: 41.00 (m)
DATE: 22/06/22
BOX REF: 1
DEPTH BASE: 42.50 (m)
BASE
CR1
41.00m
42.50m

Plate 4.604


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
CORE RUN: CR1
DEPTH TOP: 41.00 (m)
DATE: 22/06/22
BOX REF: 1
DEPTH BASE: 42.50 (m)
BASE
CR1
41.00m
42.50m

Plate 4.605

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 12

CORE RUN: CR1

DEPTH TOP: 41.00 (m)

DATE: 22/06/22

BOX REF: 1

DEPTH BASE: 42.50 (m)

BASE

CR1

41.00m

42.50m



Plate 4.606

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 12 CORE RUN: CR2 DEPTH TOP: 42.50 (m)

DATE: 22/06/22 BOX REF: 2 DEPTH BASE: 44.00 (m)

BASE

CR2

42.50m

44.00m

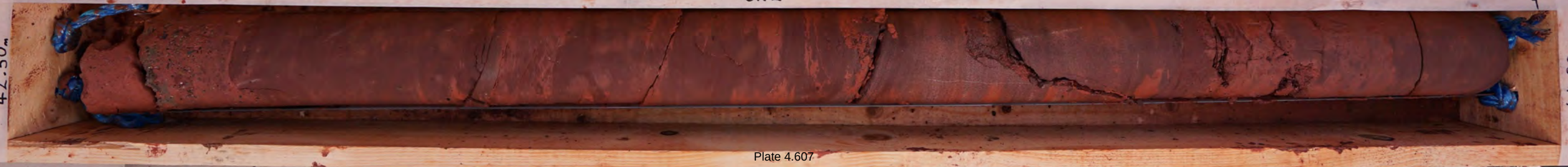

Plate 4.607

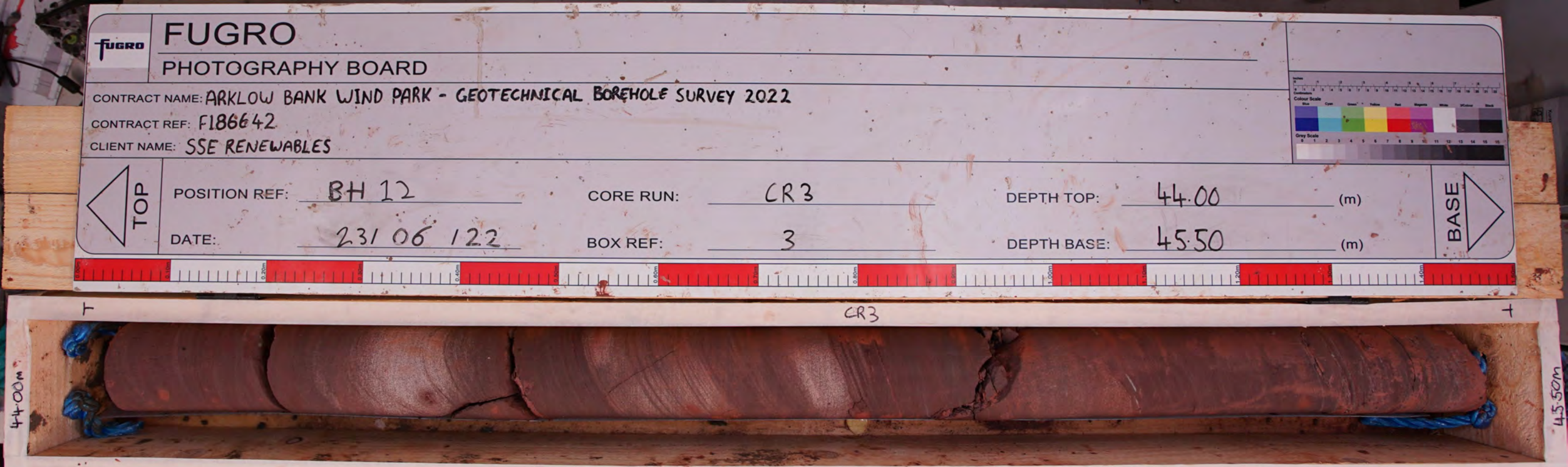
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
CORE RUN: CR3
DEPTH TOP: 44.00 (m)
DATE: 23/06/22
BOX REF: 3
DEPTH BASE: 45.50 (m)
BASE
CR3
44.00m
45.50m

Plate 4.608


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
CORE RUN: CR4+5
DEPTH TOP: 45.50 (m)
DATE: 23/06/22
BOX REF: 4
DEPTH BASE: (47.22) (m)
BASE
CR4
4700H CR5 TNTS
4550M
(47.22)

Plate 4.609


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
DATE: 23/06/22
CORE RUN: CR5+6
BOX REF: 5
DEPTH TOP: (47.22) (m)
DEPTH BASE: (48.64) (m)
BASE
CR5
CR6
48.50
(47.22m)
(48.64m)

Plate 4.610

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 12

CORE RUN: CR6+7

DEPTH TOP: (48.64) (m)

DATE: 23/06/22

BOX REF: 6

DEPTH BASE: (50.09) (m)

BASE



Plate 4.611

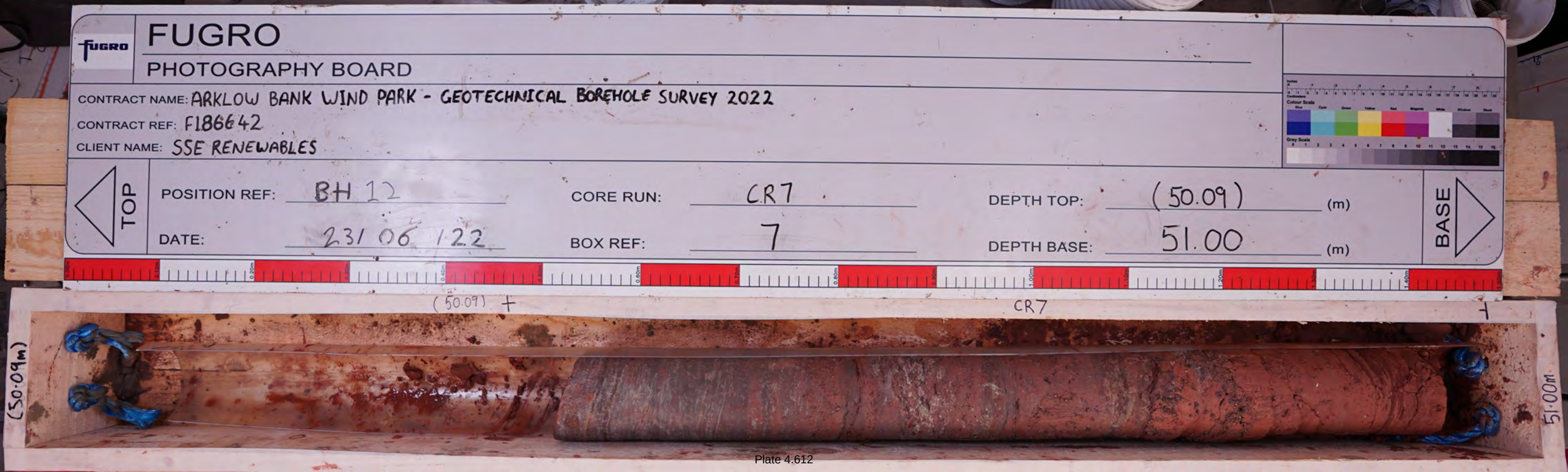
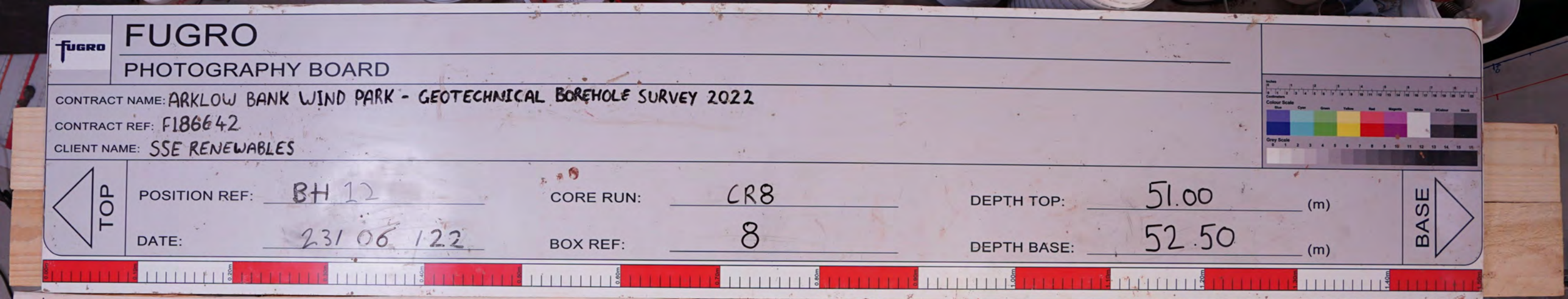

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
DATE: 23/06/22
CORE RUN: CR7
BOX REF: 7
DEPTH TOP: (50.09) (m)
DEPTH BASE: 51.00 (m)
BASE
(50.09)
CR7
(50.09m)
51.00m

Plate 4.612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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 12
DATE: 23/06/22
CORE RUN: CR8
BOX REF: 8
DEPTH TOP: 51.00 (m)
DEPTH BASE: 52.50 (m)
BASE
CR8
51.00m
52.50m

Plate 4.613

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 12

DATE: 23/06/22

CORE RUN: CR9

BOX REF: 9

DEPTH TOP: 52.50 (m)

DEPTH BASE: 53.50 (m)

BASE

CR9

52.50m

53.50m

Plate 4.614

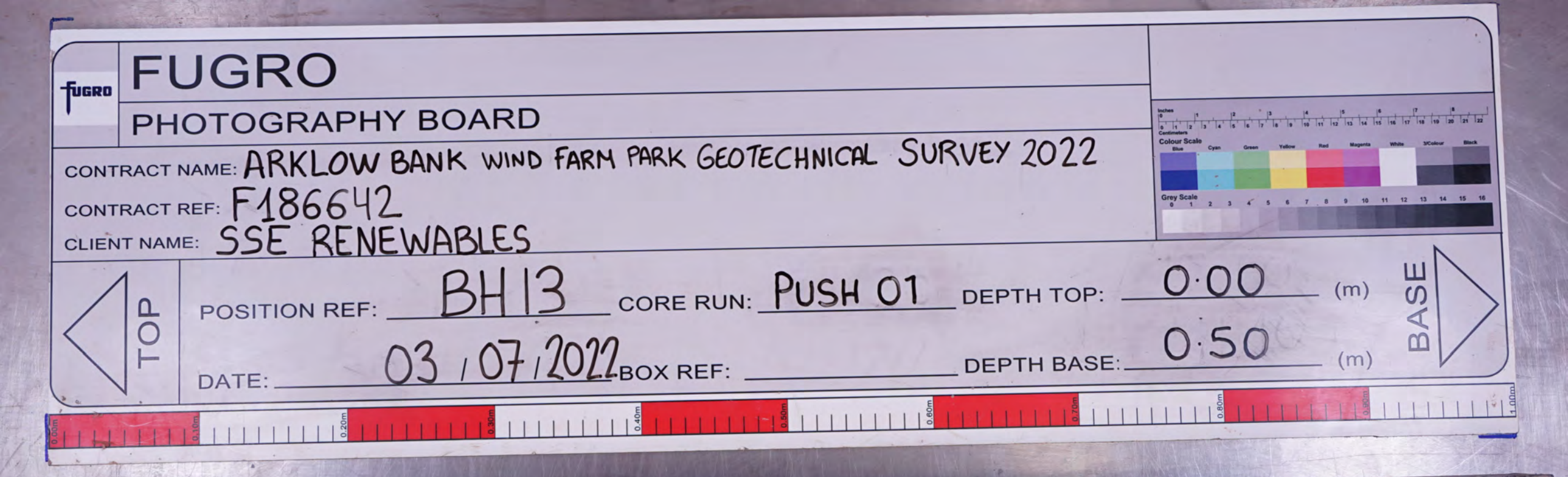
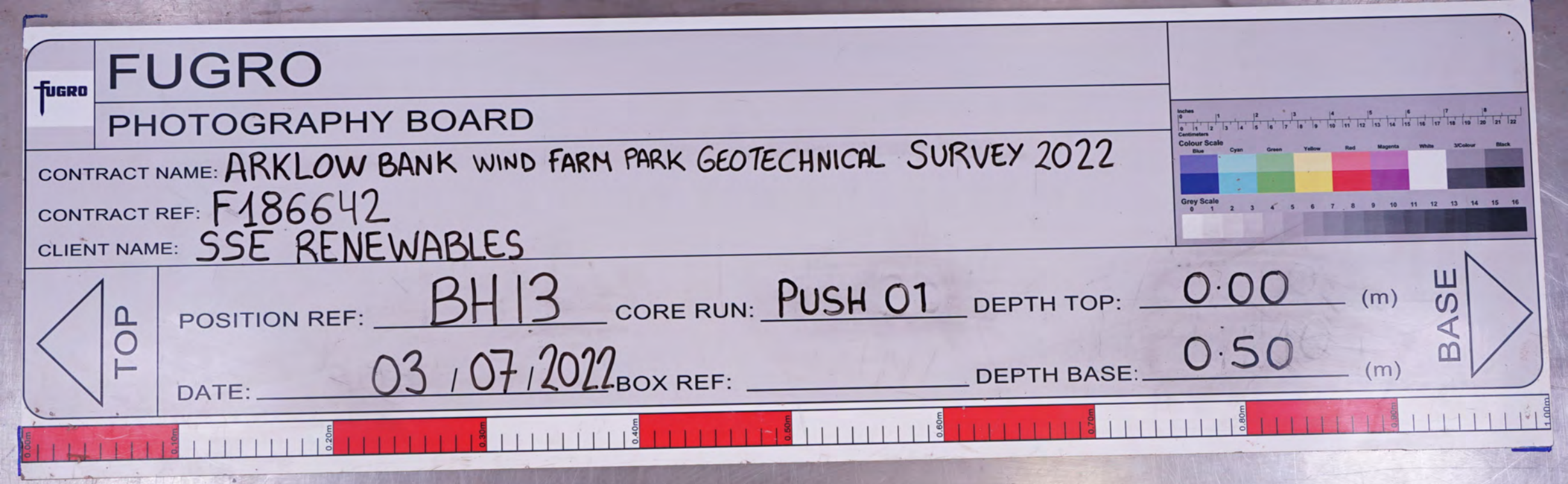

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 01
DEPTH TOP: 0·00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 0·50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.615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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 01
DEPTH TOP: 0·00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 0·50 (m)
BASE
Colour Scale
Grey Scale



Plate 4.616

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

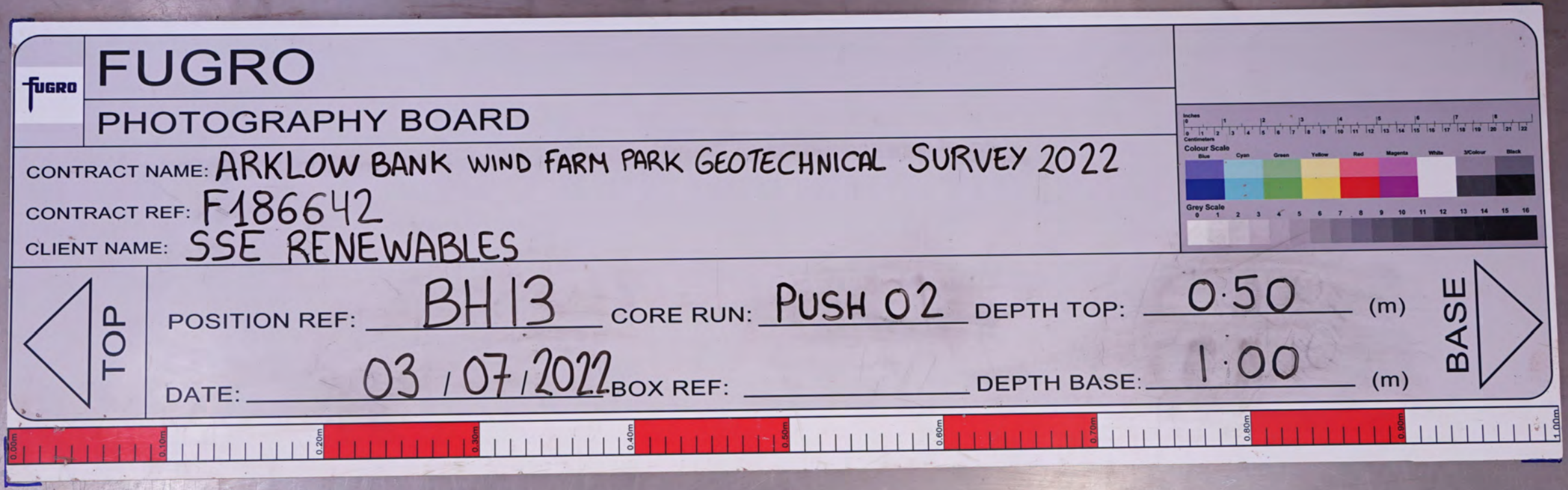
POSITION REF: BH13 CORE RUN: HAMMER 3 DEPTH TOP: 0·50 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 1·00 (m)

BASE



Plate 4.617



NO RECOVERY

Plate 4.618

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: HAMMER 4 DEPTH TOP: 0.95 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 1.45 (m)

BASE



Plate 4.619

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: HAMMER 5 DEPTH TOP: 1.50 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 1.95 (m)

BASE

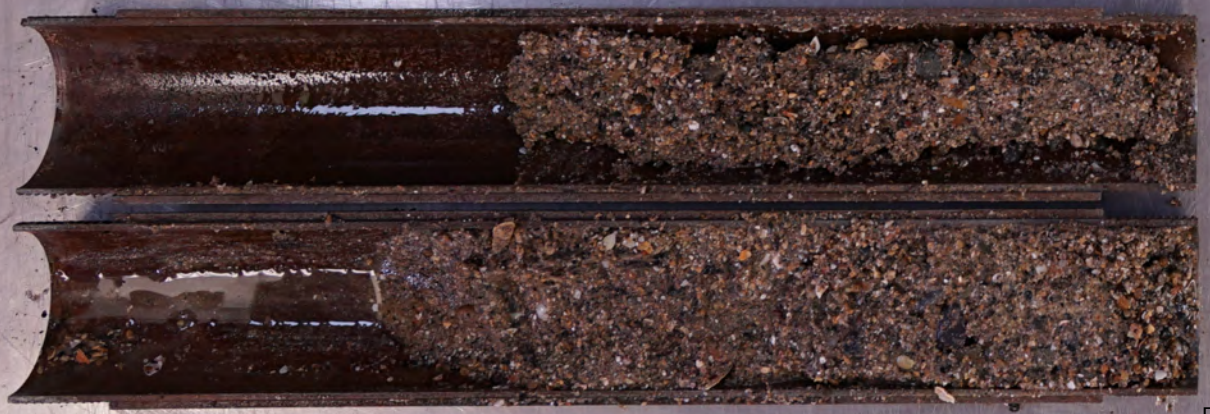

Plate 4.620

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: HAMMER 5 DEPTH TOP: 1.50 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 1.95 (m)

BASE



Plate 4.621

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CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: HAMMER 6 DEPTH TOP: 2.00 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 2.45 (m)

BASE



Plate 4.622

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: HAMMER 6 DEPTH TOP: 2.00 (m)

DATE: 03/07/2022 BOX REF: DEPTH BASE: 2.45 (m)

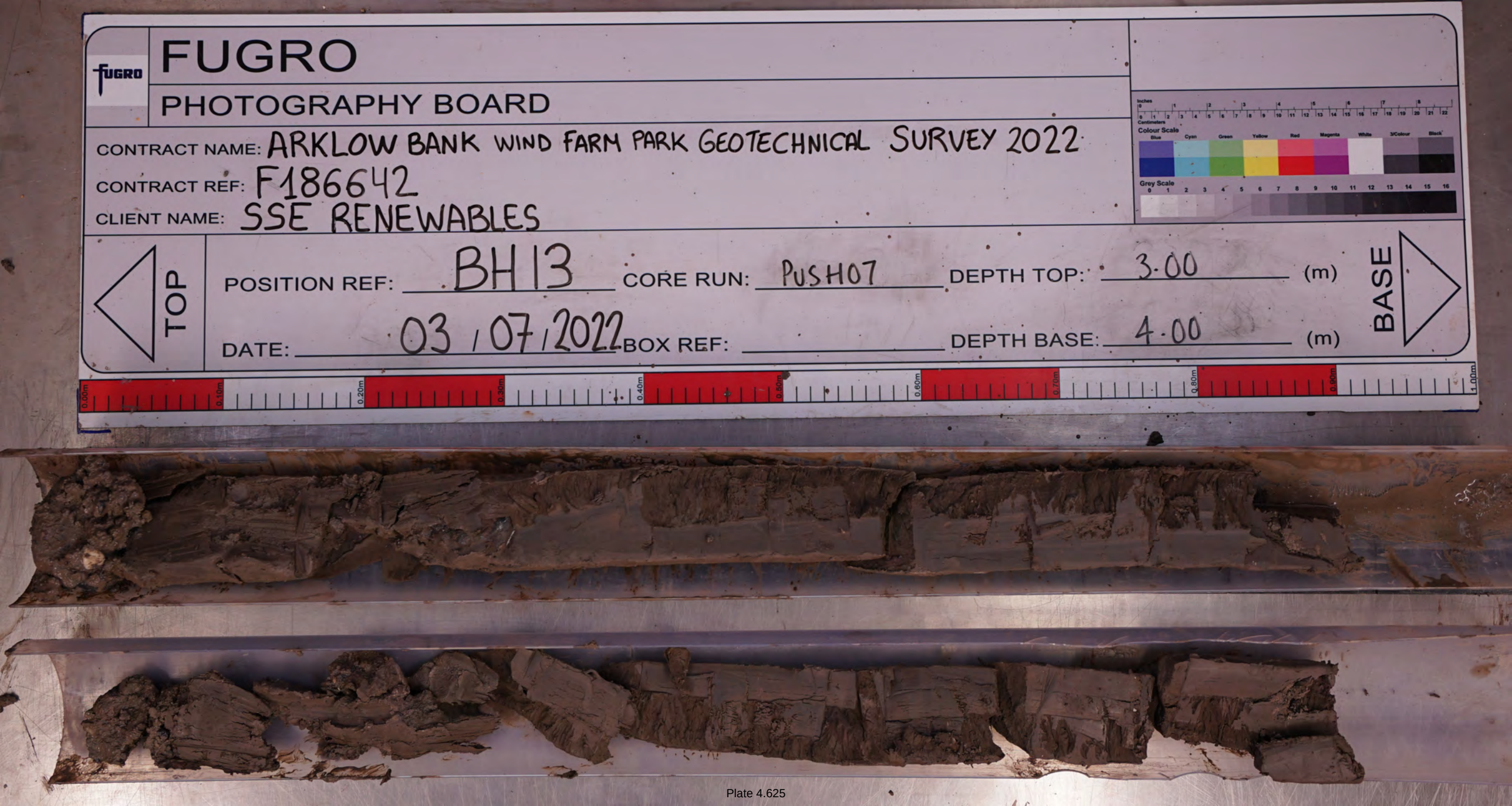
BASE



Plate 4.623


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH07
DEPTH TOP: 3.00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 4.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.624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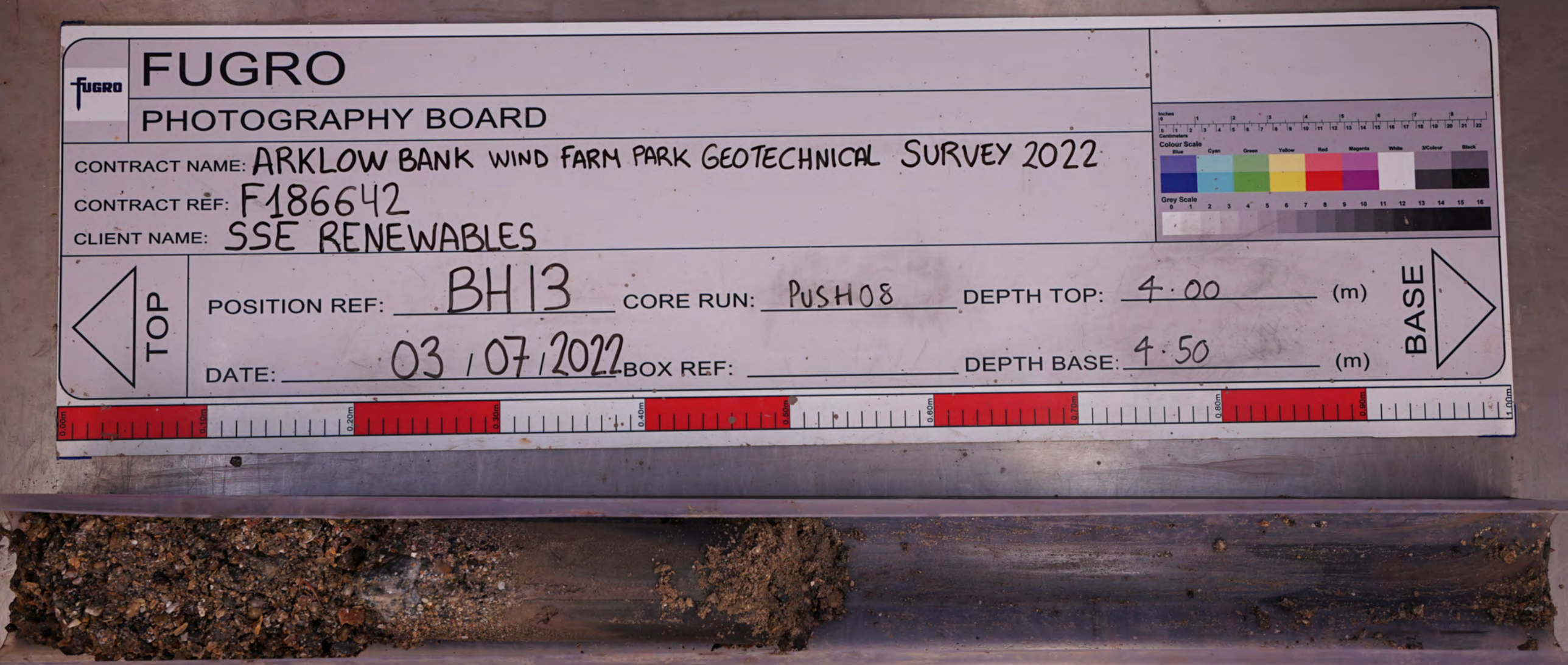
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH07
DEPTH TOP: 3.00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 4.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.625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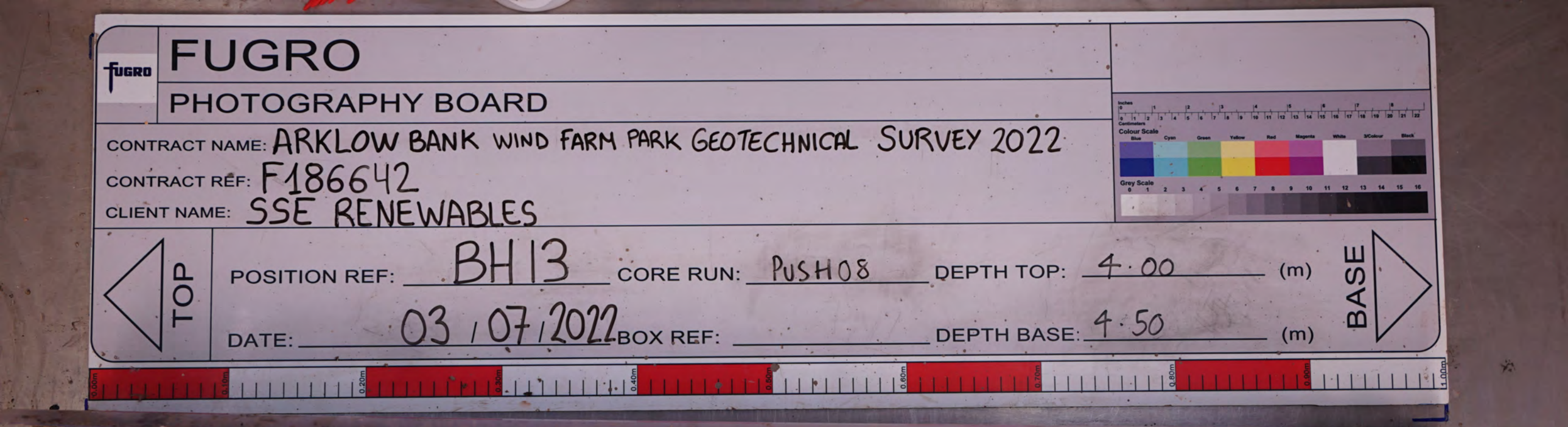
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH08
DEPTH TOP: 4.00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.626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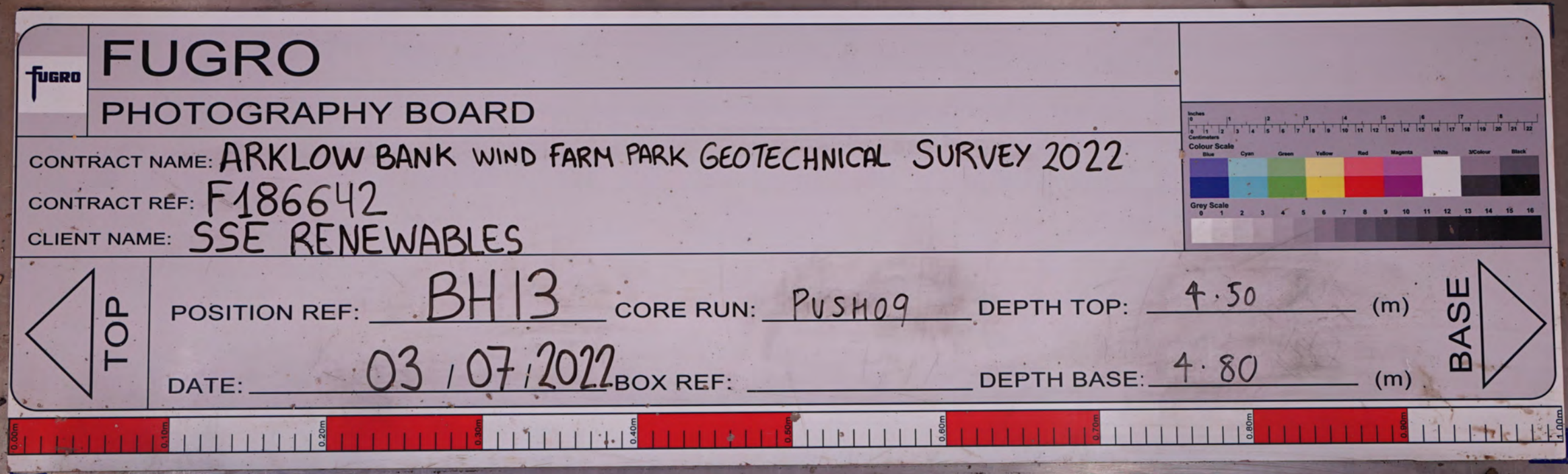
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH08
DEPTH TOP: 4.00 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.627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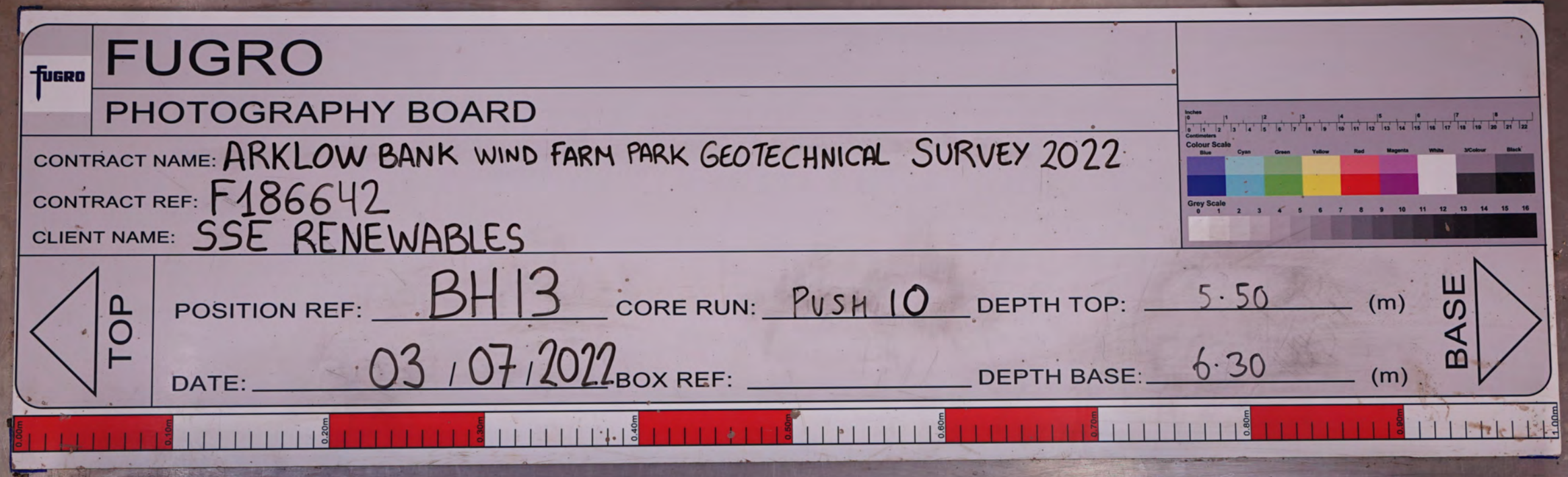
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH09
DEPTH TOP: 4.50 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 4.80 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.628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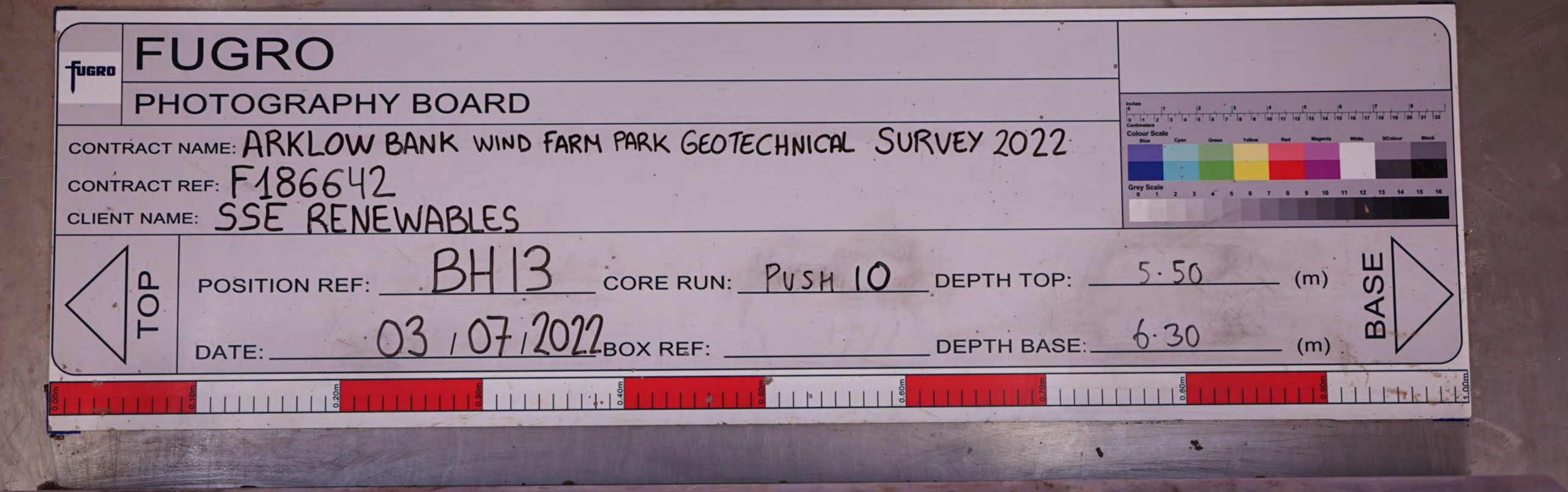
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 10
DEPTH TOP: 5.50 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 6.30 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.629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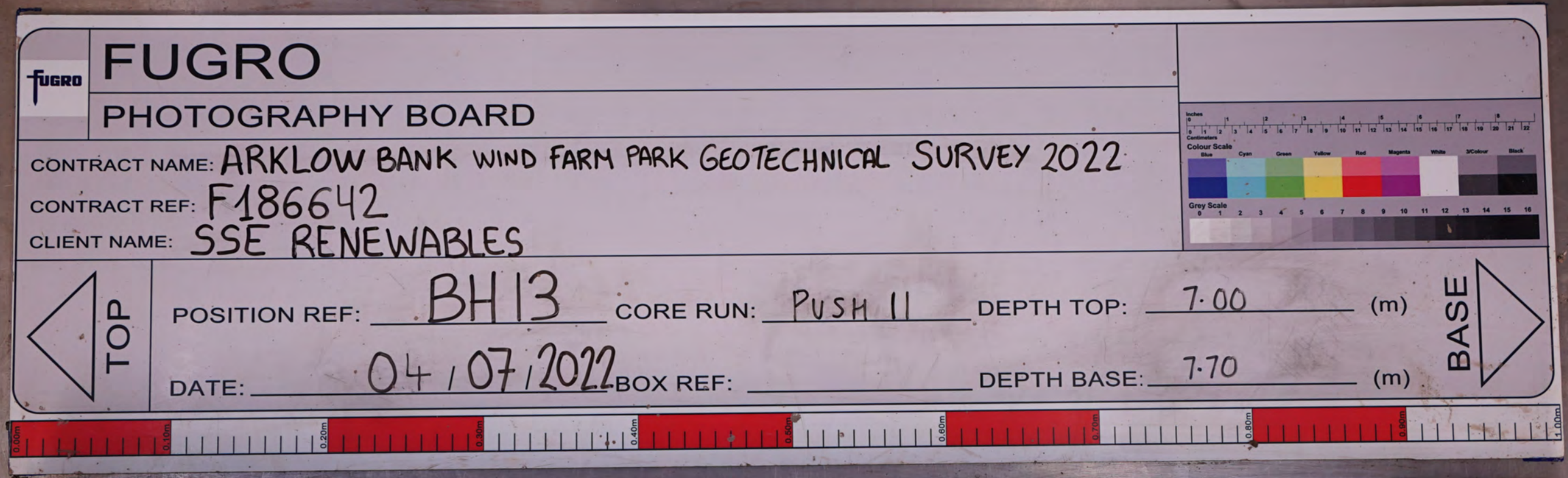
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 10
DEPTH TOP: 5.50 (m)
DATE: 03/07/2022
BOX REF:
DEPTH BASE: 6.30 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.630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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 11
DEPTH TOP: 7.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 7.70 (m)
BASE
Colour Scale
Grey Scale

Plate 4.631


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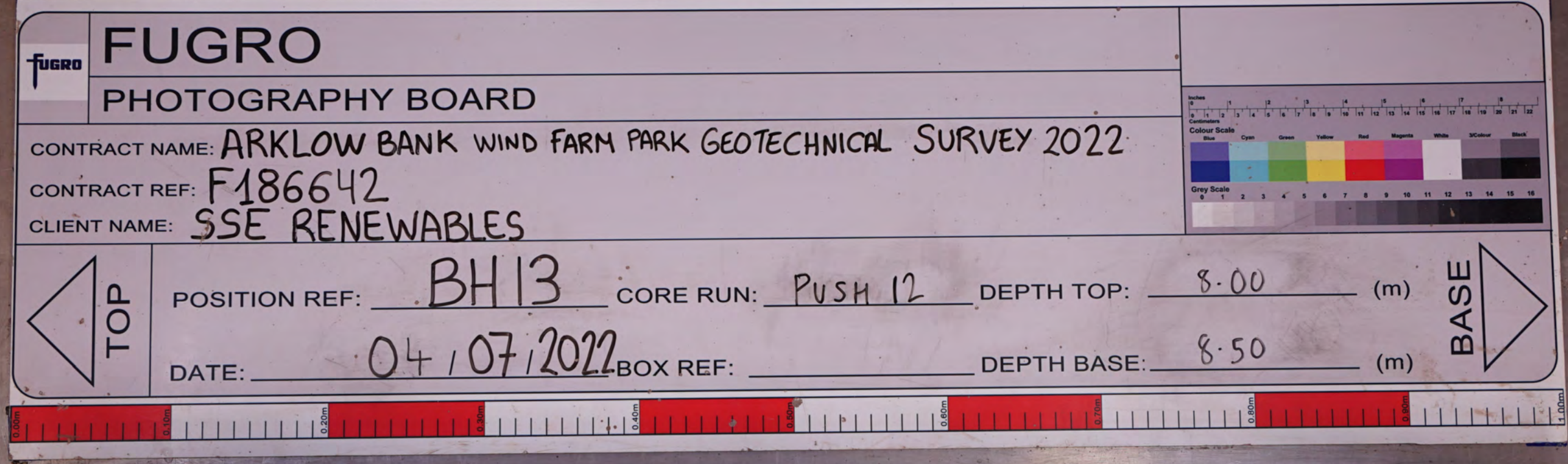
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 11
DEPTH TOP: 7.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 7.70 (m)
BASE
Colour Scale
Grey Scale

Plate 4.632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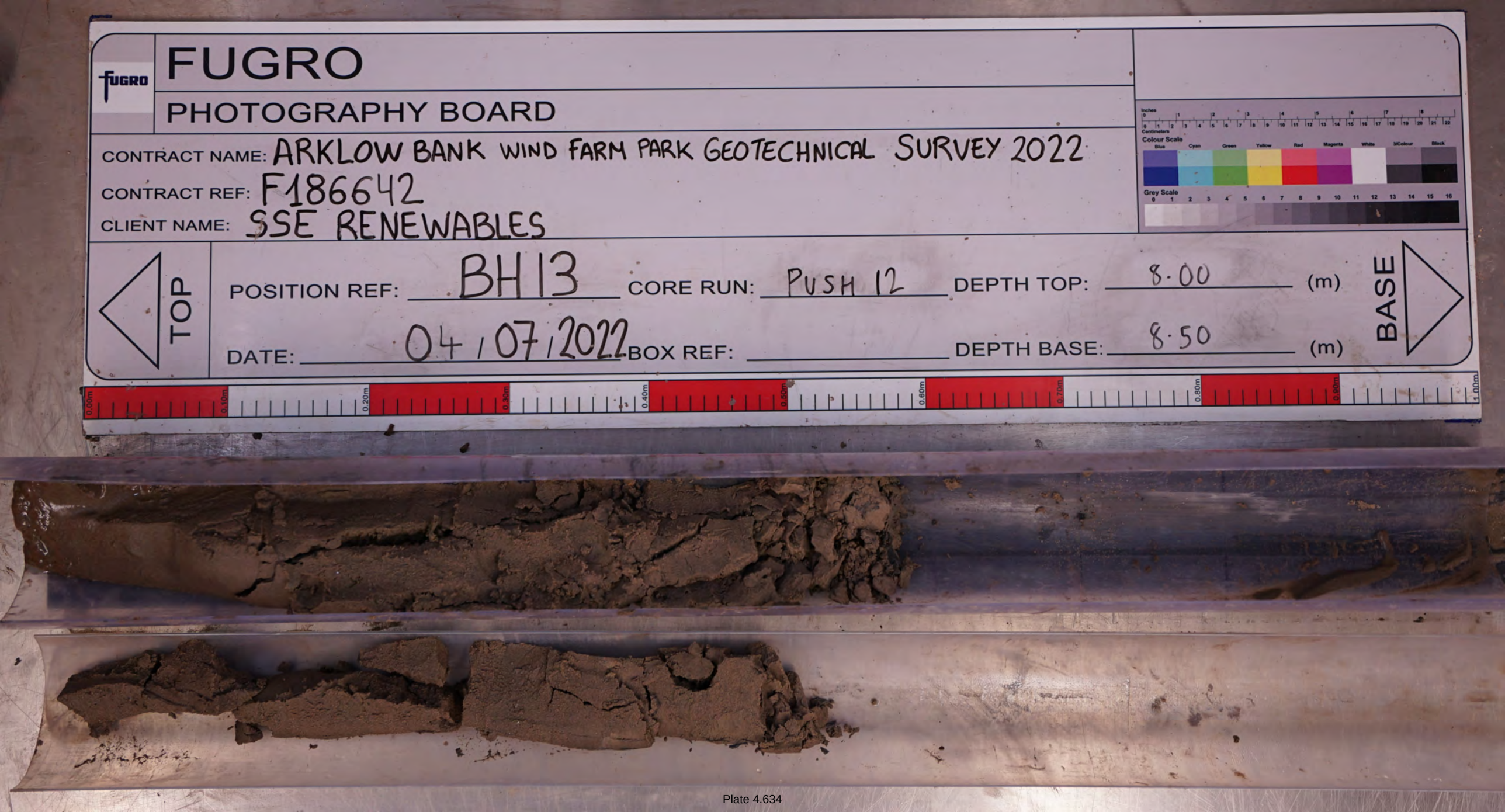
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 12
DEPTH TOP: 8.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 8.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.633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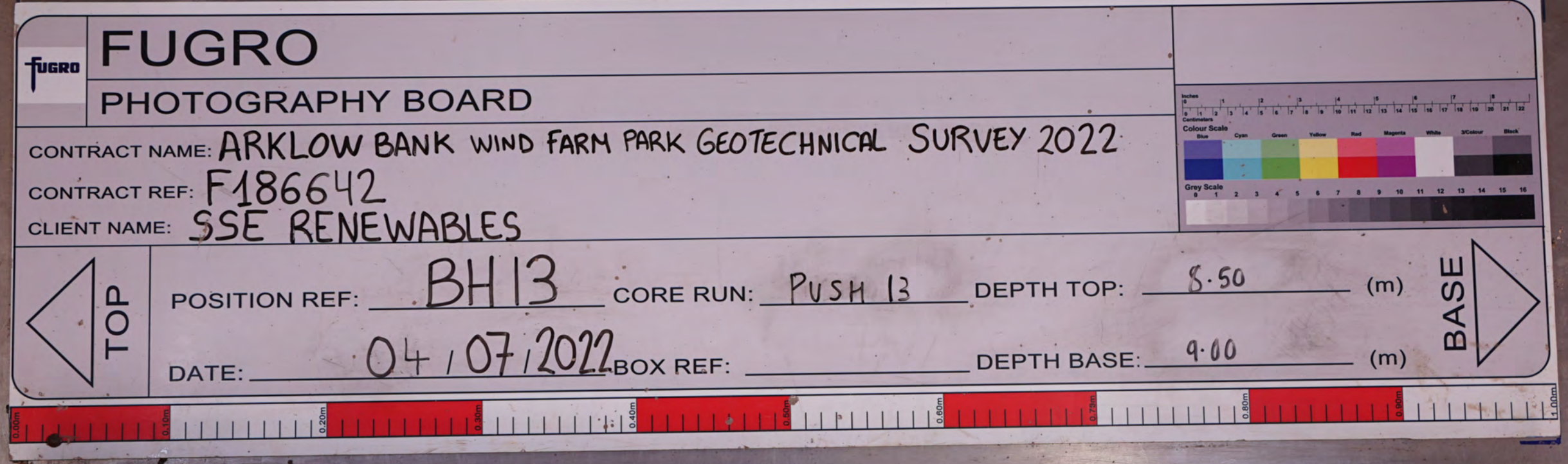
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 12
DEPTH TOP: 8.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 8.50 (m)
BASE

Plate 4.634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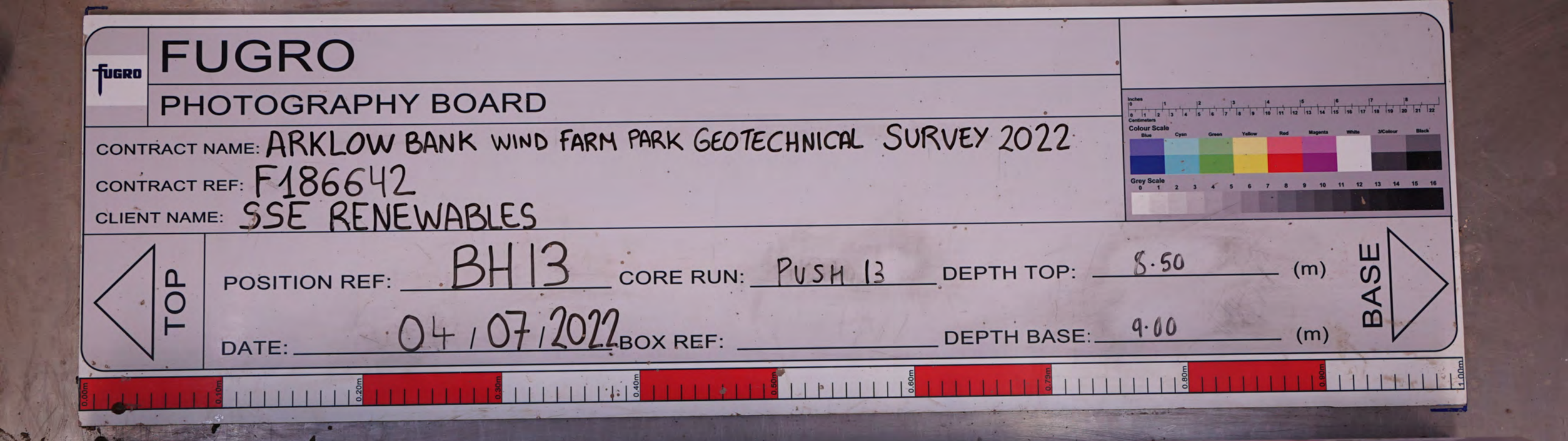
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 13
DEPTH TOP: 8.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 9.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.73m
0.80m
0.90m
1.00m

Plate 4.635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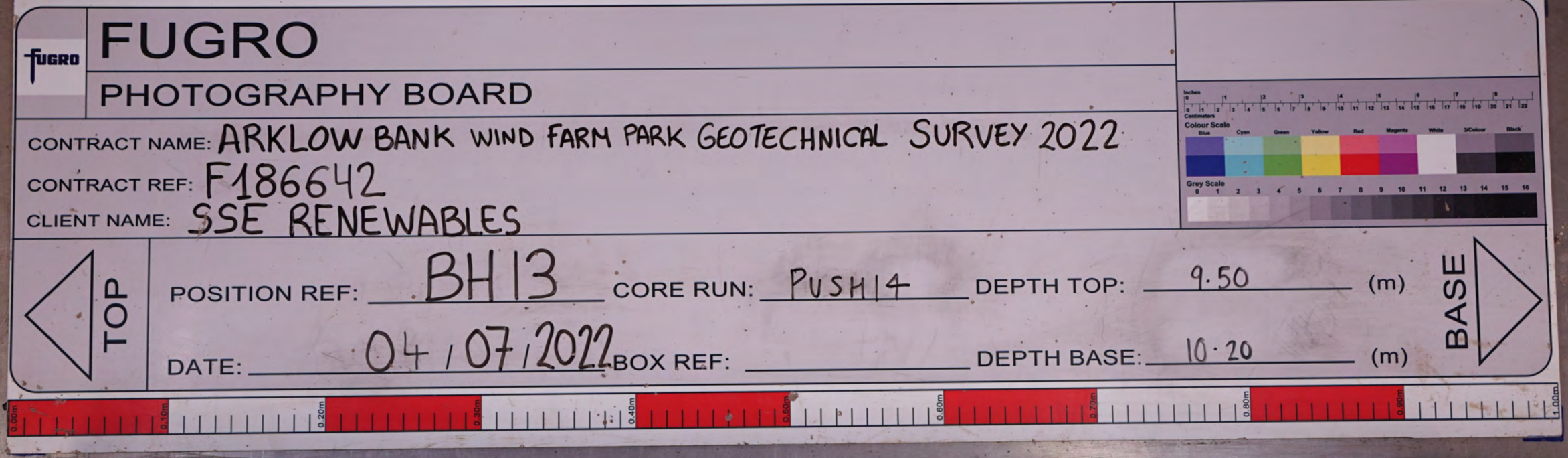
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 13
DEPTH TOP: 8.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 9.00 (m)
BASE

Plate 4.636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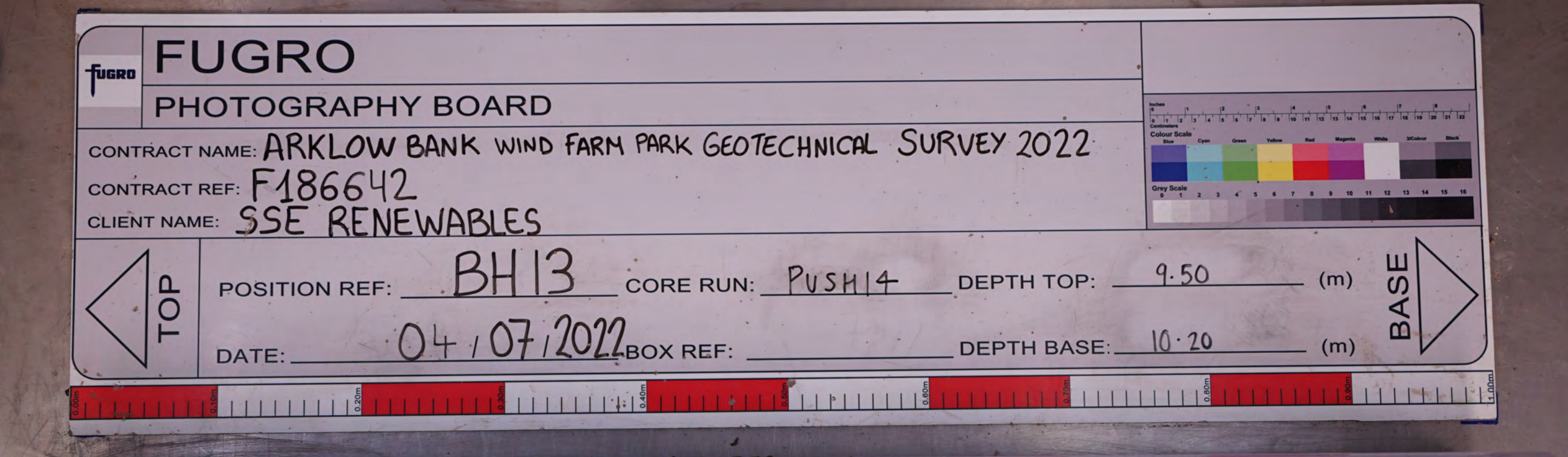
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH14
DEPTH TOP: 9.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 10.20 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.637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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH14
DEPTH TOP: 9.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 10.20 (m)
BASE
Colour Scale
Grey Scale

Plate 4.638

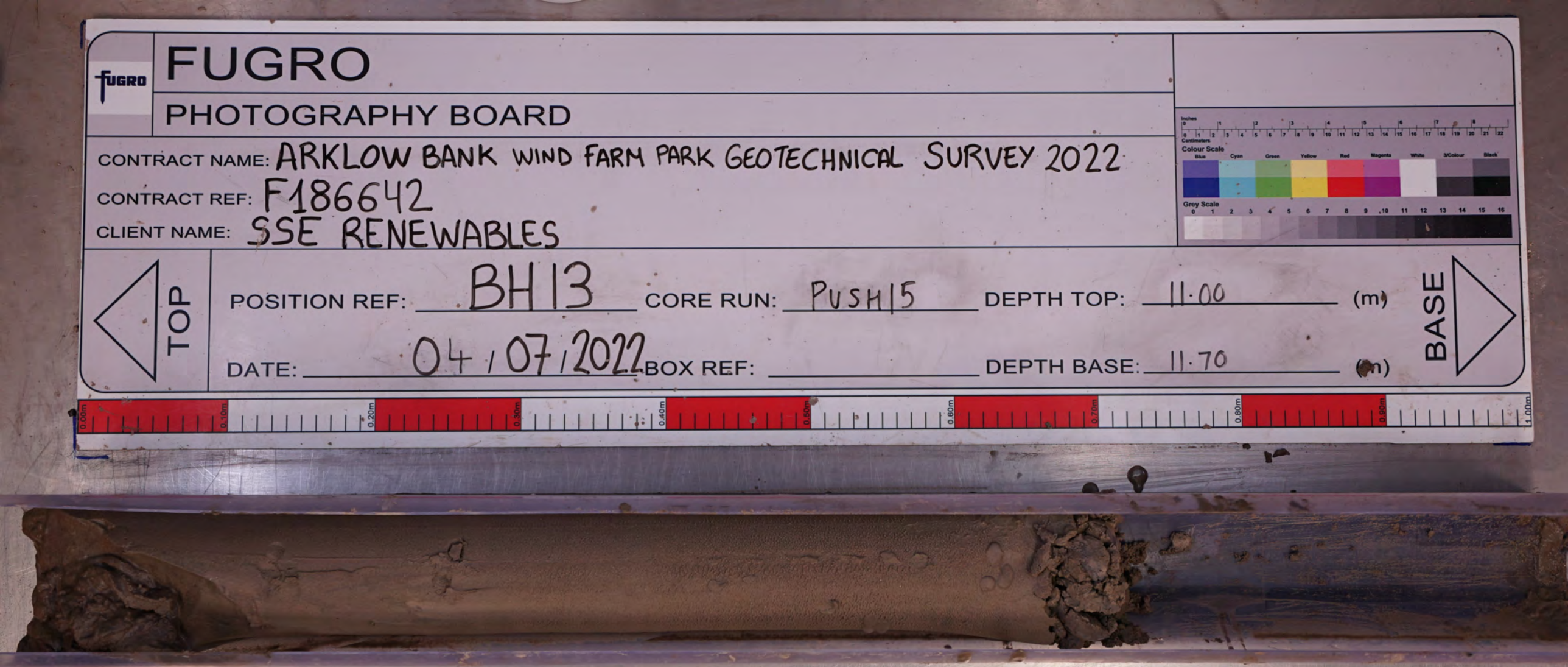
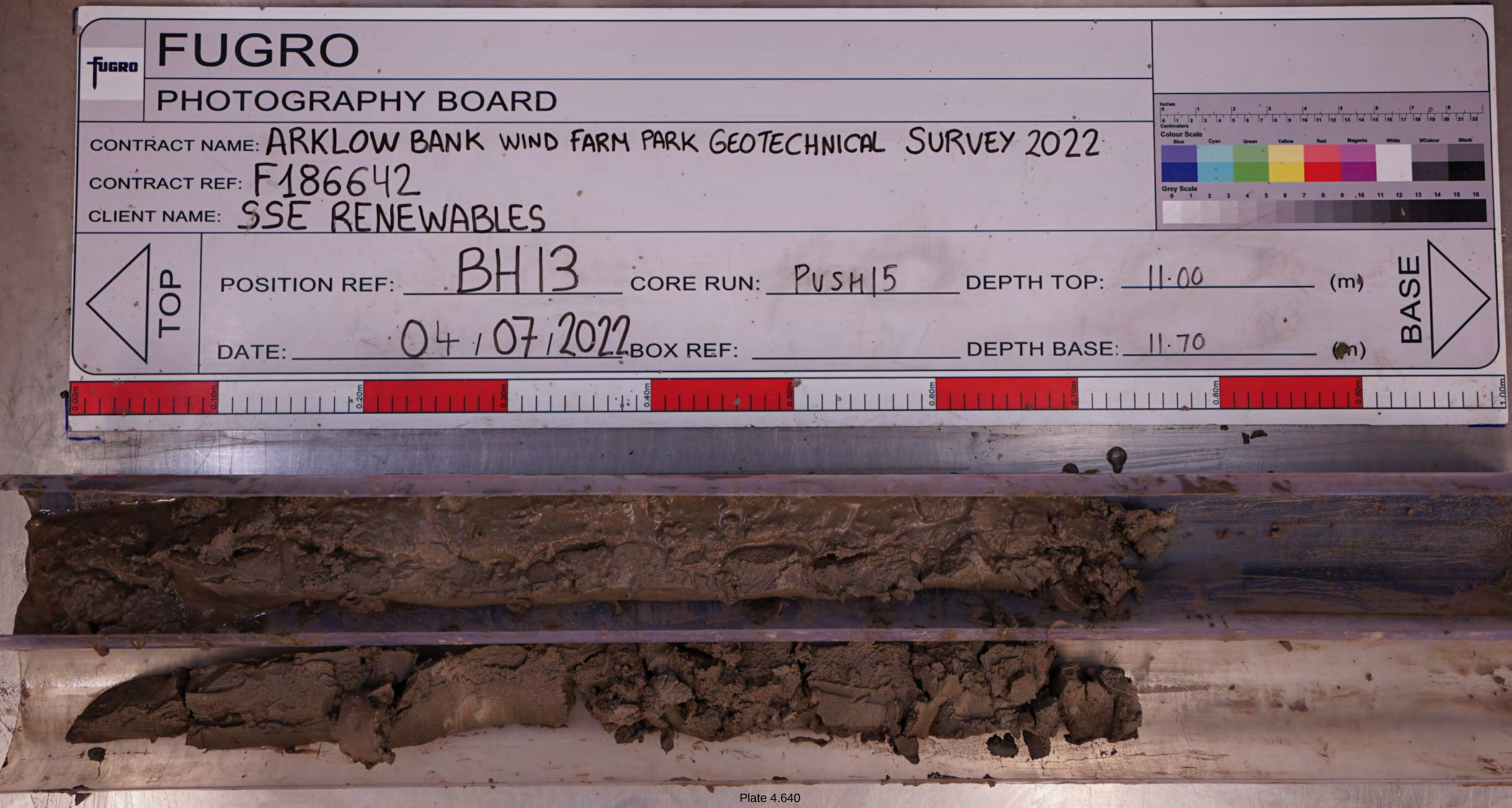

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH15
DEPTH TOP: 11.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 11.70 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.639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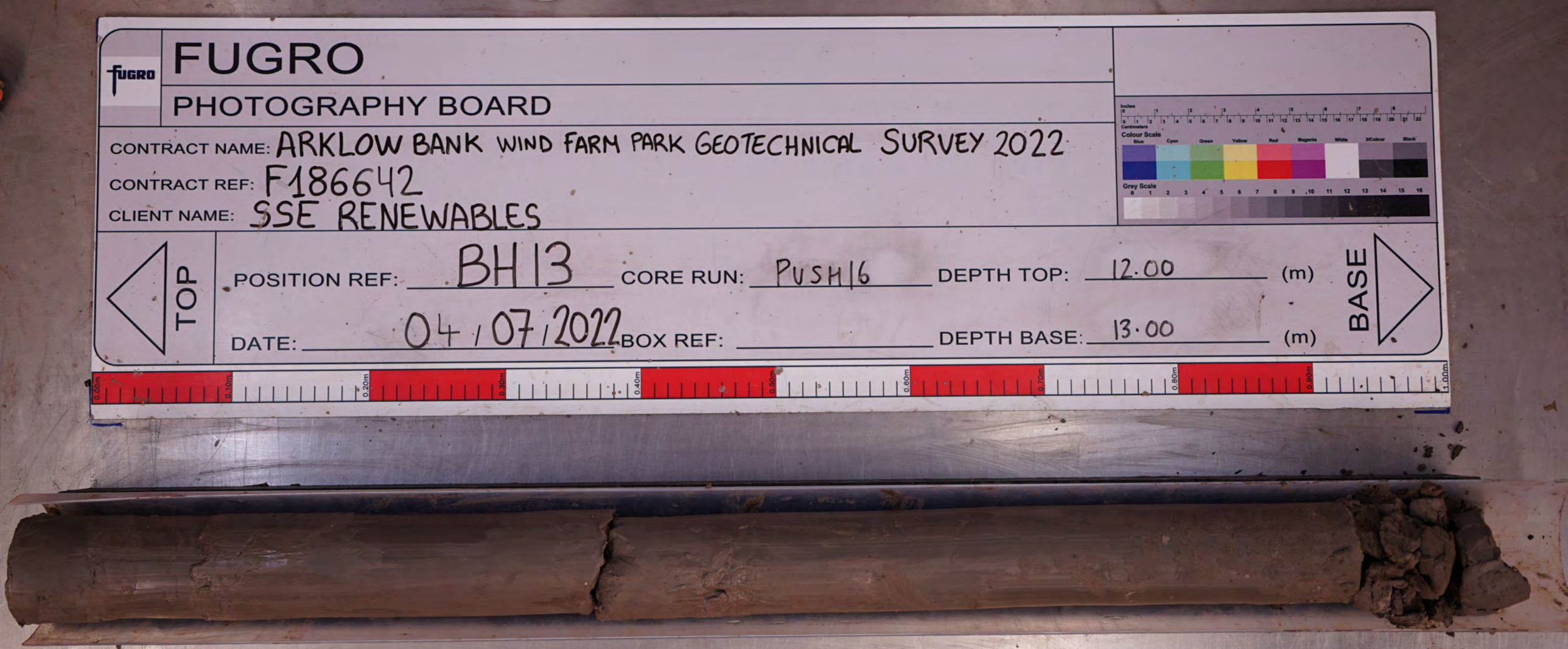
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH15
DEPTH TOP: 11.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 11.70 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.640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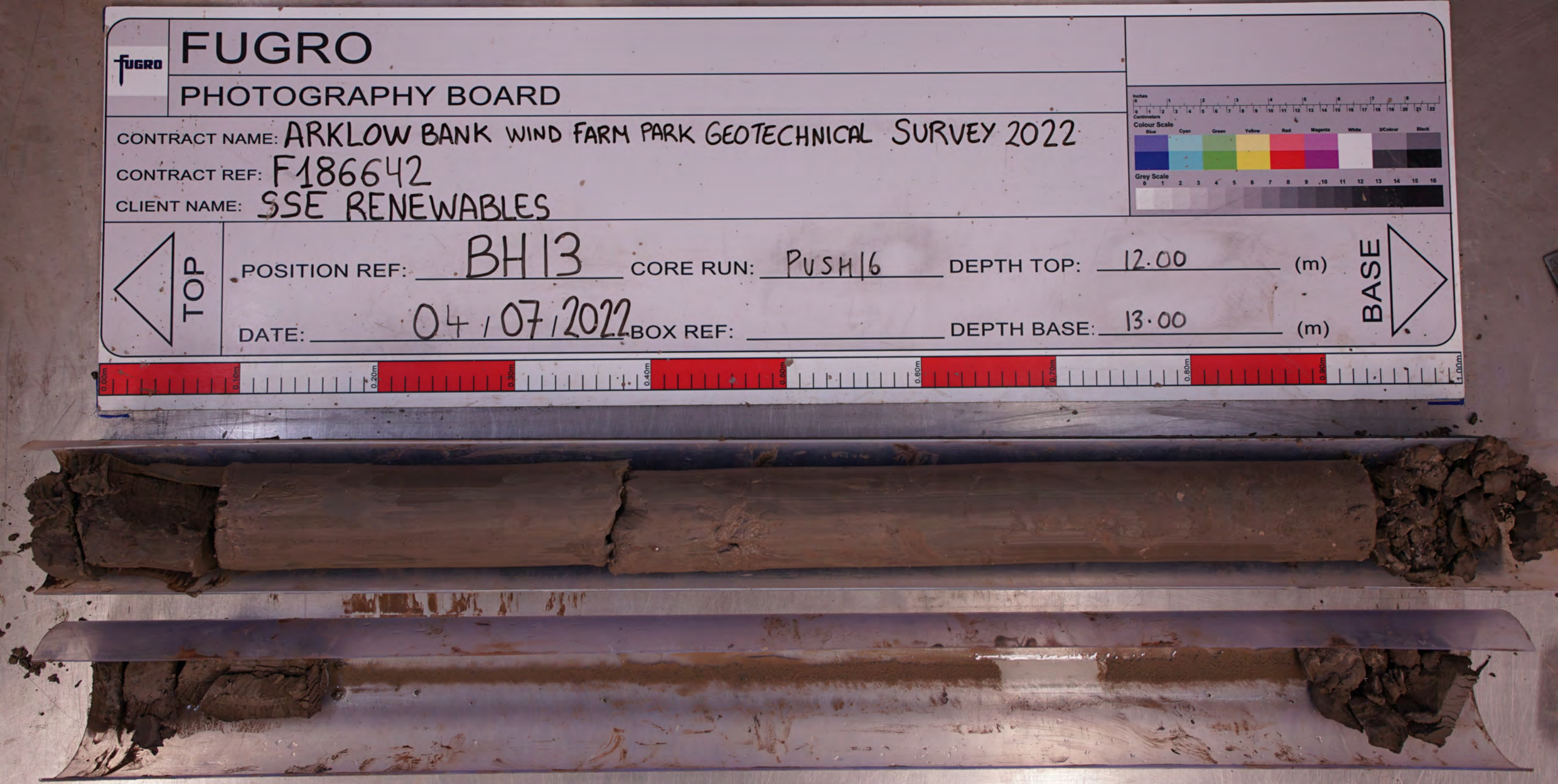
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH16
DEPTH TOP: 12.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 13.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.641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CONTRACT REF: F186642
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TOP
POSITION REF: BH13
CORE RUN: PUSH16
DEPTH TOP: 12.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 13.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.642


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH17
DEPTH TOP: 13.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 13.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.643

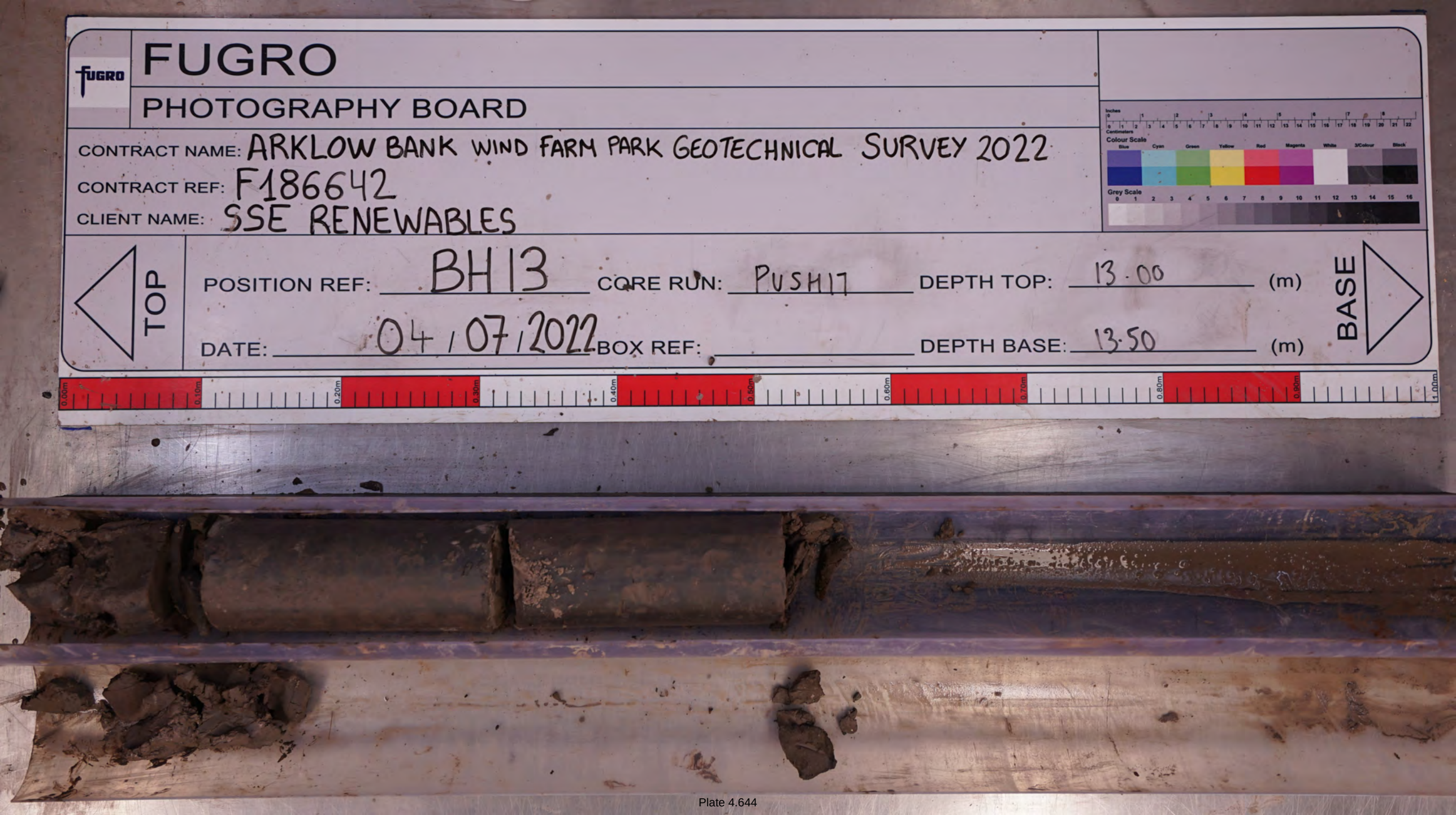

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH17
DEPTH TOP: 13.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 13.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.644

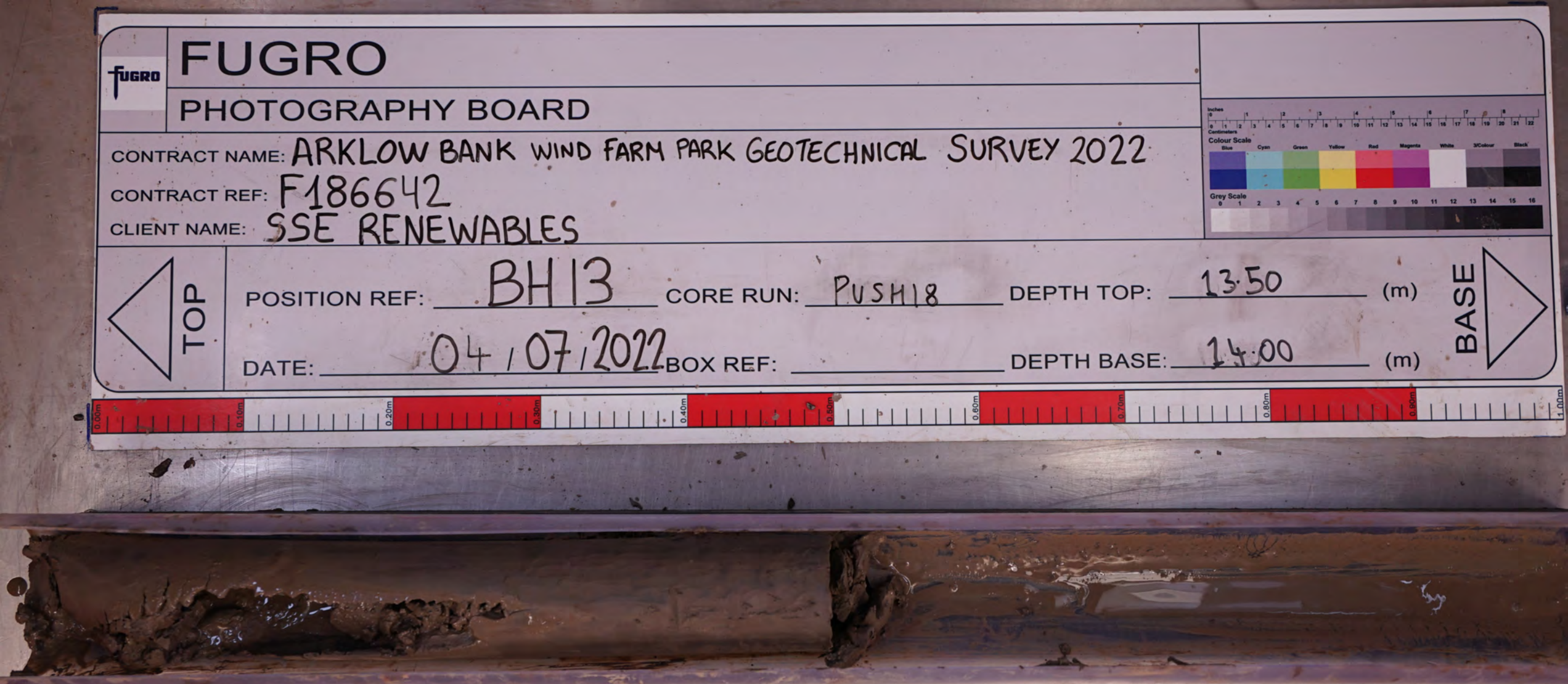

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH18
DEPTH TOP: 13.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.645

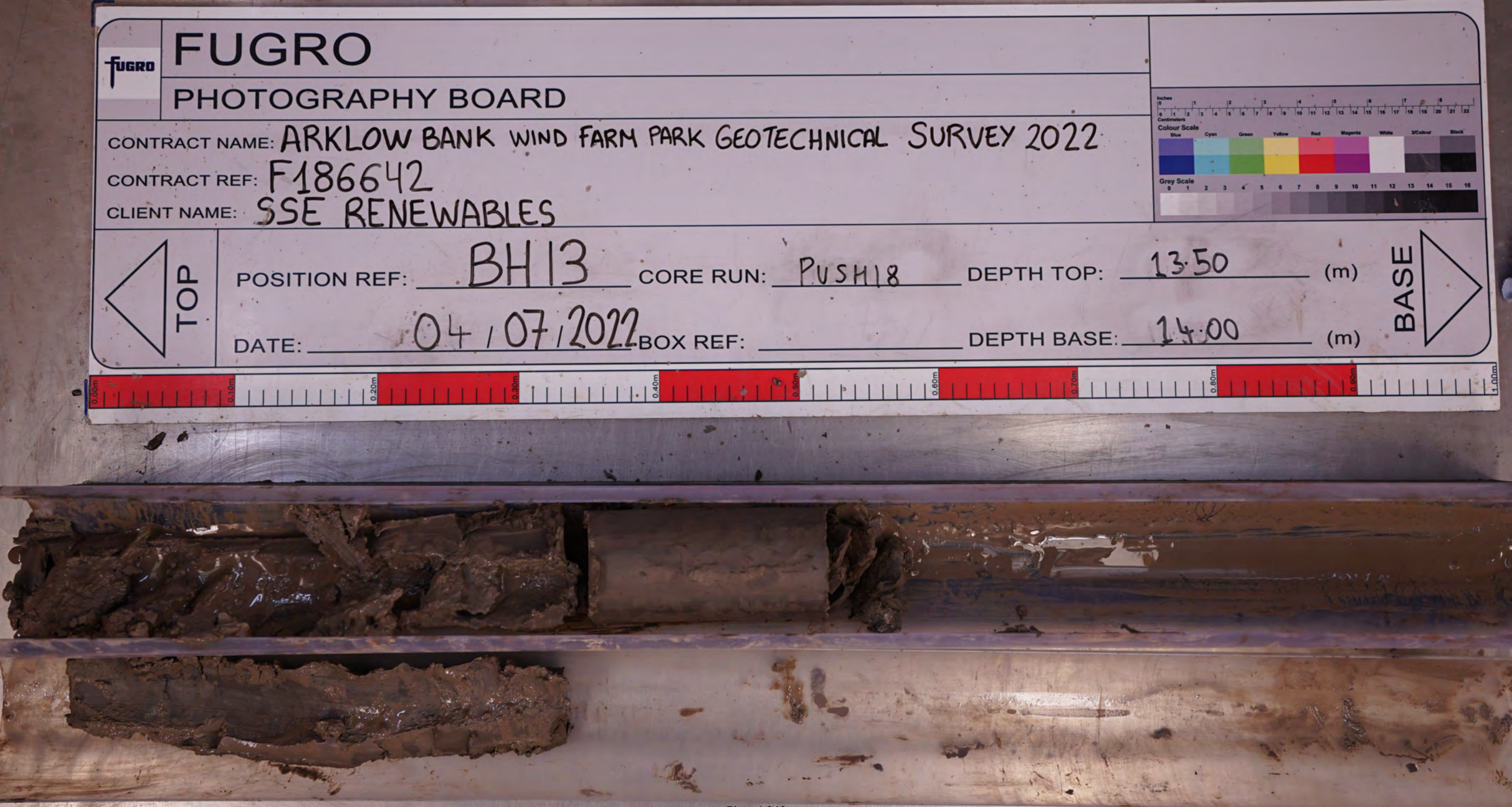

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH18
DEPTH TOP: 13.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.646

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

CORE RUN: CR1

DEPTH TOP: 14.00 (m)

DATE: 04 / 07 /2022

BOX REF: 1

DEPTH BASE: 14.50 (m)

BASE

CUTTINGS

CR1

14.00m

14.50m



Plate 4.647

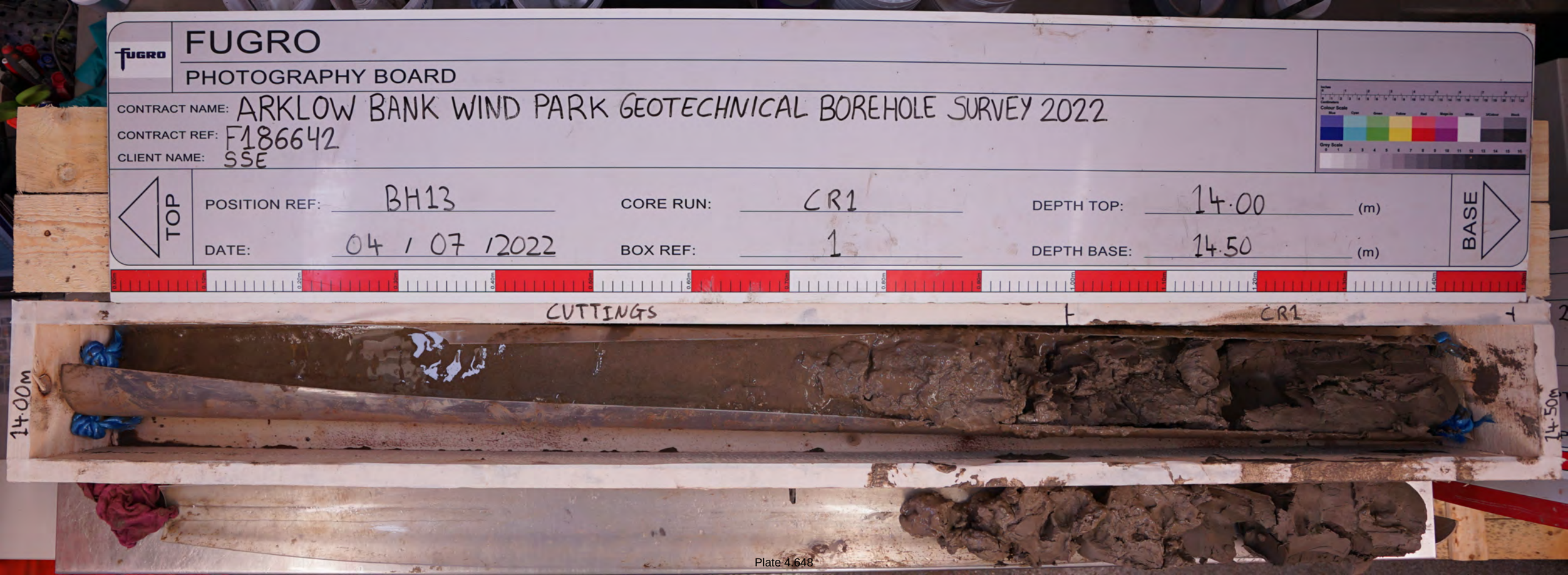

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR1
DEPTH TOP: 14.00 (m)
DATE: 04 / 07 /2022
BOX REF: 1
DEPTH BASE: 14.50 (m)
BASE
CUTTINGS
CR1
14.00m
14.50m

Plate 4.648

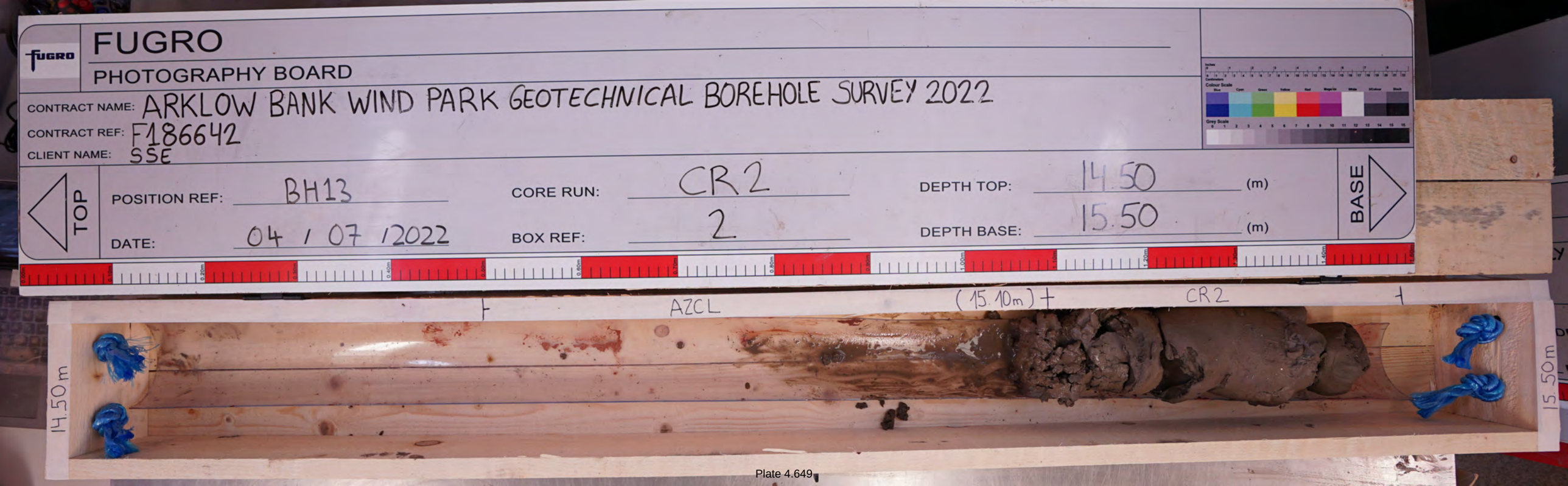

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
DATE: 04 / 07 /2022
CORE RUN: CR2
BOX REF: 2
DEPTH TOP: 14.50 (m)
DEPTH BASE: 15.50 (m)
BASE
AZCL
(15.10m)
CR2
14.50m
15.50m

Plate 4.649


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR2
DEPTH TOP: 14.50 (m)
DATE: 04 / 07 / 2022
BOX REF: 2
DEPTH BASE: 15.50 (m)
BASE
AZCL
(15.10m)
CR2
14.50m
15.50m

Plate 4.650

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: PUSH19 DEPTH TOP: 15.50 (m)

DATE: 04/07/2022 BOX REF: DEPTH BASE: 16.00 (m)

BASE



Plate 4.651

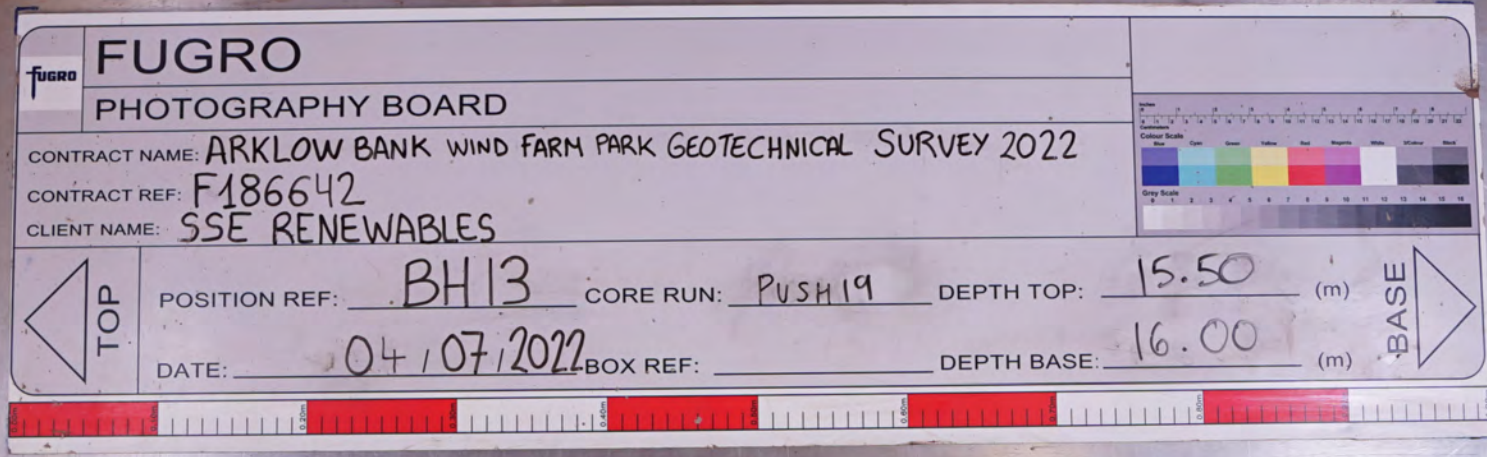

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 19
DEPTH TOP: 15.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 16.00 (m)
BASE

Plate 4.652

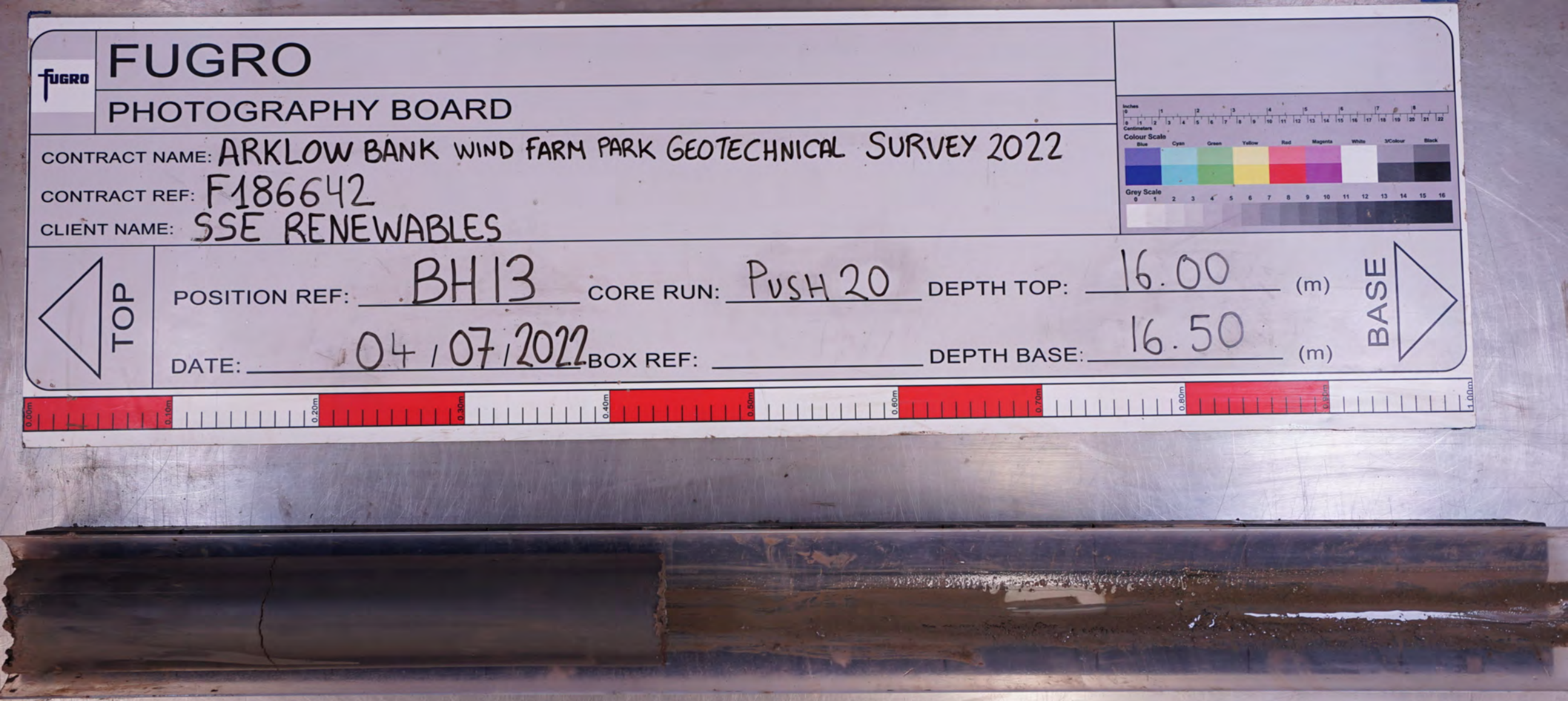

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 20
DEPTH TOP: 16.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 16.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.653

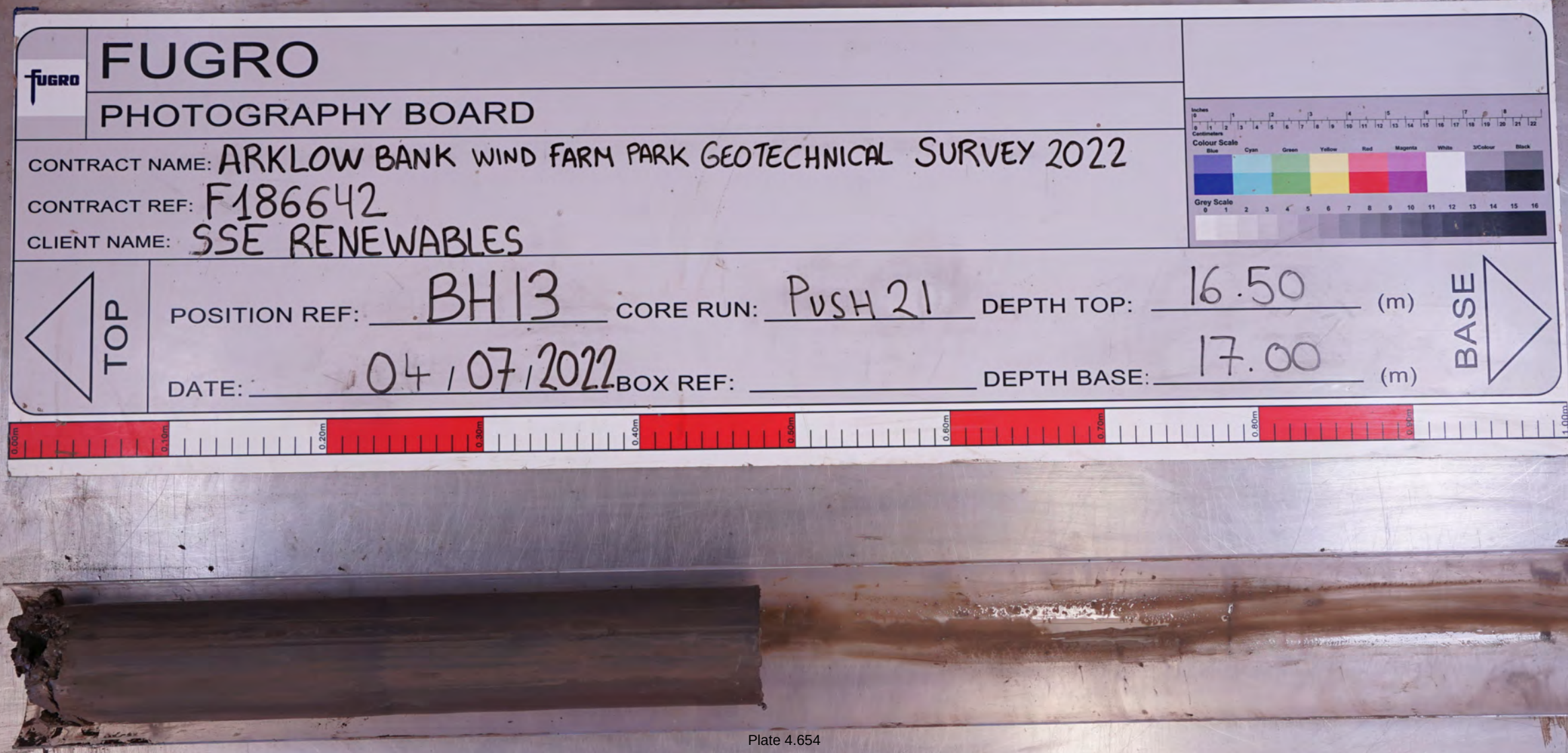

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 21
DEPTH TOP: 16.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 17.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.654

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: PUSH 21 DEPTH TOP: 16.50 (m)

DATE: 04/07/2022 BOX REF: _____ DEPTH BASE: 17.00 (m)

BASE



Plate 4.655

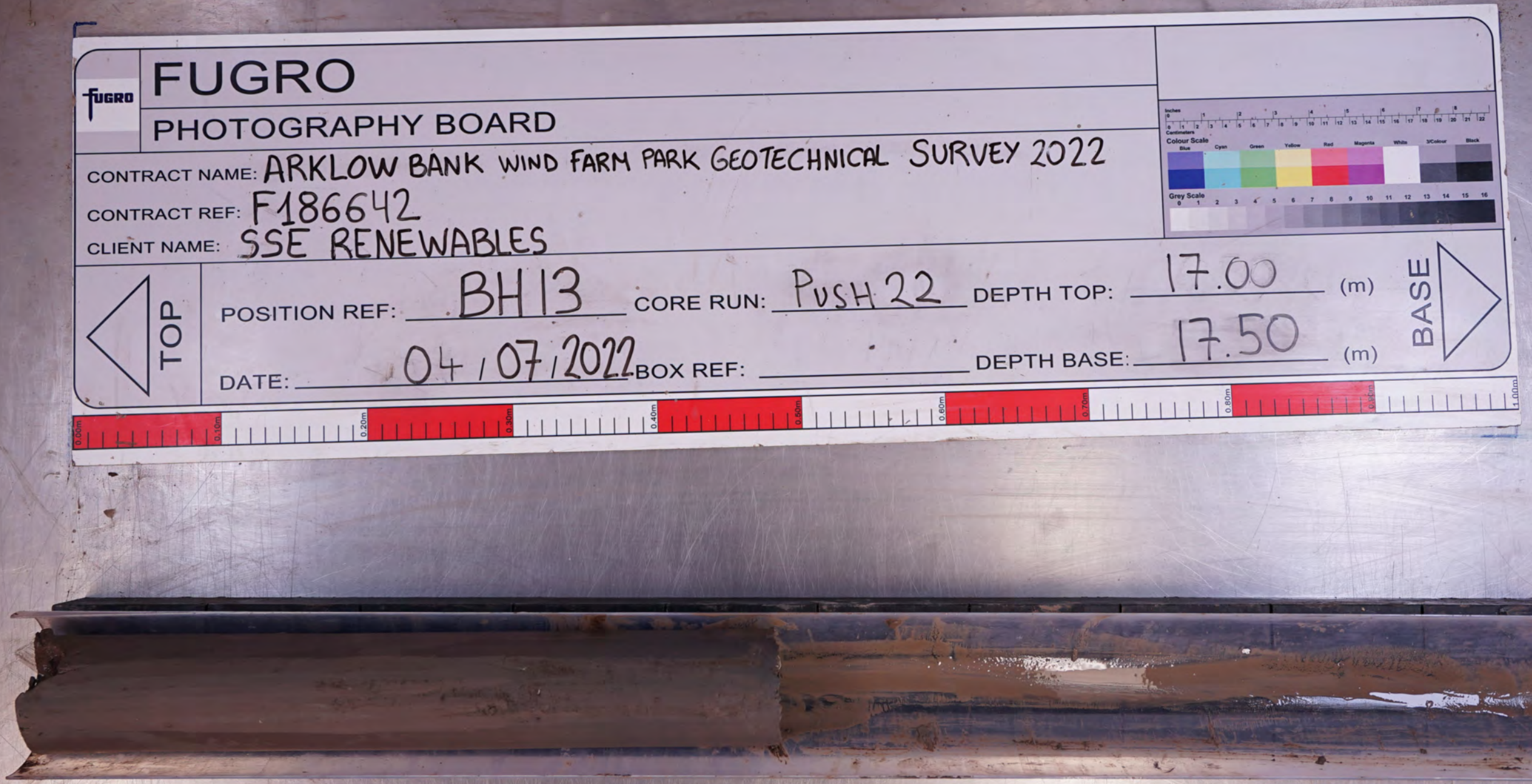

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 22
DEPTH TOP: 17.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.656

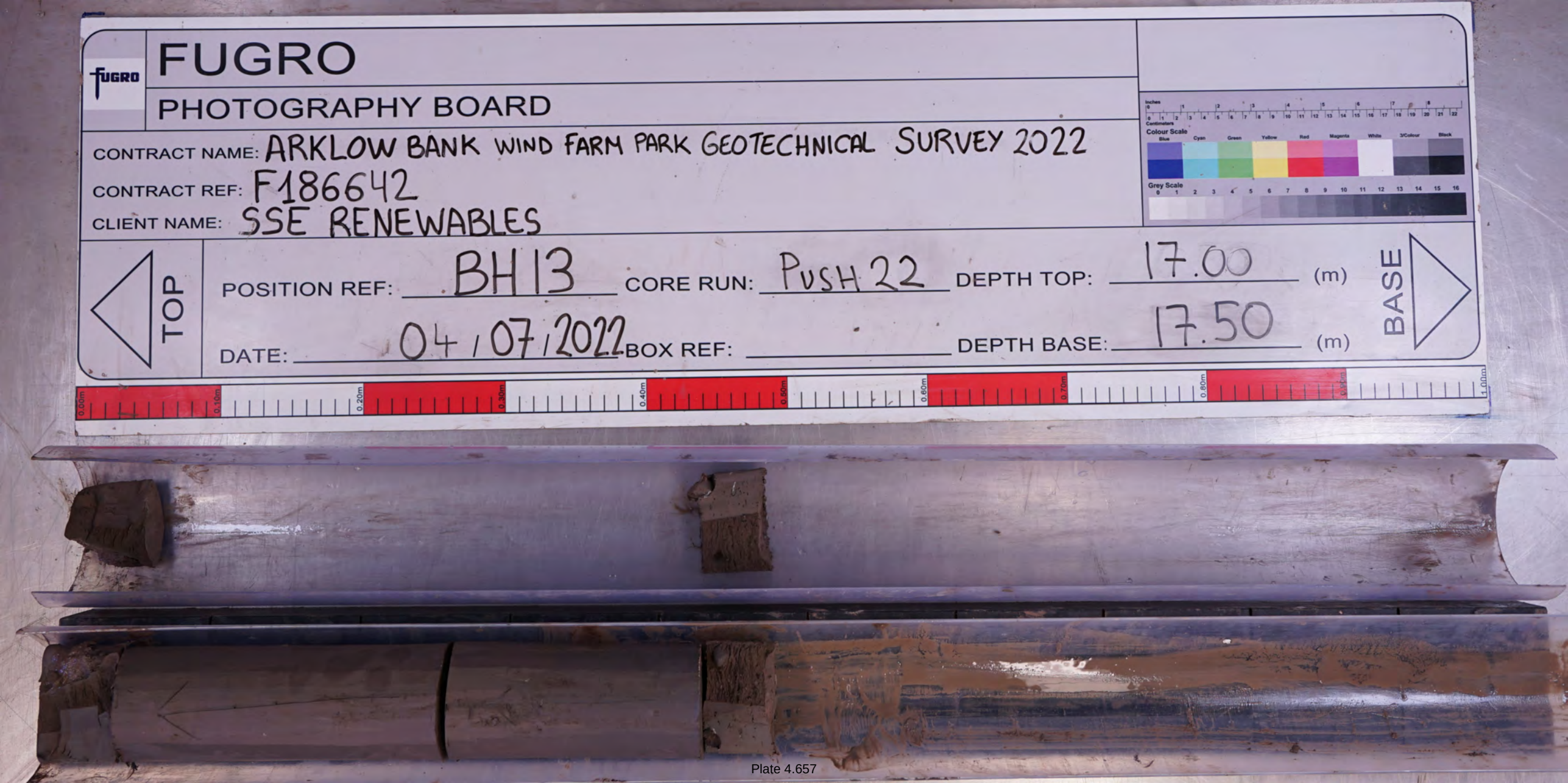

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 22
DEPTH TOP: 17.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.657

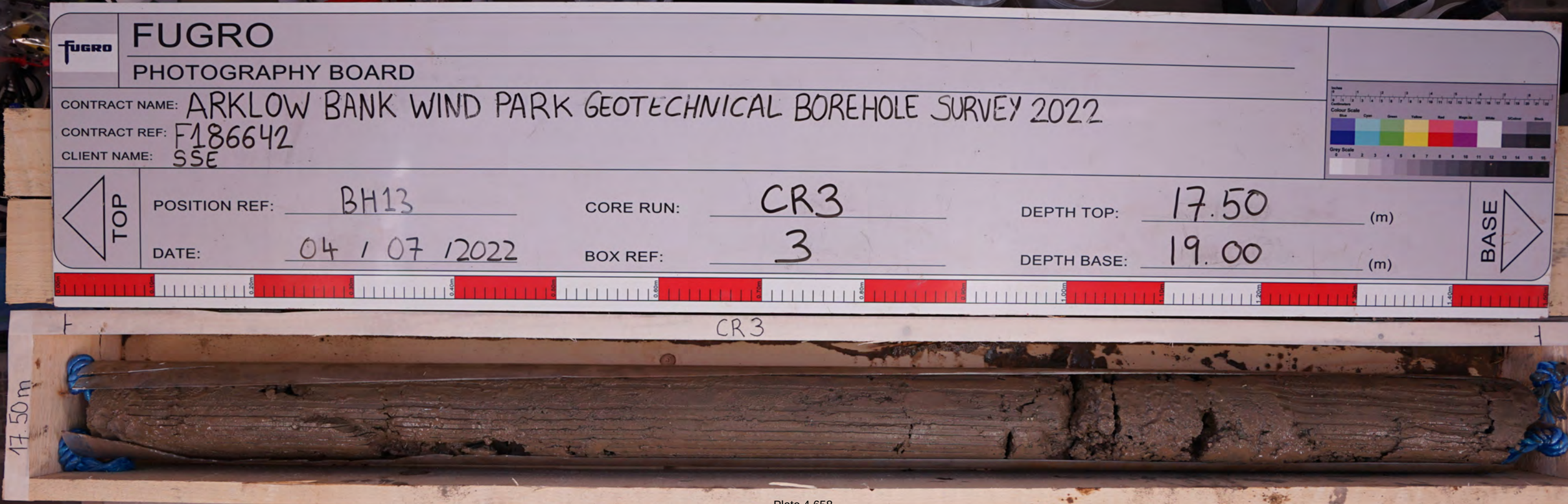

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR3
DEPTH TOP: 17.50 (m)
DATE: 04 / 07 /2022
BOX REF: 3
DEPTH BASE: 19.00 (m)
BASE
CR3
17.50m
19.00m

Plate 4.658


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR3
DEPTH TOP: 17.50 (m)
DATE: 04 / 07 /2022
BOX REF: 3
DEPTH BASE: 19.00 (m)
BASE
CR3
17.50m
19.00m

Plate 4.659

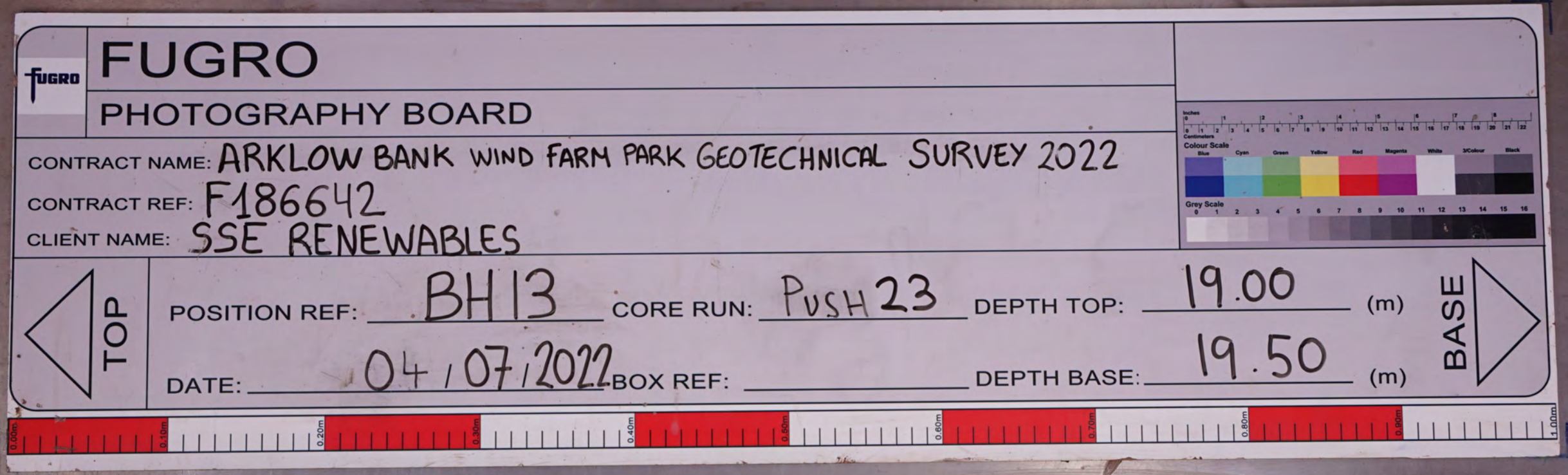

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 23
DEPTH TOP: 19.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 19.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.660

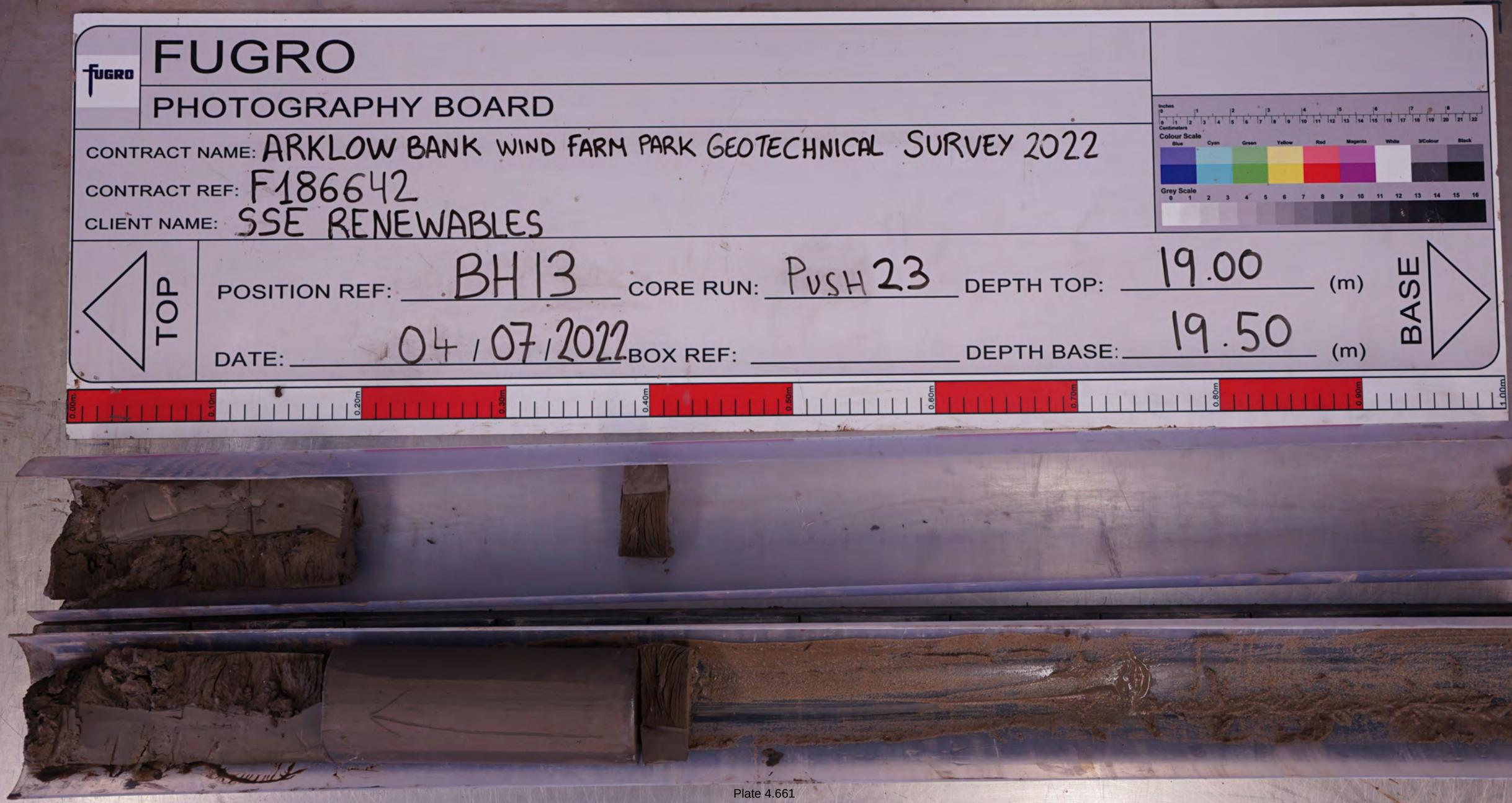

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 23
DEPTH TOP: 19.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 19.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.661

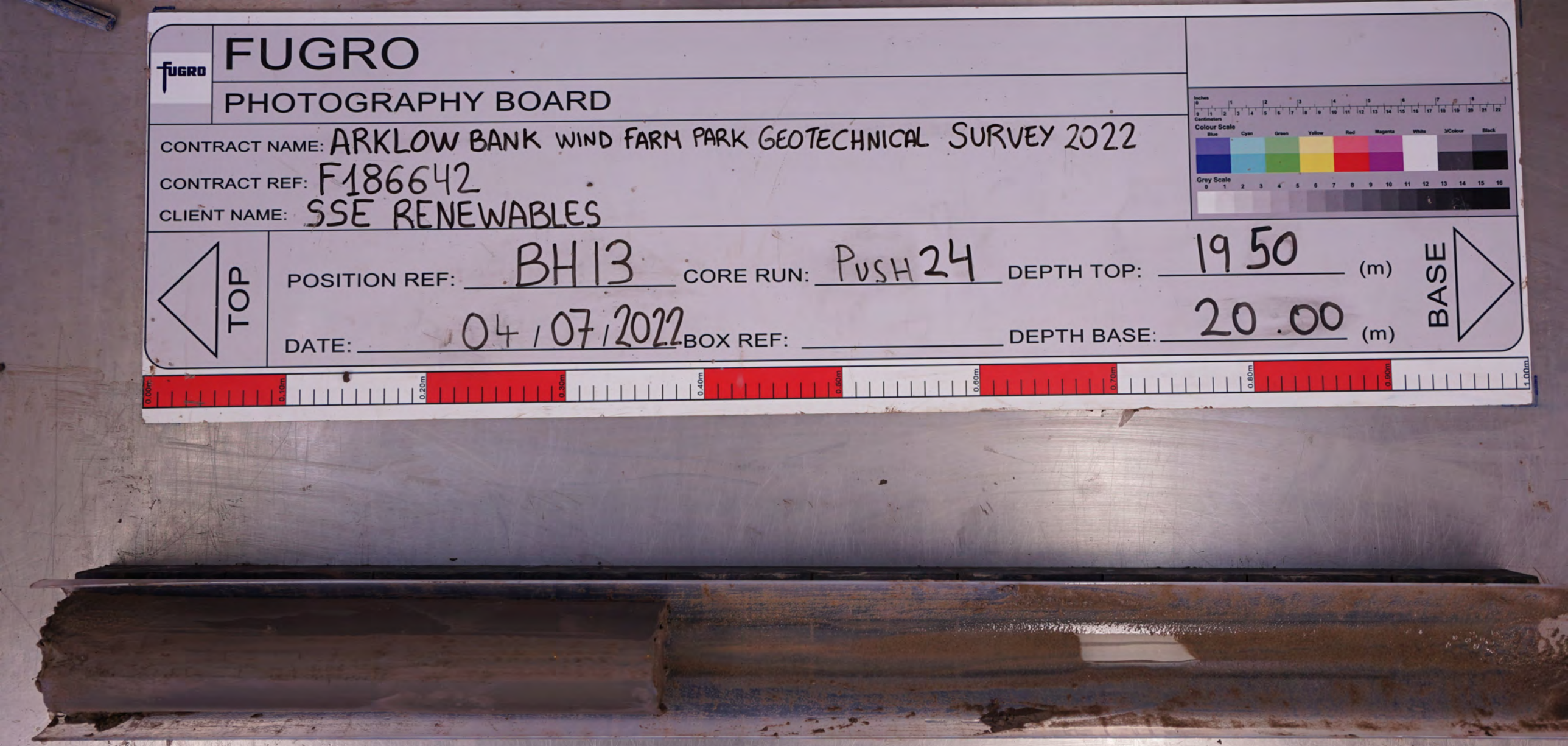

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 24
DEPTH TOP: 19.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.662

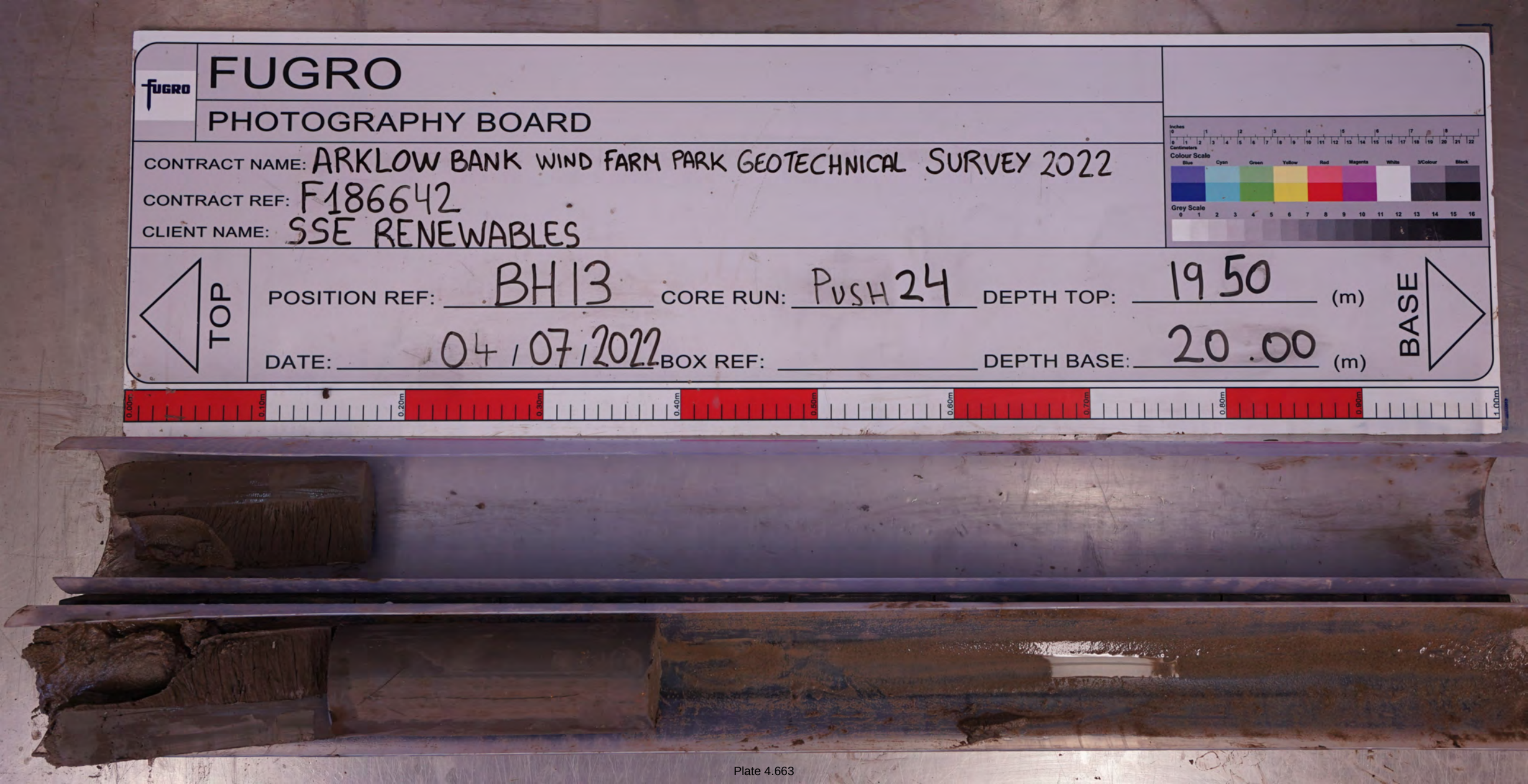

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 24
DEPTH TOP: 19.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.663

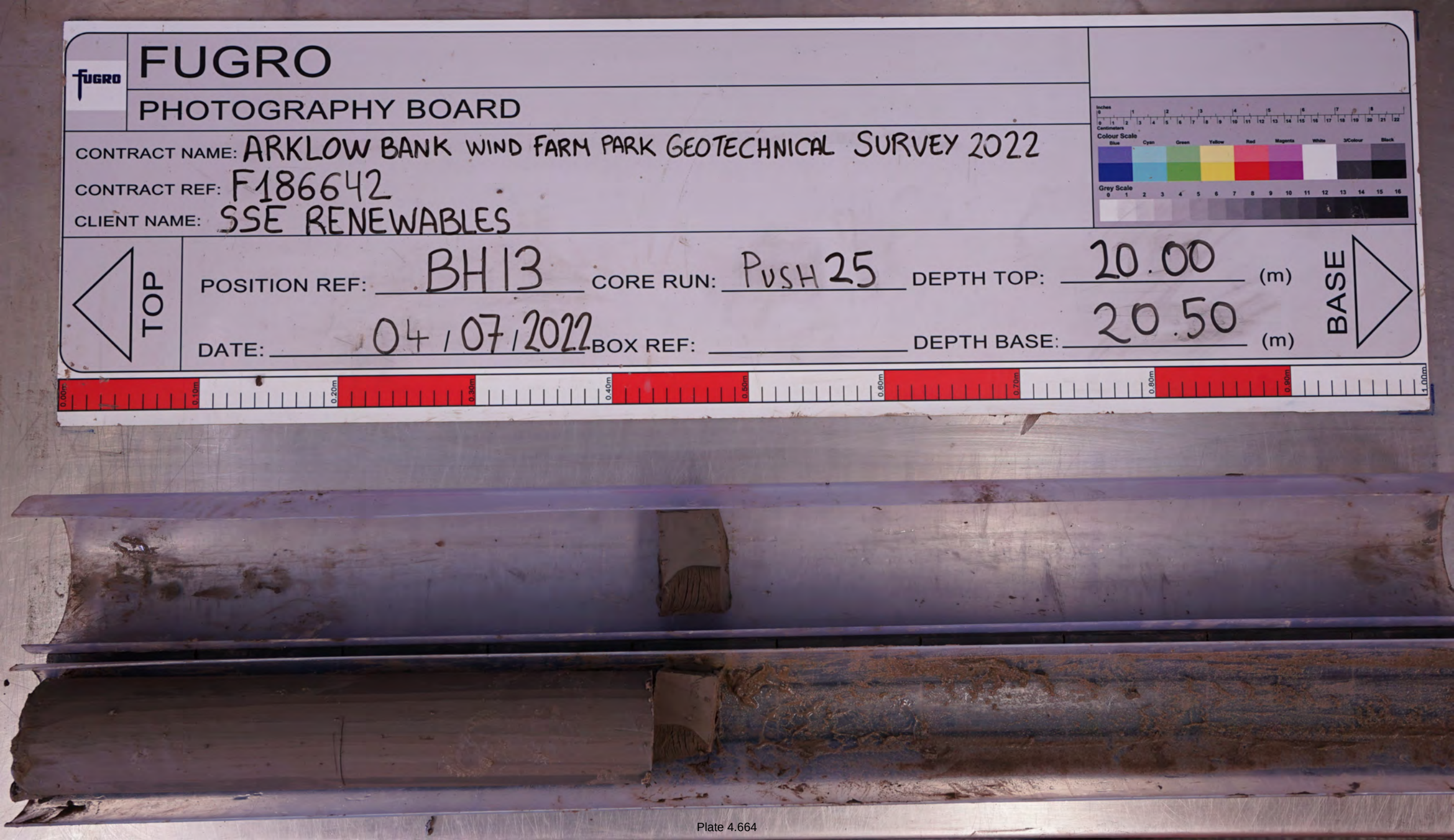

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 25
DEPTH TOP: 20.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 20.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.664

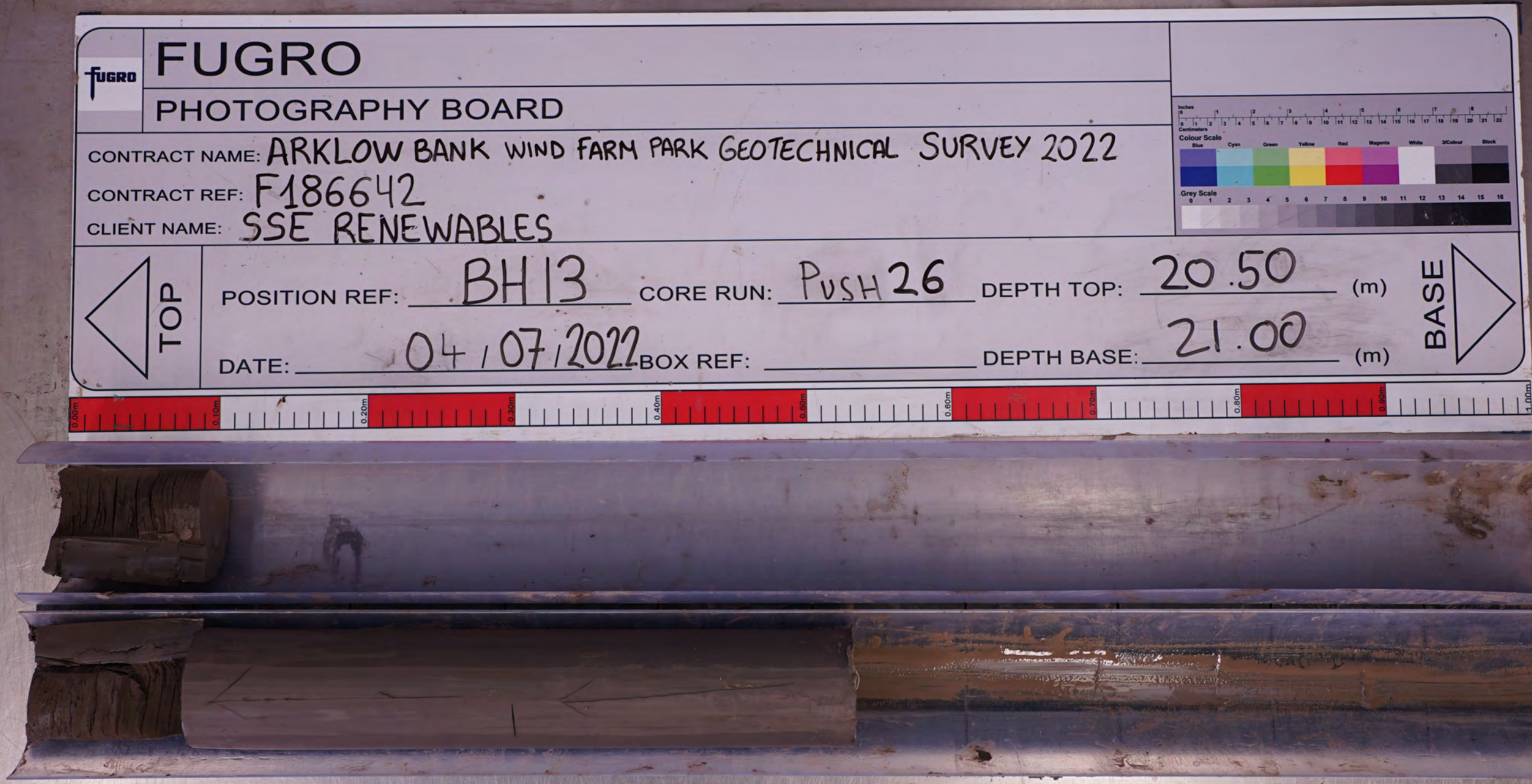

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 26
DEPTH TOP: 20.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 21.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.665

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH13 CORE RUN: PUSH 27 DEPTH TOP: 21.00 (m)

DATE: 04/07/2022 BOX REF: DEPTH BASE: 21.60 (m)

BASE



Plate 4.666

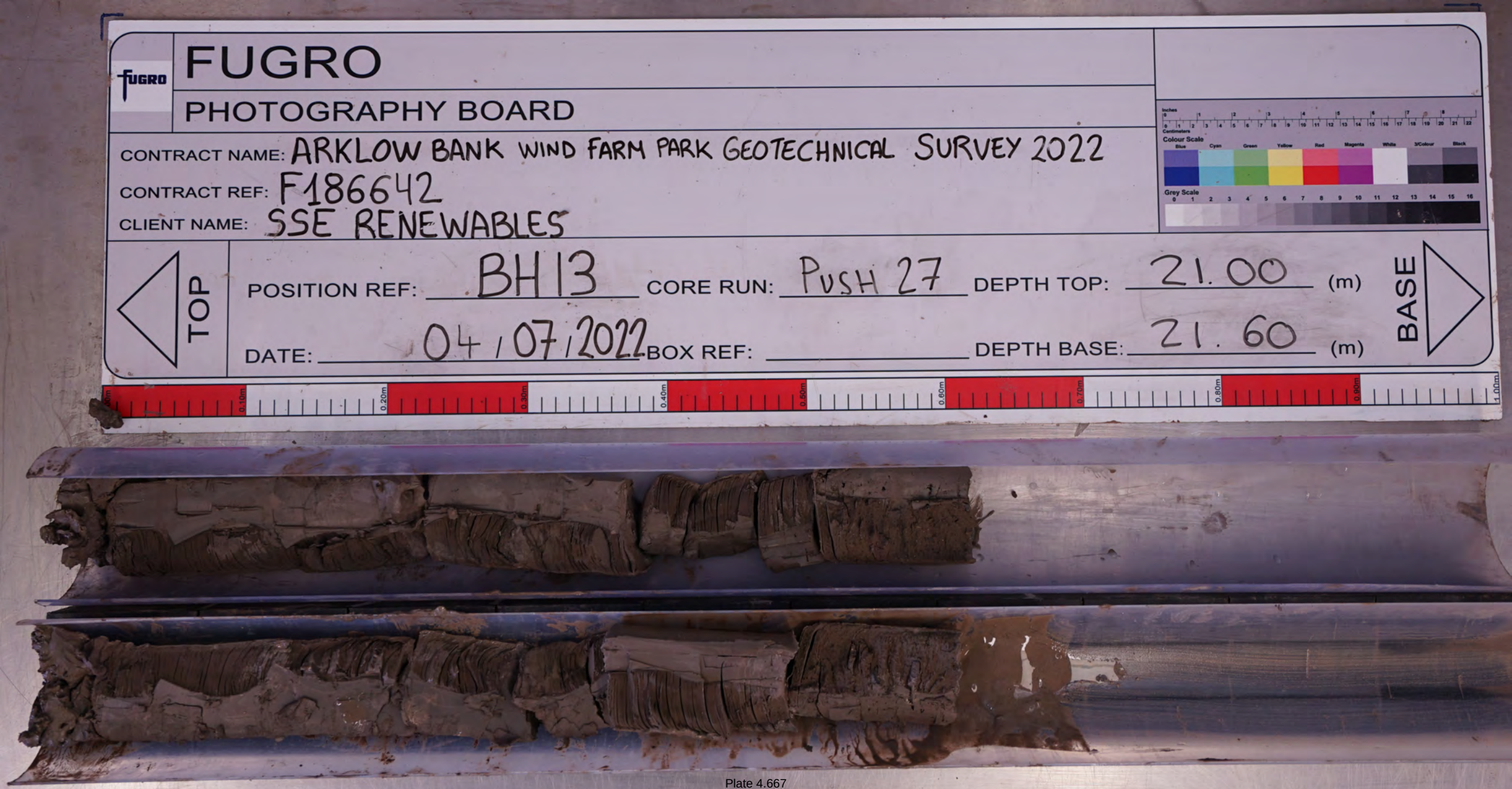

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 27
DEPTH TOP: 21.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 21.60 (m)
BASE

Plate 4.667

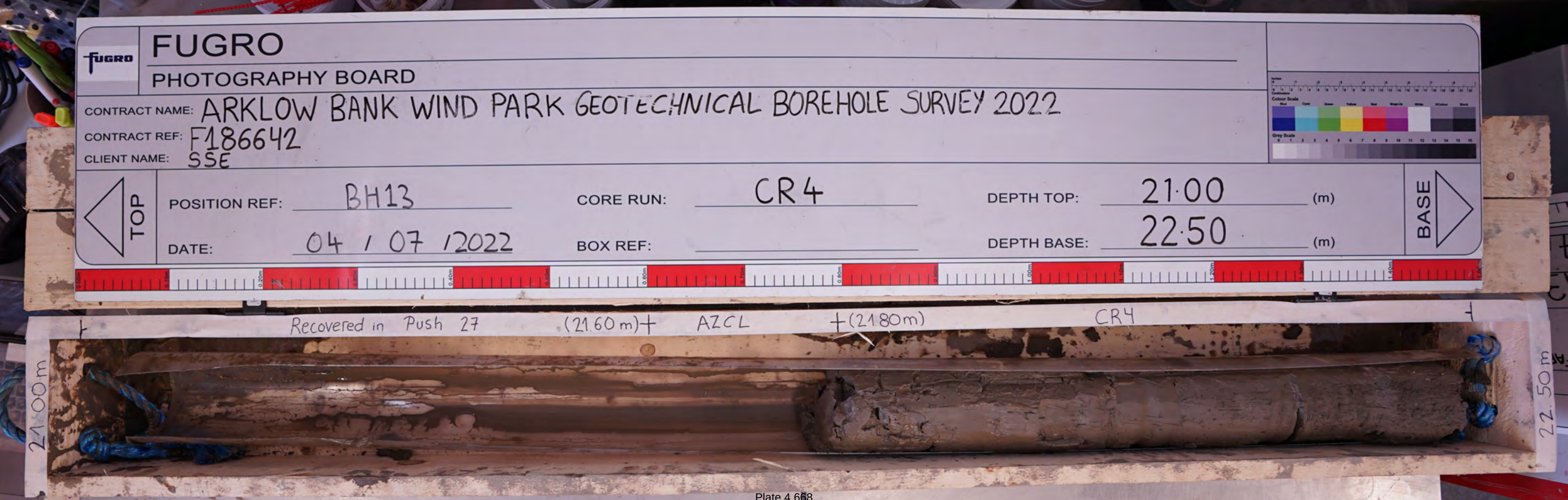

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR4
DEPTH TOP: 21·00 (m)
DATE: 04 / 07 /2022
BOX REF:
DEPTH BASE: 22·50 (m)
BASE
Recovered in Push 27 (21.60 m) AZCL (21.80m) CR4
21.00m
22.50m

Plate 4.668

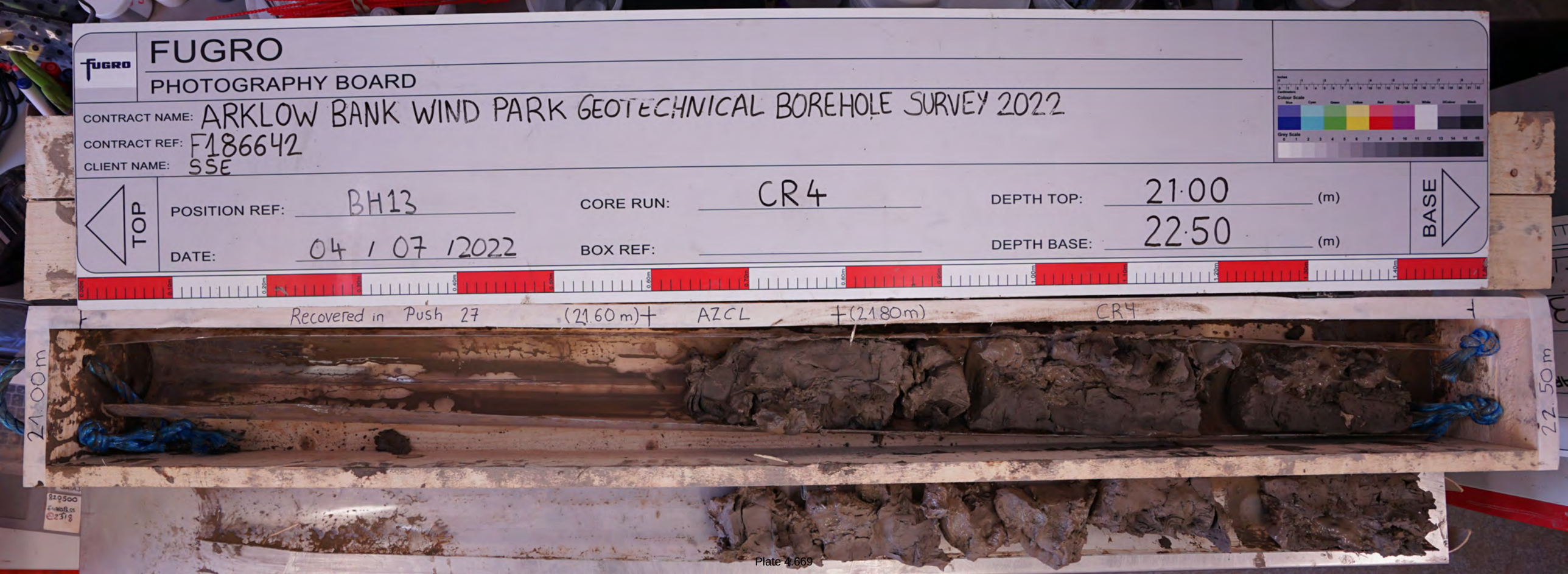

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
DATE: 04 / 07 /2022
CORE RUN: CR4
BOX REF:
DEPTH TOP: 21·00 (m)
DEPTH BASE: 22·50 (m)
BASE
Recovered in Push 27 (21.60 m)+ AZCL +(21.80m) CR4
21.00m
22.50m

Plate 4.669

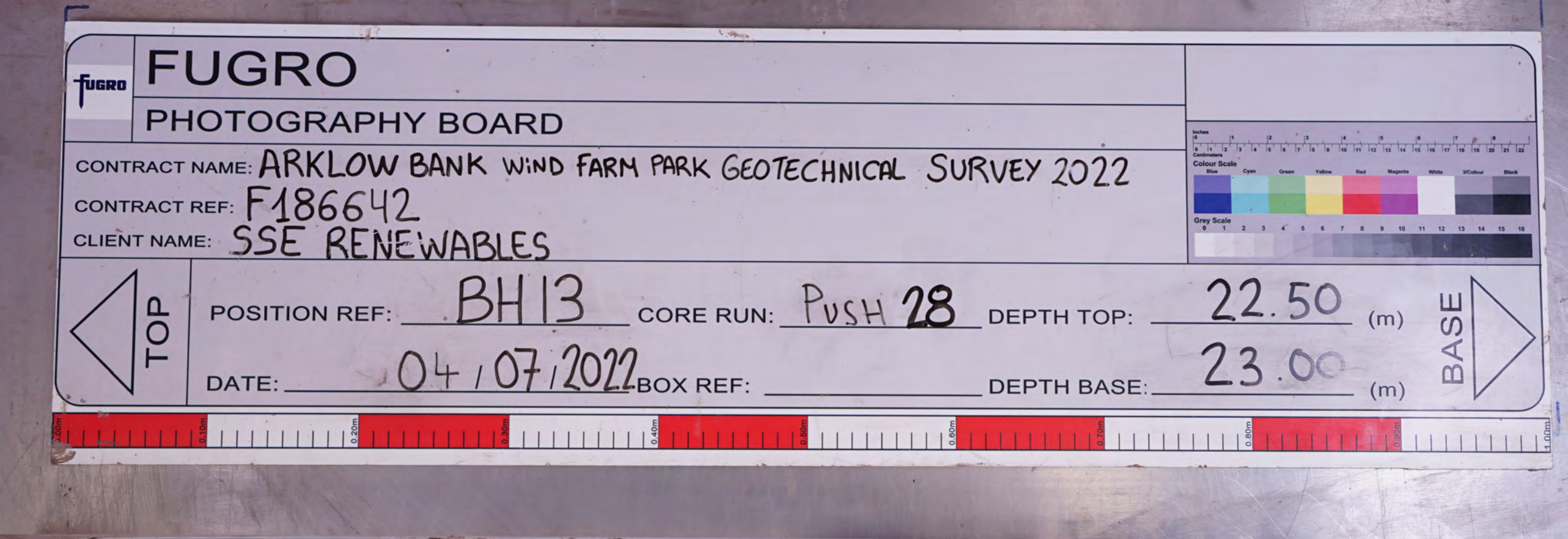

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 28
DEPTH TOP: 22.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 23.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.670

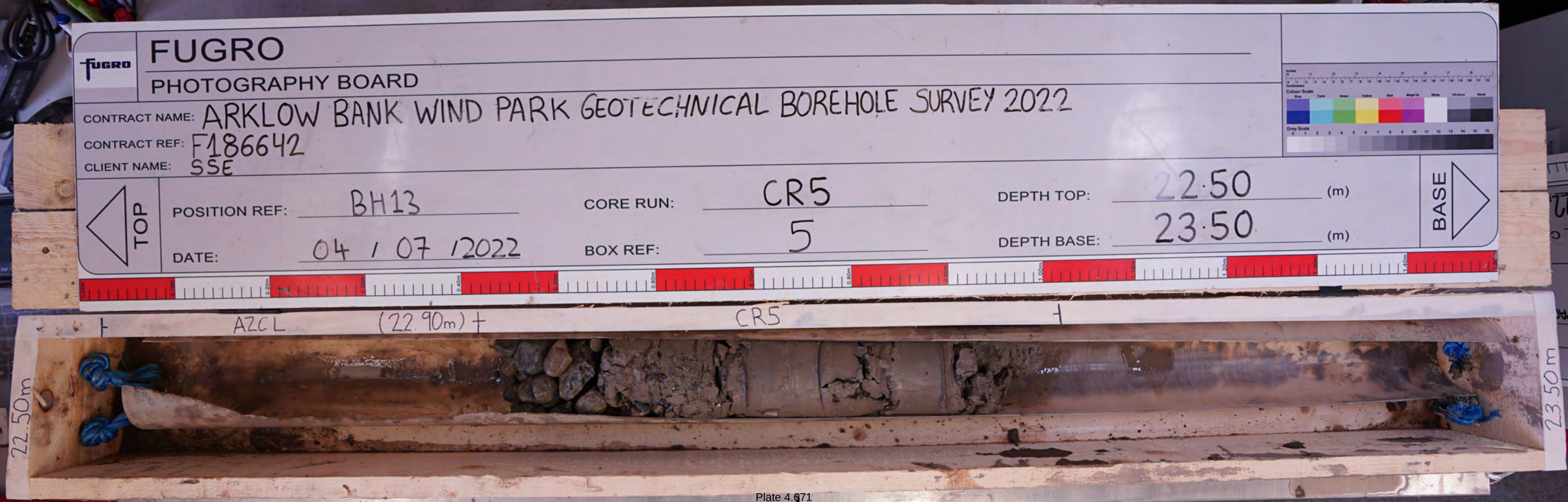

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR5
DEPTH TOP: 22.50 (m)
DATE: 04 / 07 /2022
BOX REF: 5
DEPTH BASE: 23.50 (m)
BASE
AZCL (22.90m)
CR5
22.50m
23.50m

Plate 4.671

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 04 / 07 /2022

CORE RUN: CR5

BOX REF: 5

DEPTH TOP: 22.50 (m)

DEPTH BASE: 23.50 (m)

BASE

AZCL (22.90m) CR5

22.50m

23.50m

Plate 4.672

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 04 / 07 /2022

CORE RUN: CR6

BOX REF:

DEPTH TOP: 23.50 (m)

DEPTH BASE: 24.50 (m)

BASE

NO RECOVERY

Plate 4.673

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 04 / 07 /2022

CORE RUN: CR7

BOX REF: Box 6

DEPTH TOP: 24.50 (m)

DEPTH BASE: 26.00 (m)

BASE

AZCL

+(24.90m)

CR7

24.50m

26.00m



Plate 4.674

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 04 / 07 /2022

CORE RUN: CR7

BOX REF: Box 6

DEPTH TOP: 24.50 (m)

DEPTH BASE: 26.00 (m)

BASE

AZCL

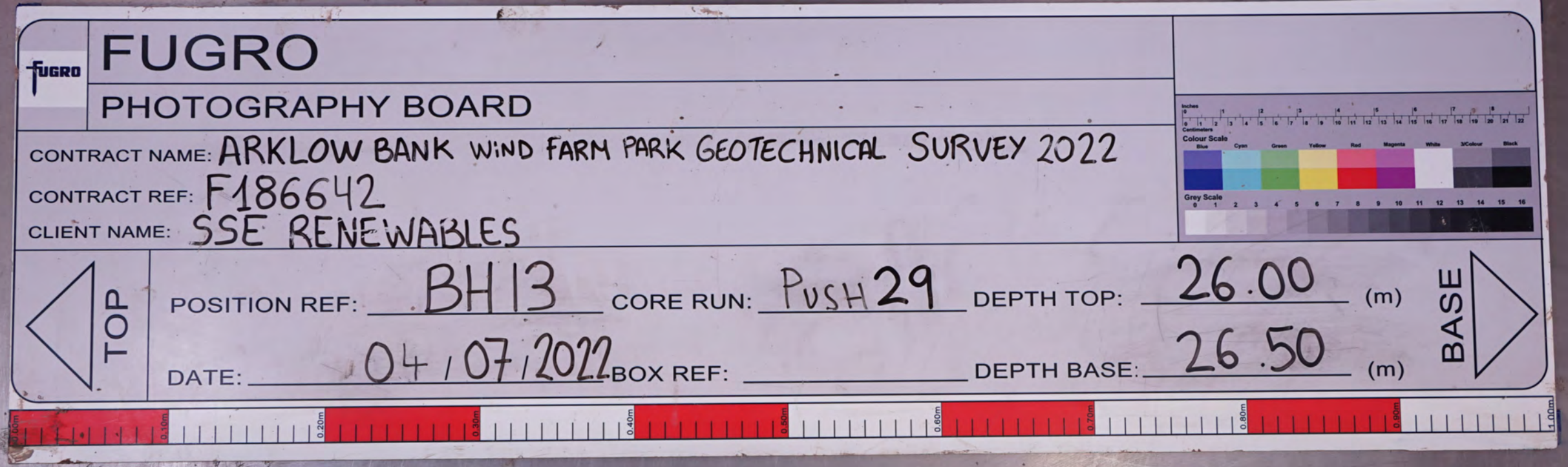
† (24.90m)

CR 7

24.50m

26.00m

Plate 4.675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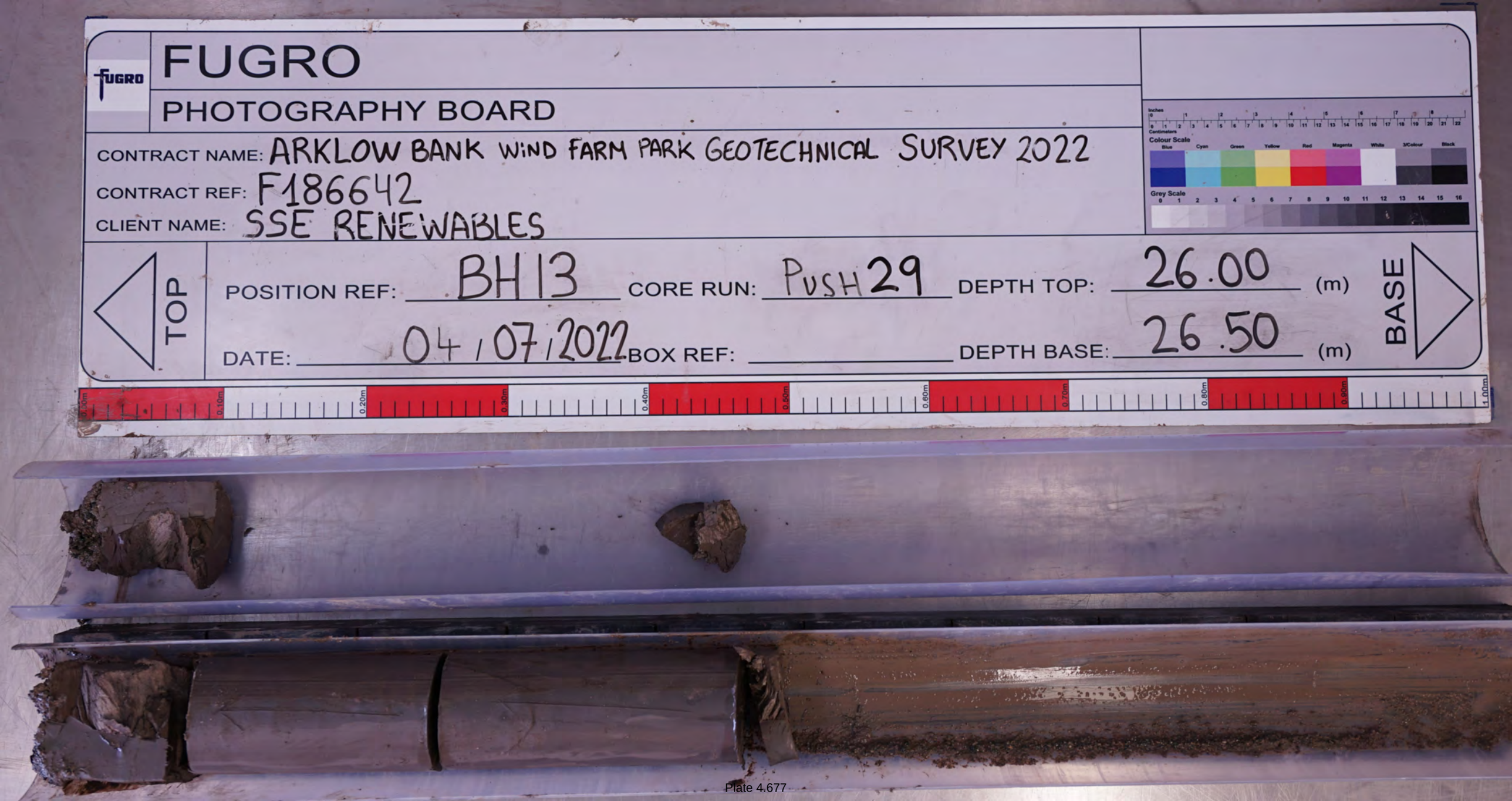
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH29
DEPTH TOP: 26.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.676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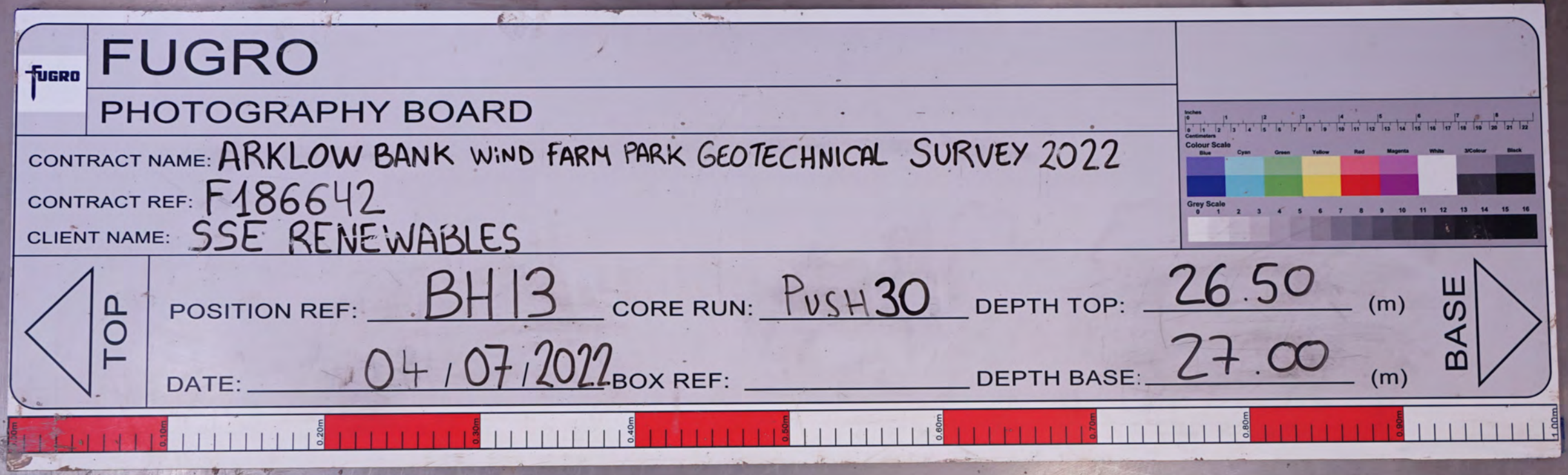
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH29
DEPTH TOP: 26.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.677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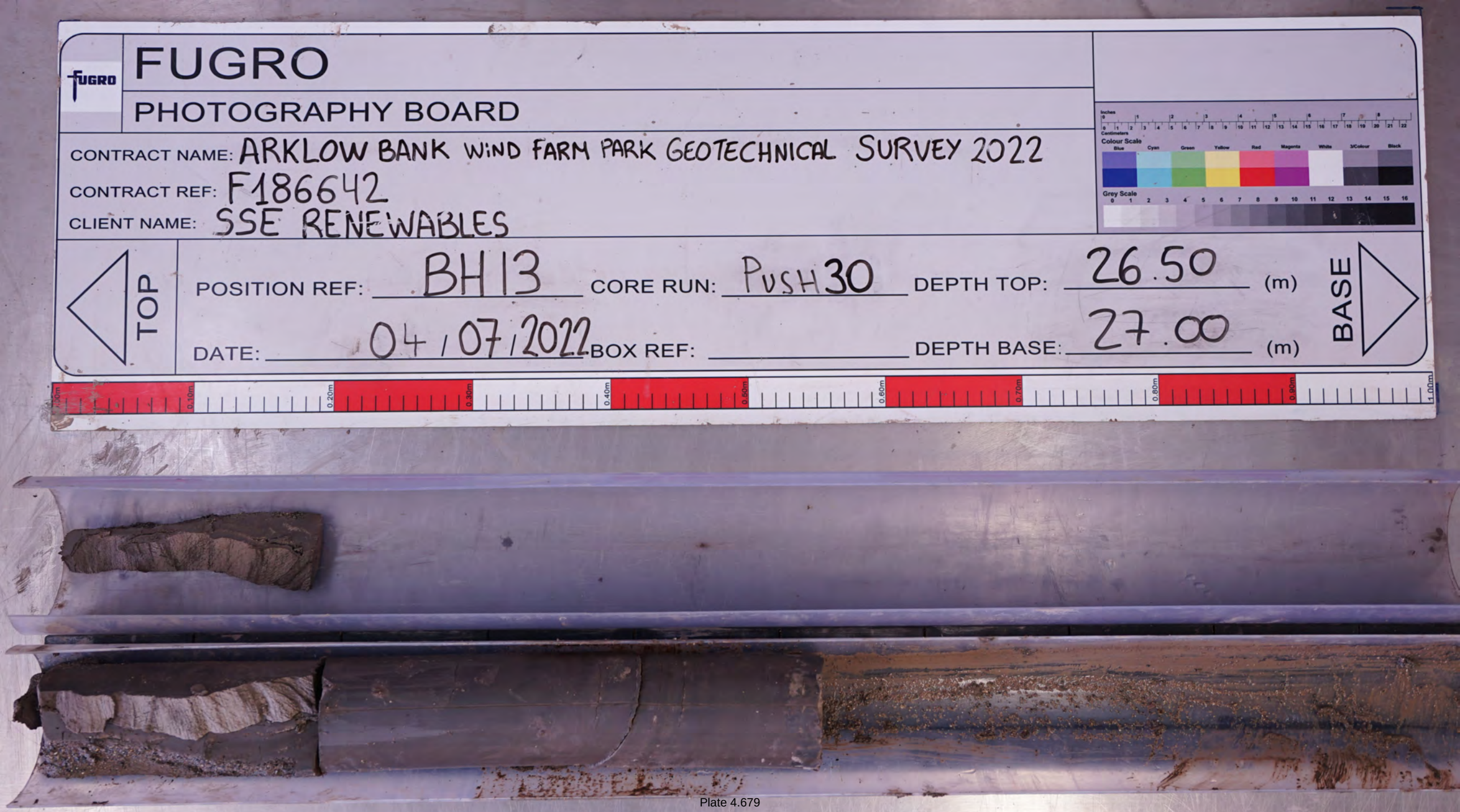
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH30
DEPTH TOP: 26.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.678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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH30
DEPTH TOP: 26.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.679

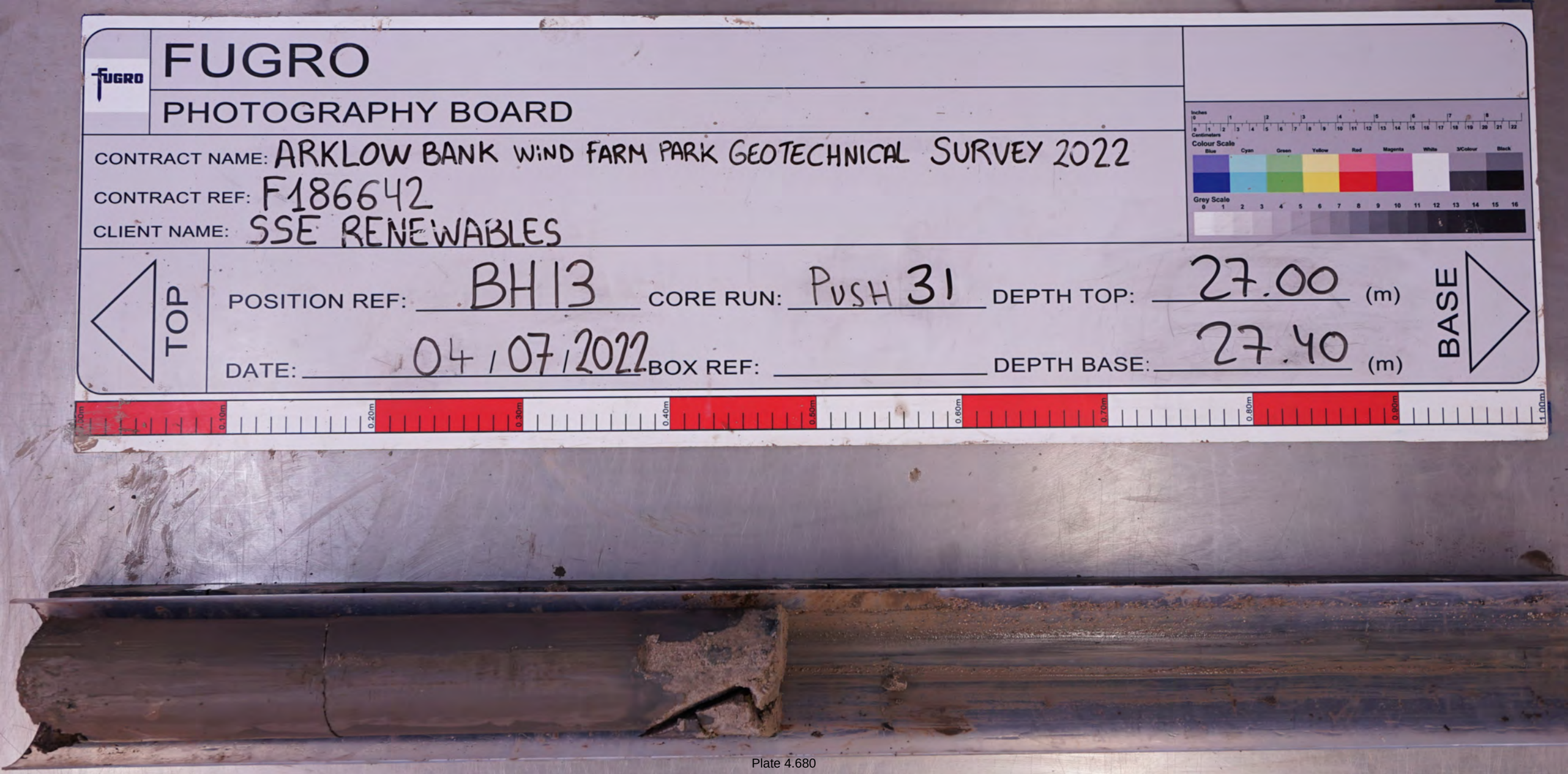
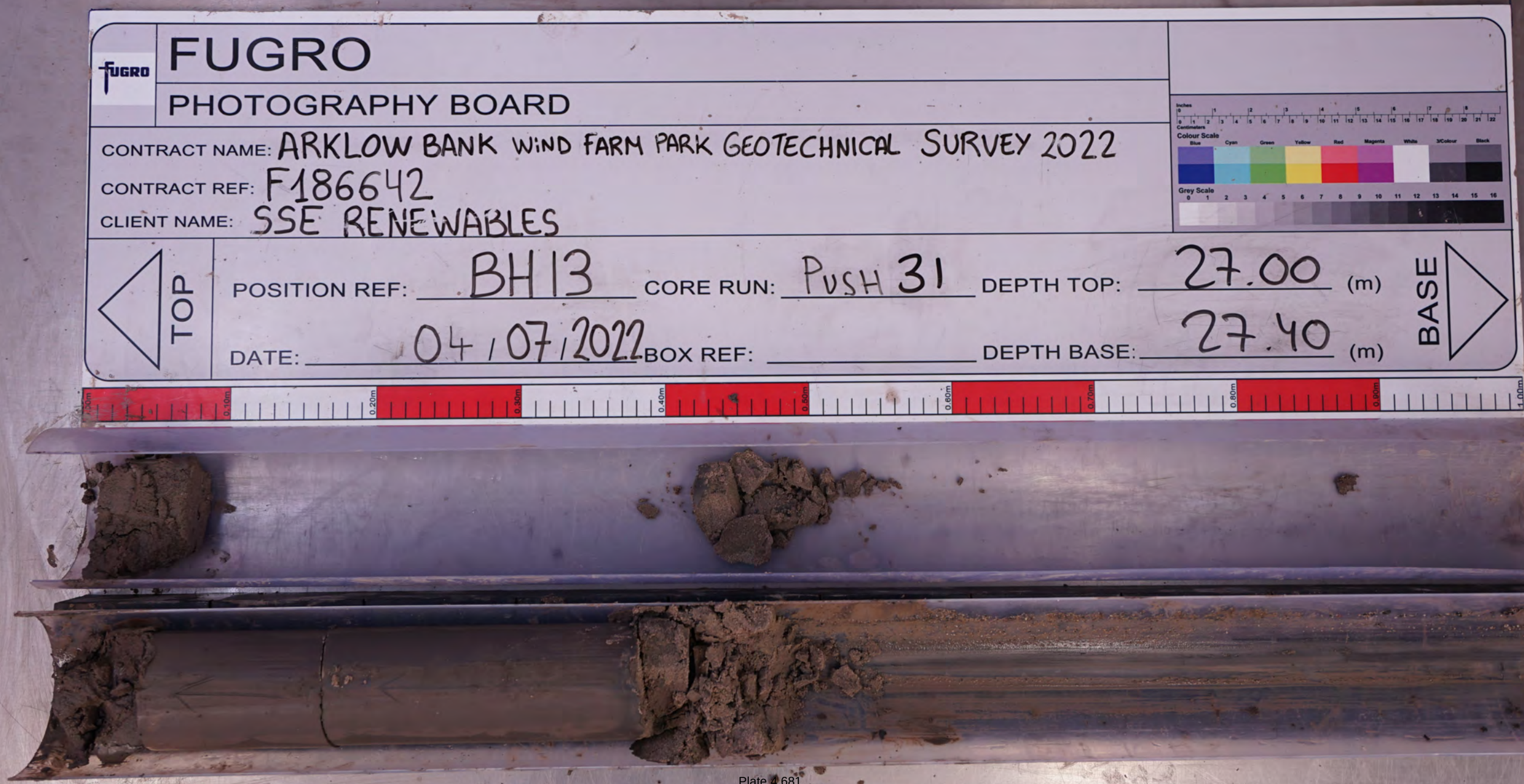

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 31
DEPTH TOP: 27.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 27.40 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.680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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 31
DEPTH TOP: 27.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 27.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.681


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 32
DEPTH TOP: 27.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 27.90 (m)
BASE
Colour Scale
Grey Scale

Plate 4.682

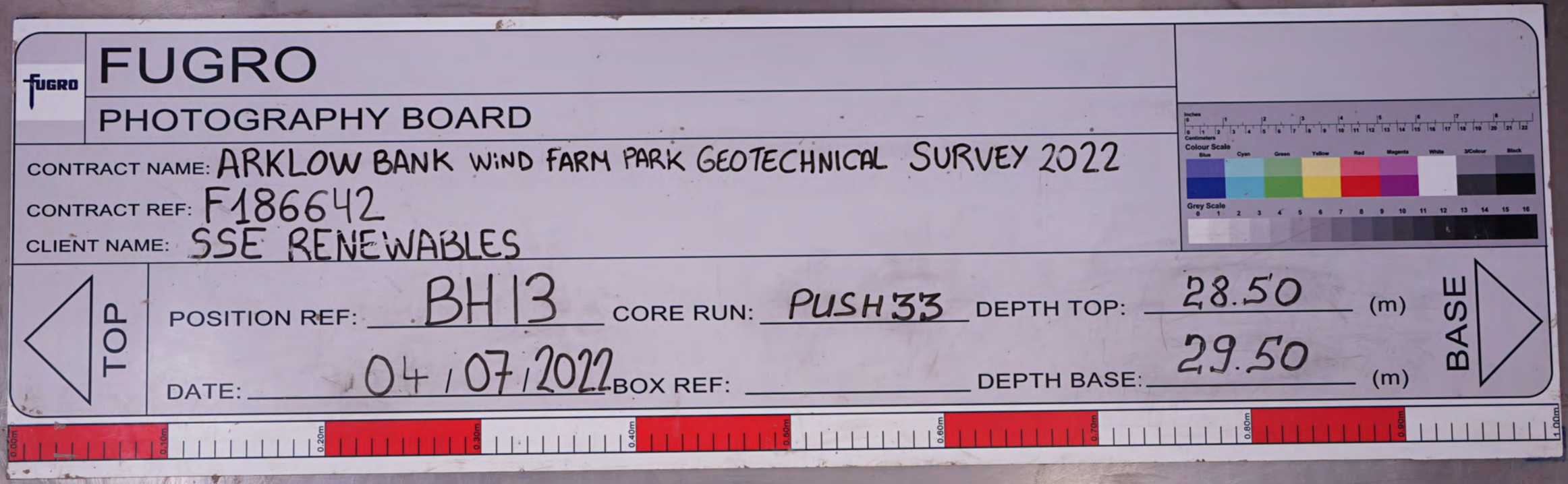

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH33
DEPTH TOP: 28.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.683

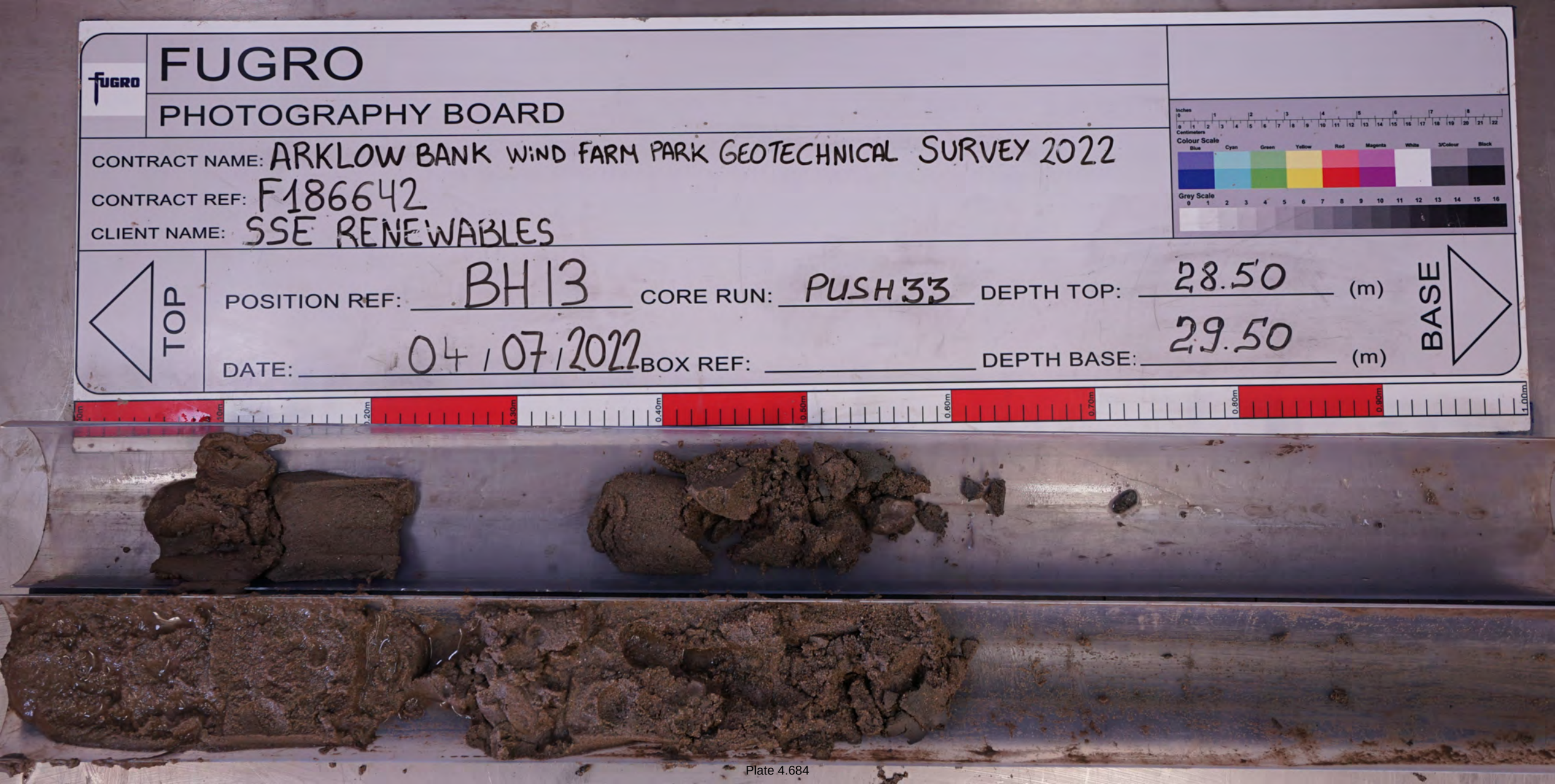

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH33
DEPTH TOP: 28.50 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 29.50 (m)
BASE

Plate 4.684

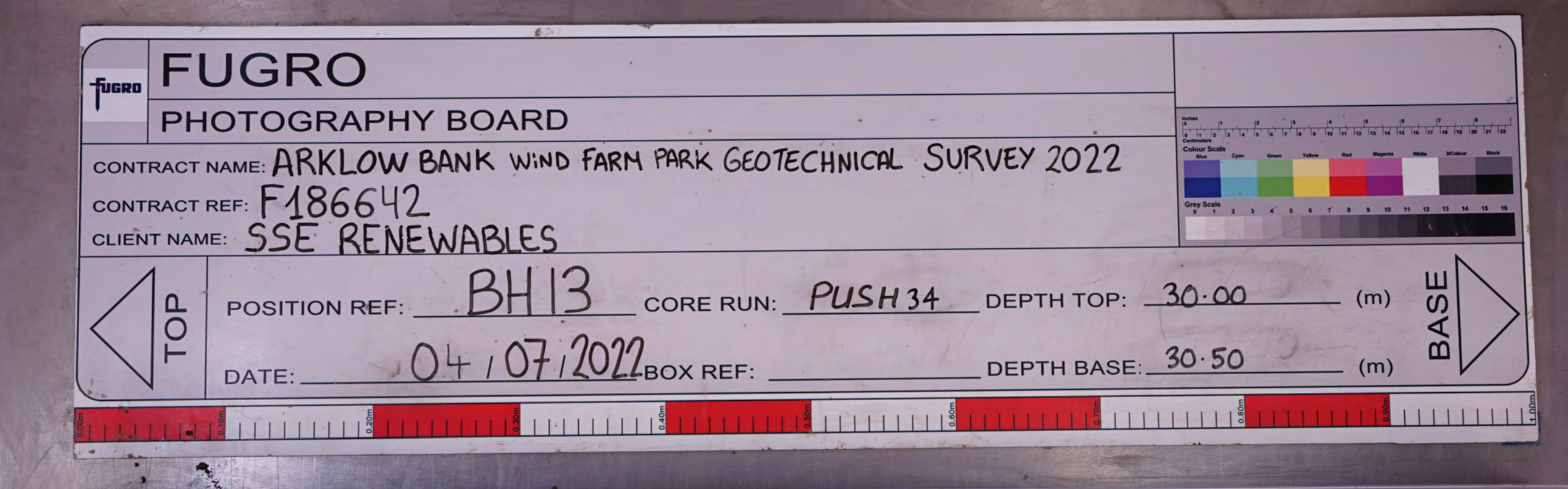
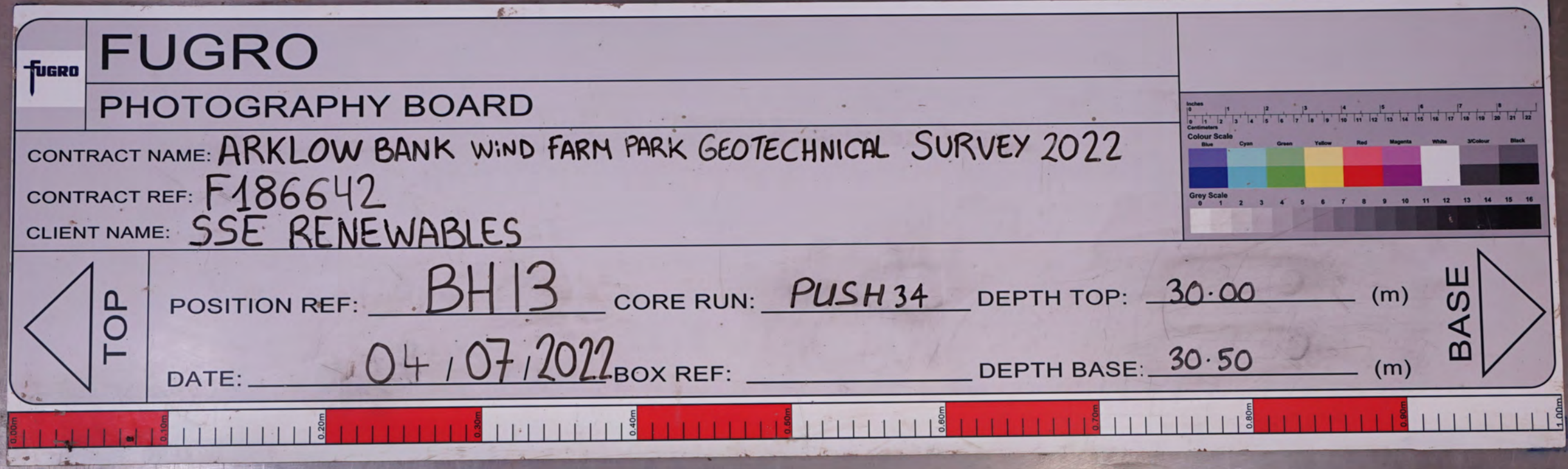

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 34
DEPTH TOP: 30.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 30.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.685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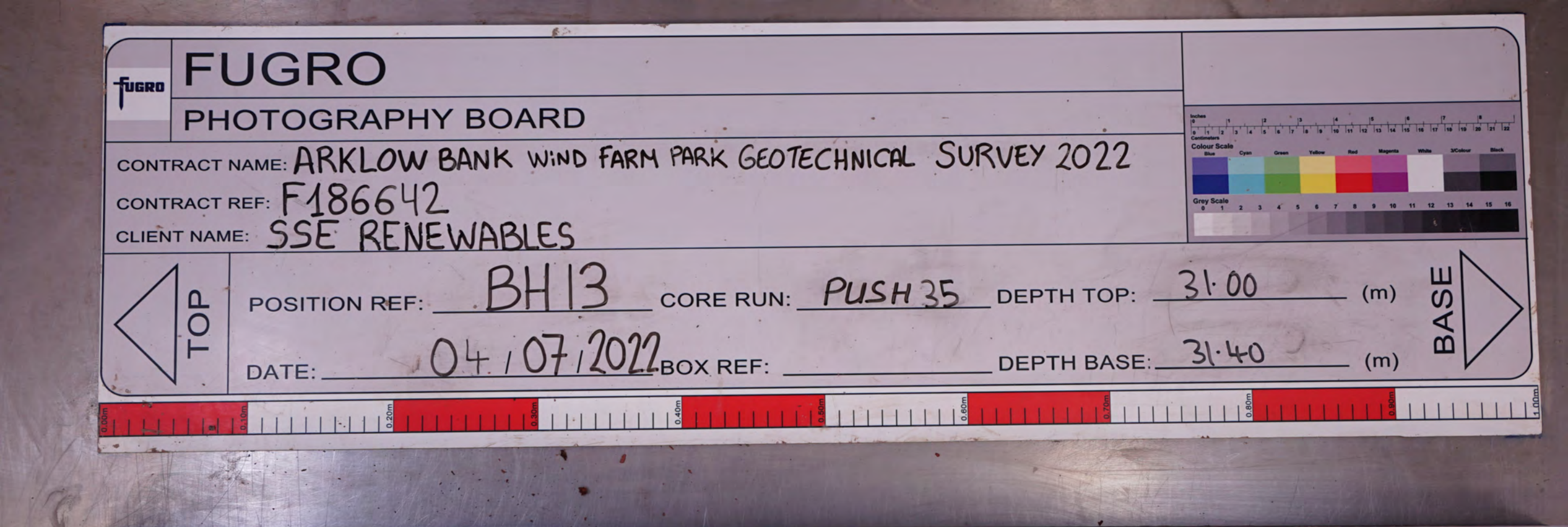
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 34
DEPTH TOP: 30.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 30.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.686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CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH13
CORE RUN: PUSH 35
DEPTH TOP: 31.00 (m)
DATE: 04/07/2022
BOX REF:
DEPTH BASE: 31.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.687

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 04 / 07 /2022

CORE RUN: CR8

BOX REF: 7

DEPTH TOP: 31.00 (m)

DEPTH BASE: 32.00 (m)

BASE

TAZCL +(31.07m) CR8 7

31.00m

32.00m

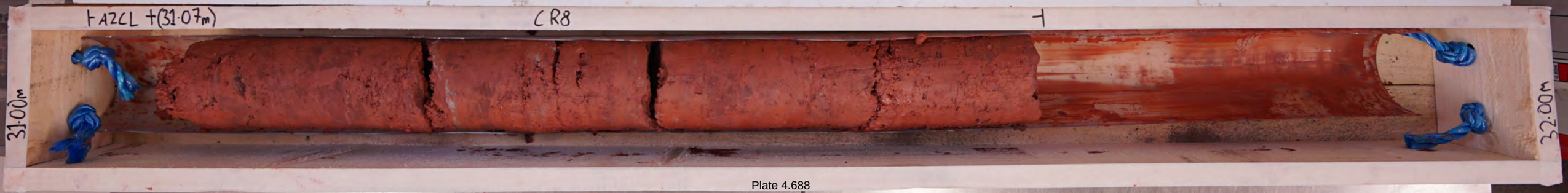

Plate 4.688

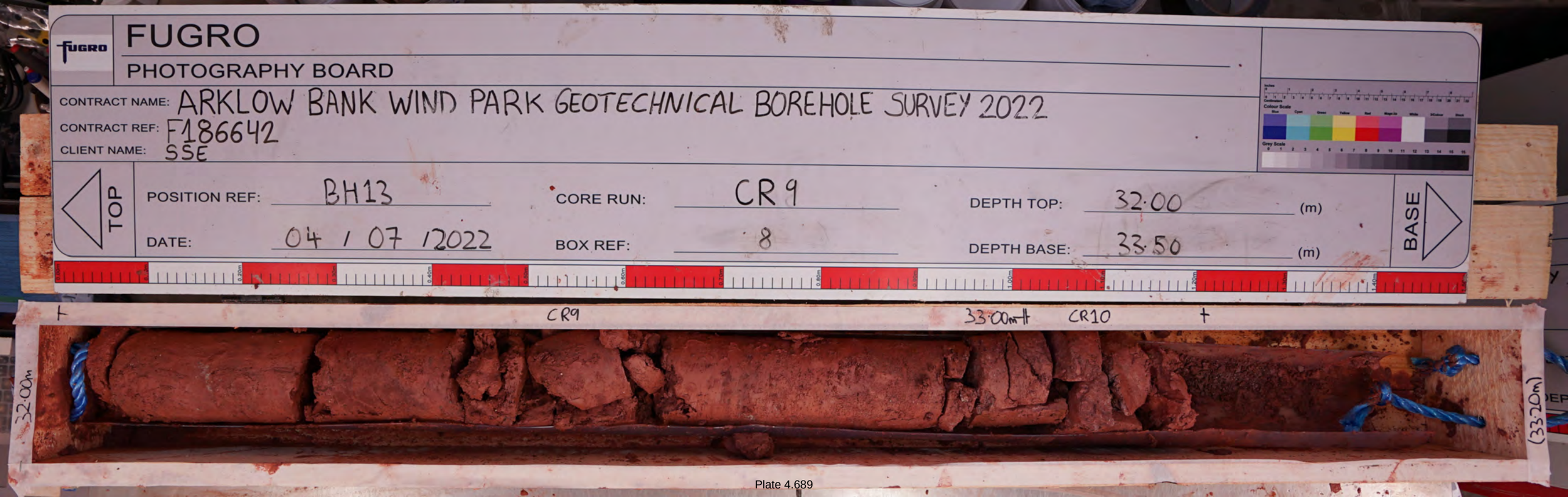
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR9
DEPTH TOP: 32.00 (m)
DATE: 04 / 07 /2022
BOX REF: 8
DEPTH BASE: 33.50 (m)
BASE
CR9
33.00m
CR10
32.00m
(33.20m)

Plate 4.689

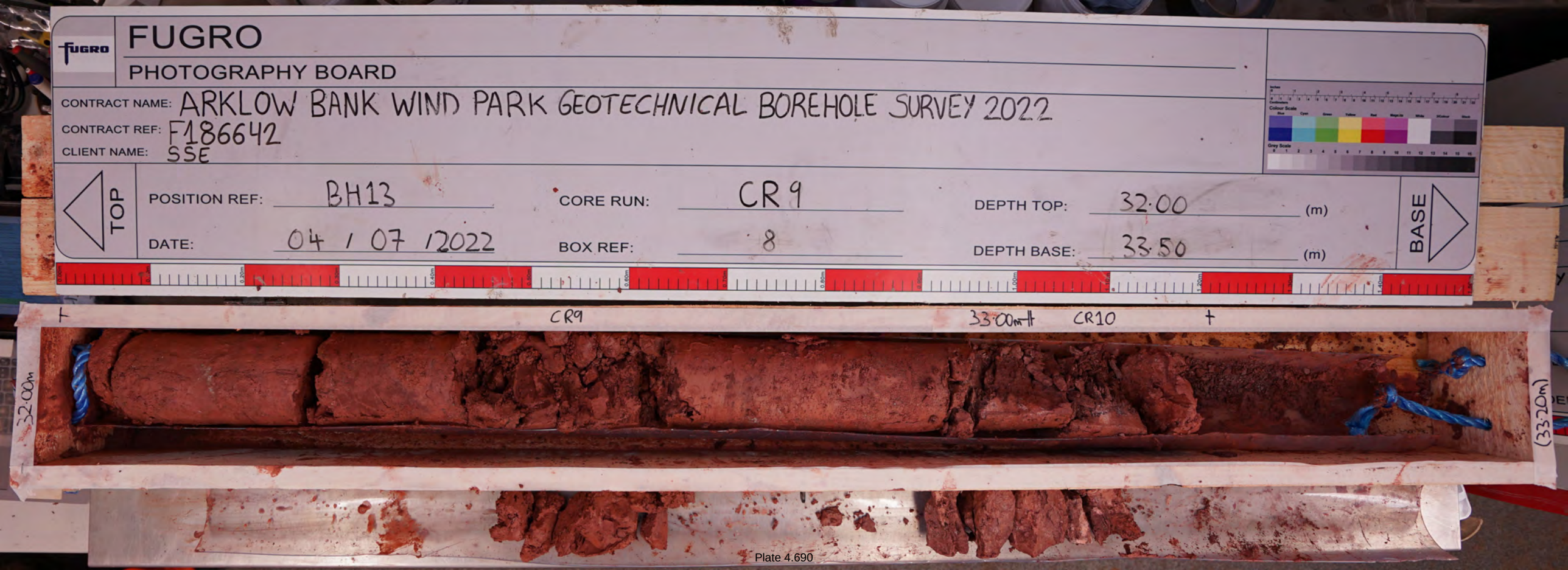
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR9
DEPTH TOP: 32.00 (m)
DATE: 04 / 07 /2022
BOX REF: 8
DEPTH BASE: 33.50 (m)
BASE
CR9
33.00m
CR10
32.00m
(33.20m)

Plate 4.690


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CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR10
DEPTH TOP: 33.00 (m)
DATE: 04 / 07 /2022
BOX REF: 9
DEPTH BASE: 34.50 (m)
BASE
CR10
33.00m
34.50m

Plate 4.691

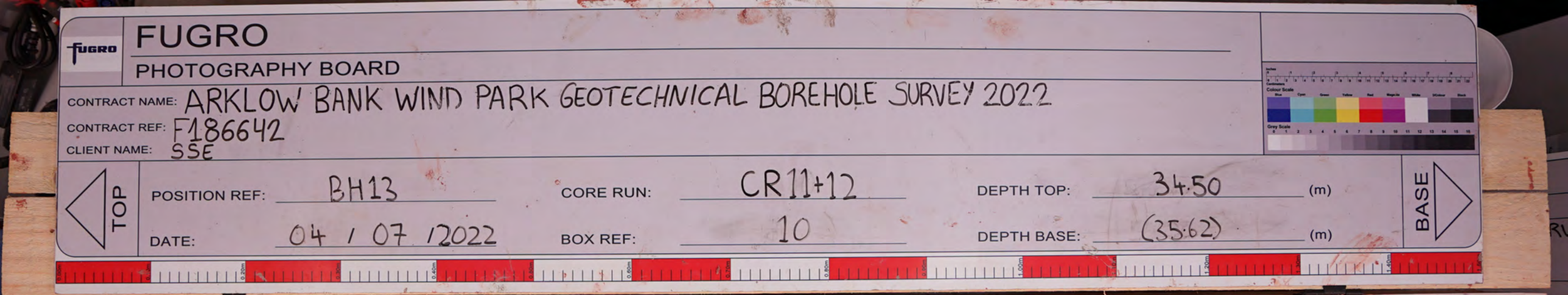
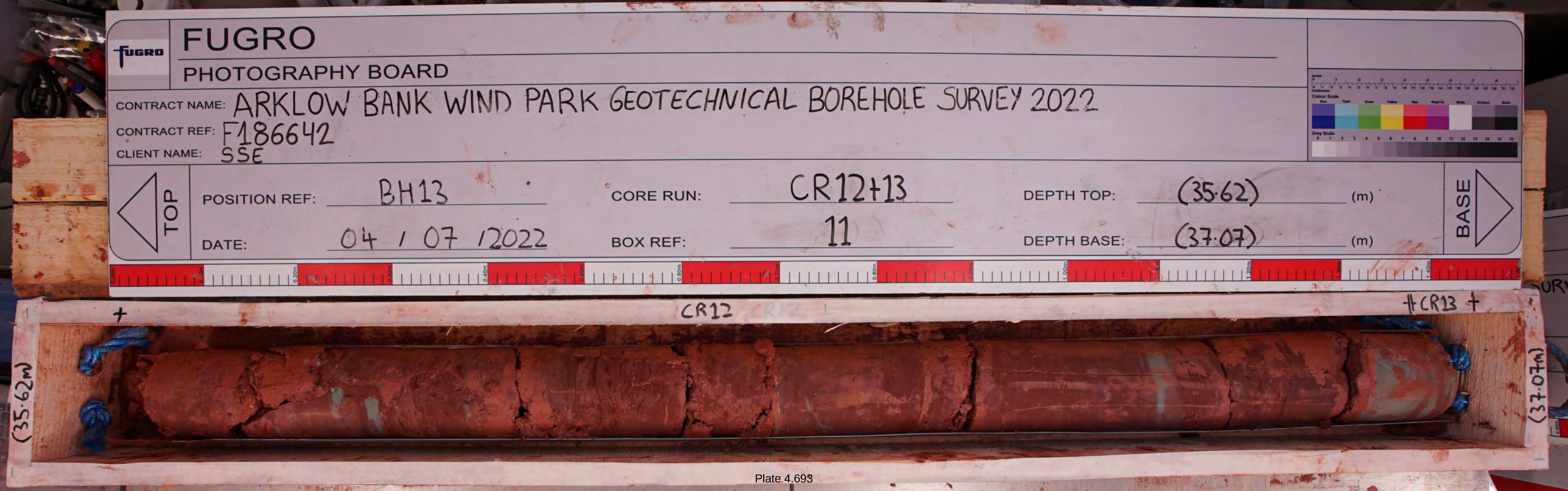

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR11+12
DEPTH TOP: 34.50 (m)
DATE: 04 / 07 /2022
BOX REF: 10
DEPTH BASE: (35.62) (m)
BASE
CR11
35.50m
CR12
34.50m
(35.62m)

Plate 4.692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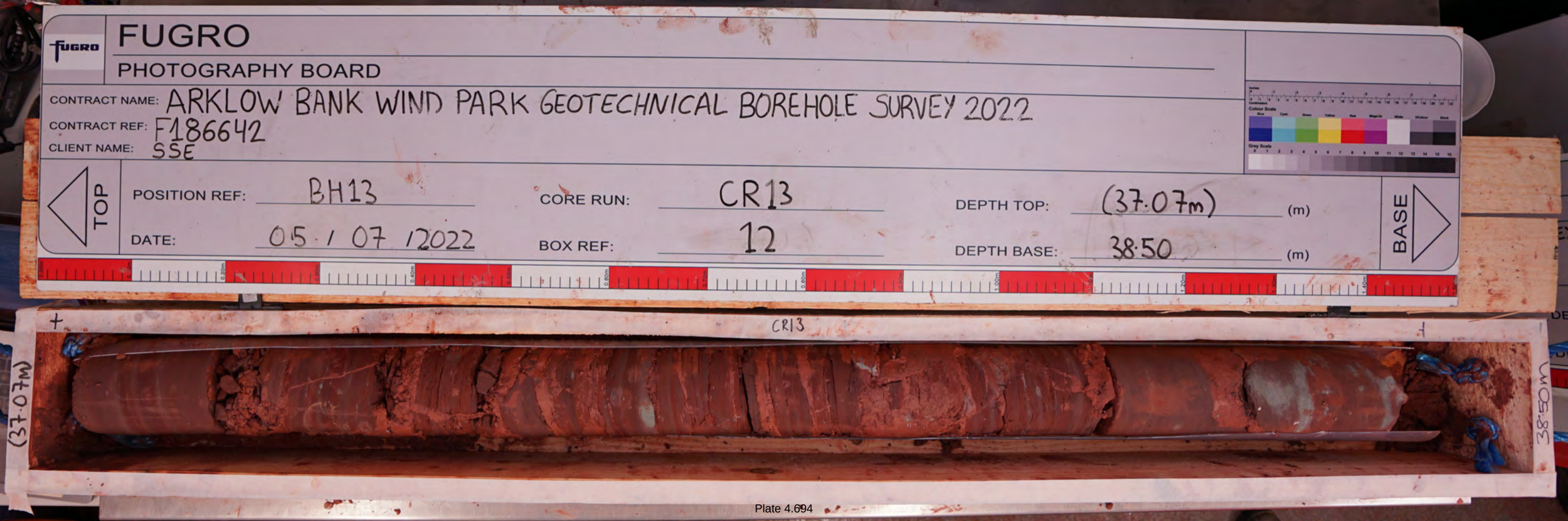
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR12+13
DEPTH TOP: (35.62) (m)
DATE: 04 / 07 /2022
BOX REF: 11
DEPTH BASE: (37.07) (m)
BASE
CR12
CR13
(35.62m)
(37.07m)

Plate 4.693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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR13
DEPTH TOP: (37.07m) (m)
DATE: 05/07/2022
BOX REF: 12
DEPTH BASE: 38.50 (m)
BASE
CR13
(37.07m)
38.50m

Plate 4.694

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

CORE RUN: CR14

DEPTH TOP: 38.50 (m)

DATE: 05 / 07 / 2022

BOX REF: 13

DEPTH BASE: (39.94) (m)

BASE

CR14

(39.94m) ↑ slipped core ↓

38.50m

40.00m

Plate 4.695

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

CORE RUN: CR15

DEPTH TOP: (39.94) (m)

DATE: 05 / 07 /2022

BOX REF: 14

DEPTH BASE: (41.00) (m)

BASE

CR14 40.00m

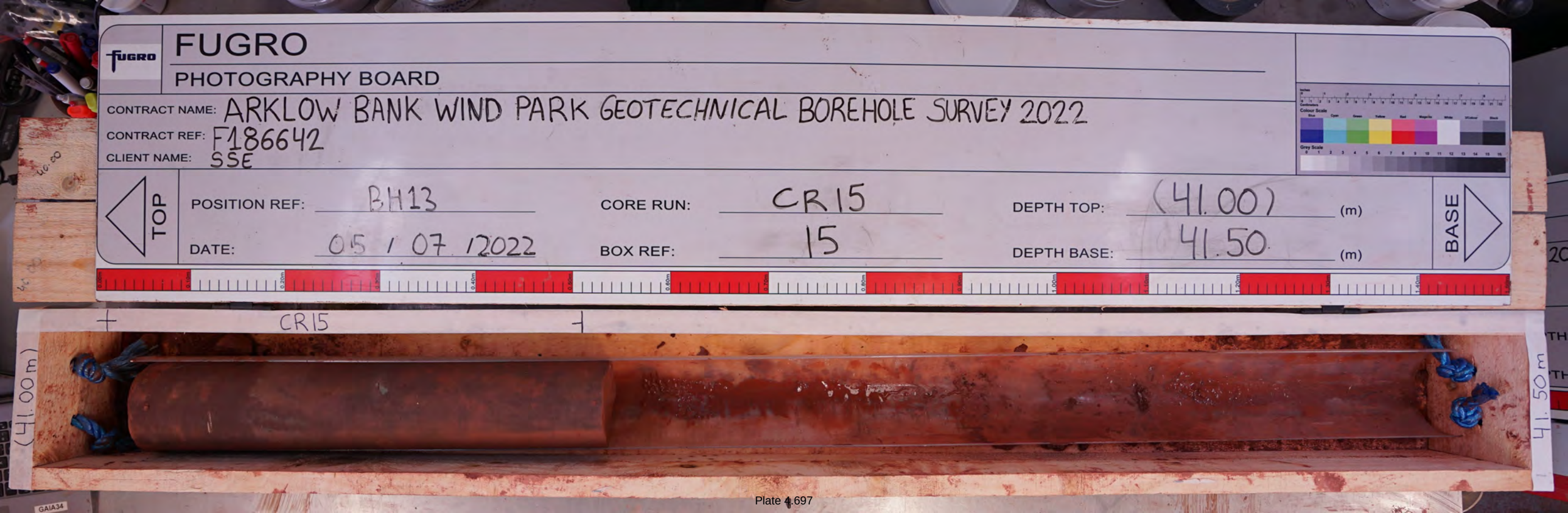
CR15

(41.00m)

(39.94m)

(41.00m)

Plate 4.696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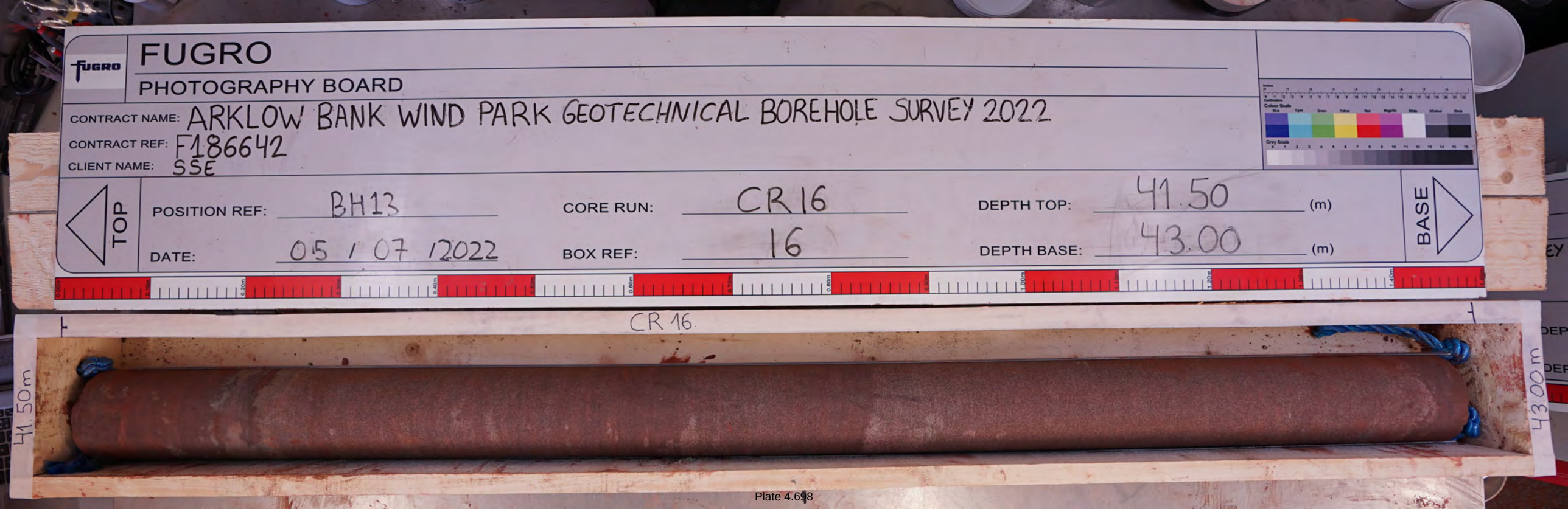
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR15
DEPTH TOP: (41.00) (m)
DATE: 05 / 07 /2022
BOX REF: 15
DEPTH BASE: 41.50 (m)
BASE
CR15
(41.00 m)
41.50m

Plate 4.697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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
DATE: 05 / 07 /2022
CORE RUN: CR16
BOX REF: 16
DEPTH TOP: 41.50 (m)
DEPTH BASE: 43.00 (m)
BASE
CR 16
41.50m
43.00m

Plate 4.698

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 05 / 07 / 2022

CORE RUN: CR17

BOX REF: 17

DEPTH TOP: 43.00 (m)

DEPTH BASE: 44.50 (m)

BASE

CR17

(44.39m) + Slipped

43.00m

(44.39m)

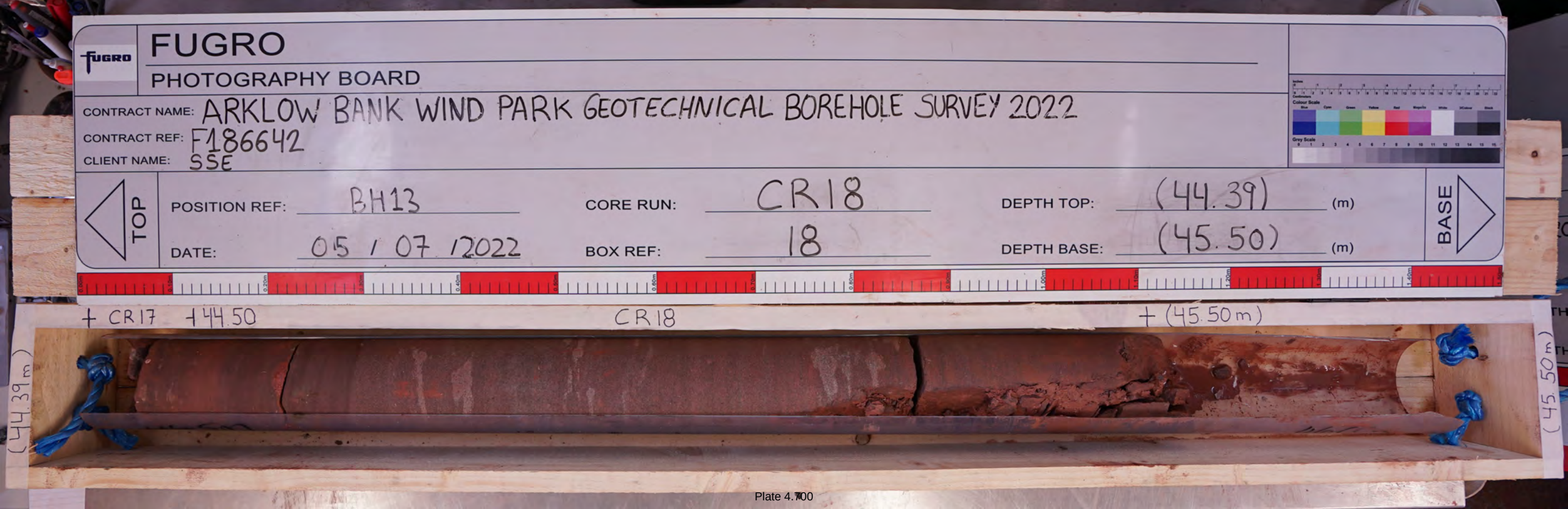

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR18
DEPTH TOP: (44.39) (m)
DATE: 05 / 07 /2022
BOX REF: 18
DEPTH BASE: (45.50) (m)
BASE
+ CR17 +44.50
CR18
+ (45.50 m)
(44.39 m)
(45.50 m)

Plate 4.700

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 05 / 07 /2022

CORE RUN: CR18

BOX REF: 19

DEPTH TOP: (45.50) (m)

DEPTH BASE: 46.00 (m)

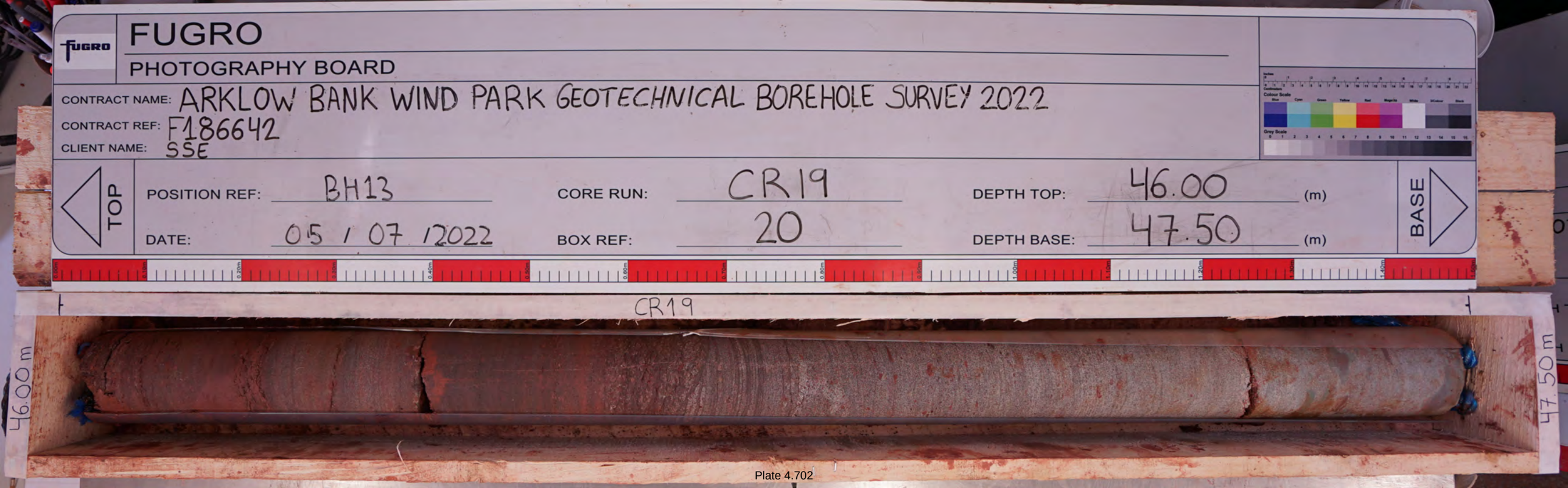
BASE

CR18

(45.50m)

46.00m

Plate 4.701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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR19
DEPTH TOP: 46.00 (m)
DATE: 05 / 07 / 2022
BOX REF: 20
DEPTH BASE: 47.50 (m)
BASE
CR19
46.00 m
47.50 m

Plate 4.702

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 05 / 07 /2022

CORE RUN: CR20

BOX REF: 21

DEPTH TOP: 47.50 (m)

DEPTH BASE: 49.00 (m)

BASE

CR 20

47.50m

49.00m

Plate 4.703

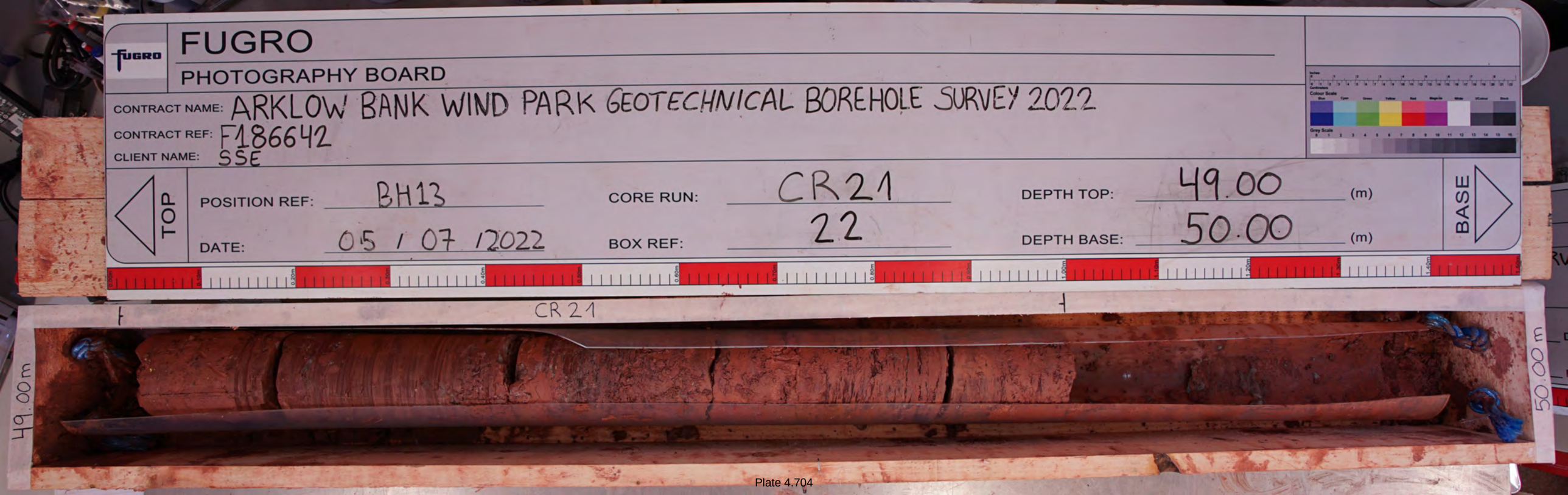

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE
TOP
POSITION REF: BH13
CORE RUN: CR21
DEPTH TOP: 49.00 (m)
DATE: 05 / 07 /2022
BOX REF: 22
DEPTH BASE: 50.00 (m)
BASE
CR 21
49.00m
50.00m

Plate 4.704

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE

TOP

POSITION REF: BH13

DATE: 05 / 07 /2022

CORE RUN: CR22

BOX REF: 23

DEPTH TOP: 50.00 (m)

DEPTH BASE: 51.50 (m)

BASE

AZCL + (50.30m) CR22

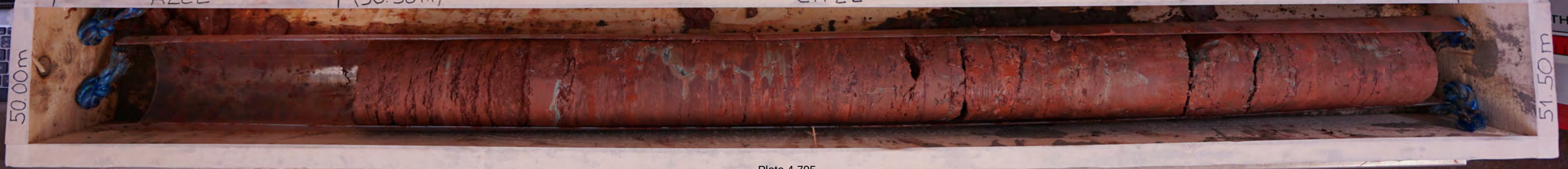


Plate 4.705

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: B1 DEPTH TOP: 0.00 (m)

DATE: 06/07/2022 BOX REF: DEPTH BASE: 0.50 (m)

BASE



Plate 4.706

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: B2 DEPTH TOP: 0.50 (m)

DATE: 06/07/2022 BOX REF: DEPTH BASE: 1.00 (m)

BASE



Plate 4.707

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: B3 DEPTH TOP: 1.00 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 1.50 (m)

BASE



Plate 4.708


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: B4
DEPTH TOP: 1.50 (m)
DATE: 07/07/2022
BOX REF:
BASE: 2.20 (m)
BASE

Plate 4.709

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 1 DEPTH TOP: 2.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 3.60 (m)

BASE



Plate 4.710

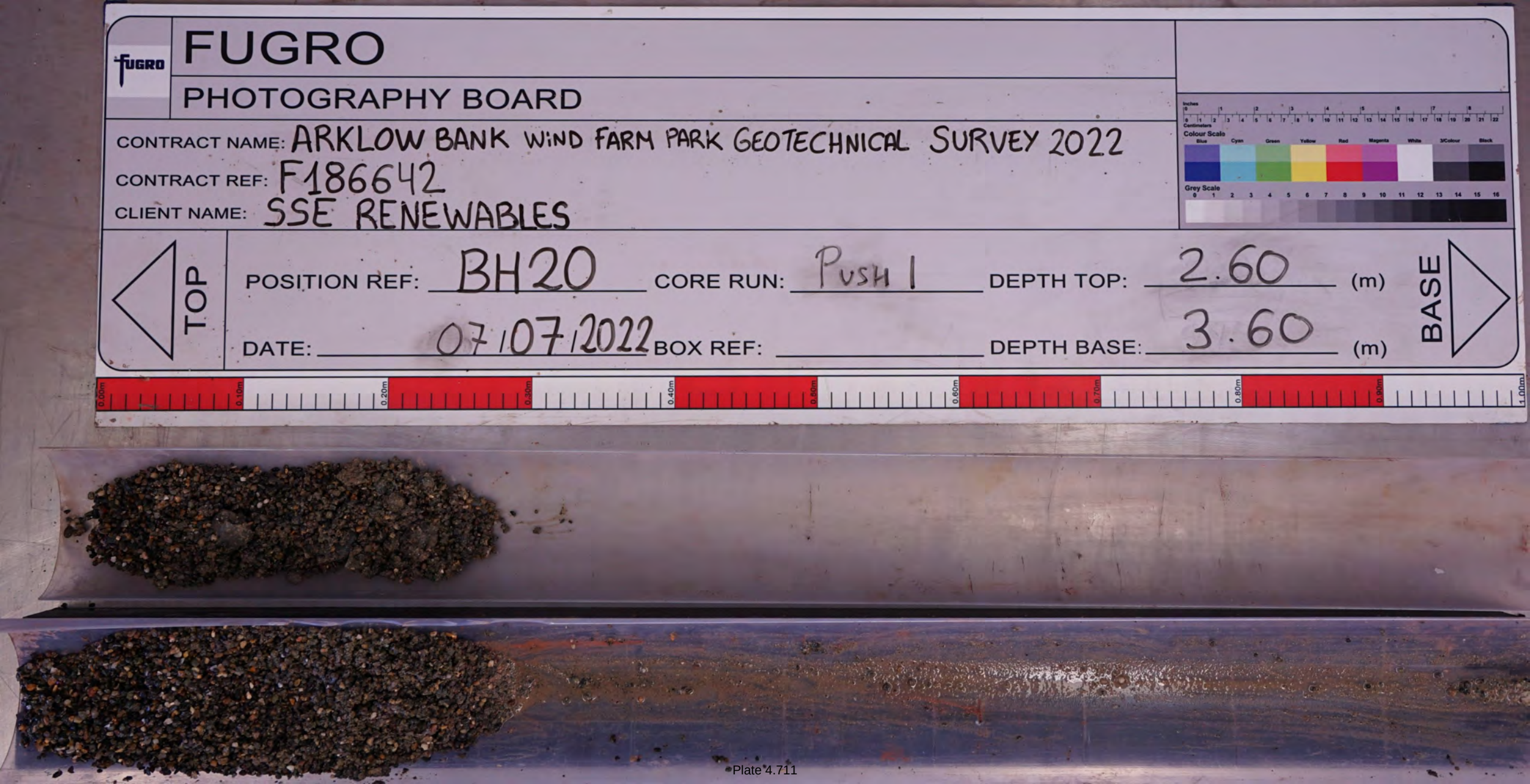

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 1
DEPTH TOP: 2.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 3.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.711

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: HAMMER 6 DEPTH TOP: 4.10 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 4.55 (m)

BASE



Plate 4.712

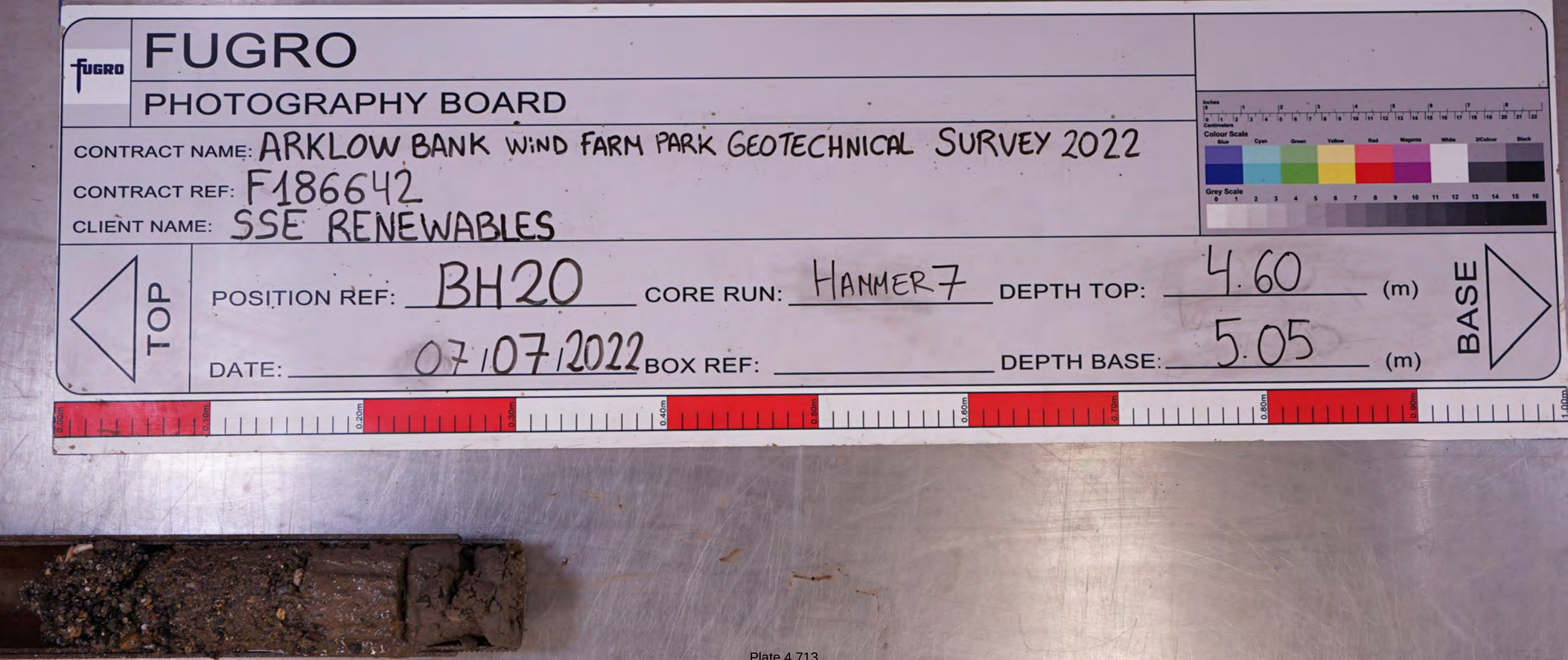

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: HAMMER7
DEPTH TOP: 4.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 5.05 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.713

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: HAMMER7 DEPTH TOP: 4.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 5.05 (m)

BASE



Plate 4.714


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 8
DEPTH TOP: 5.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 5.60 (m)
BASE

Plate 4.715

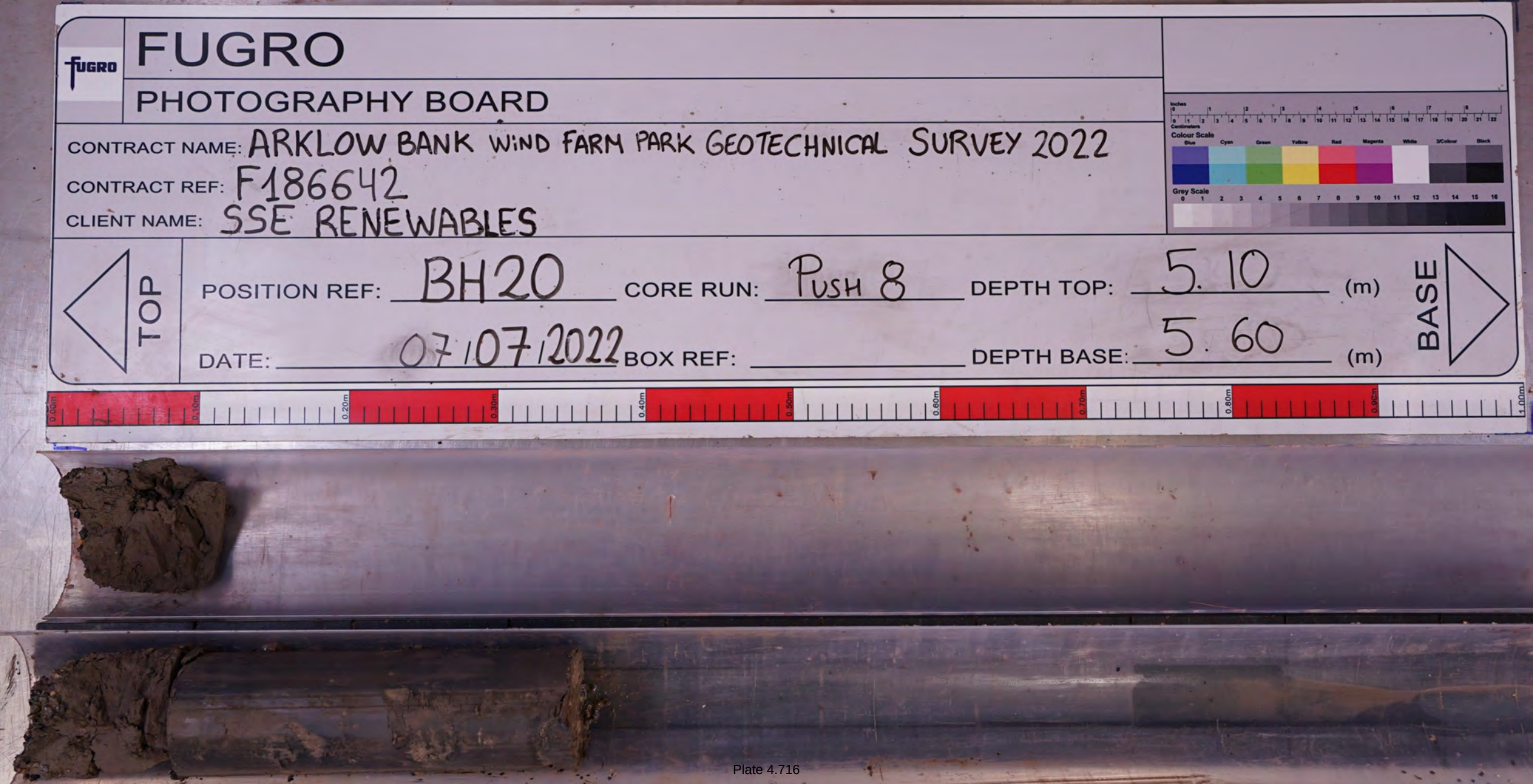

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: Push 8
DEPTH TOP: 5.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 5.60 (m)
BASE

Plate 4.716

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: Push 9 DEPTH TOP: 5.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 6.10 (m)

BASE





Plate 4.717

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: Push 9 DEPTH TOP: 5.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 6.10 (m)

BASE



Plate 4.718

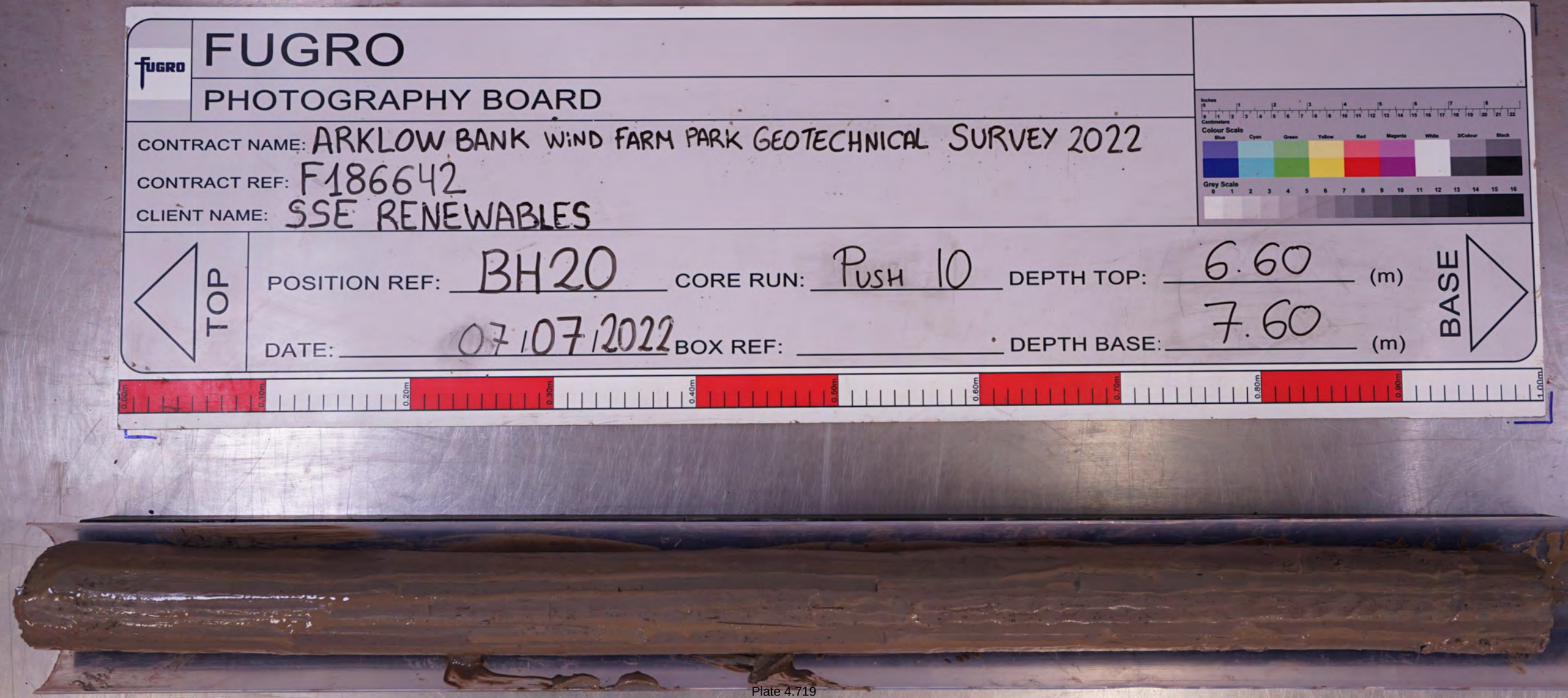

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: Push 10
DEPTH TOP: 6.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 7.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.719

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: Push 10 DEPTH TOP: 6.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 7.60 (m)

BASE



Plate 4.720

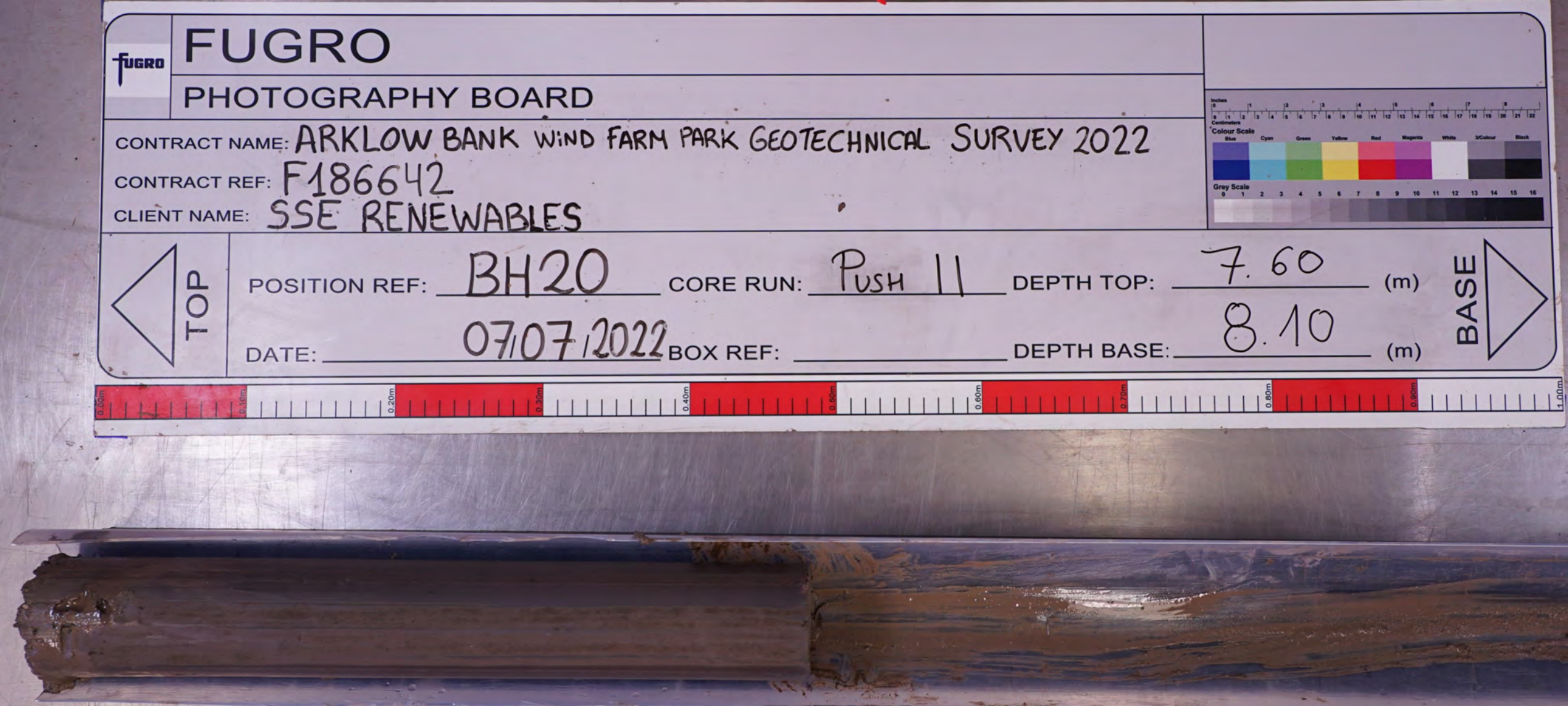

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 11
DEPTH TOP: 7.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 8.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.721


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 11
DEPTH TOP: 7.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 8.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.722

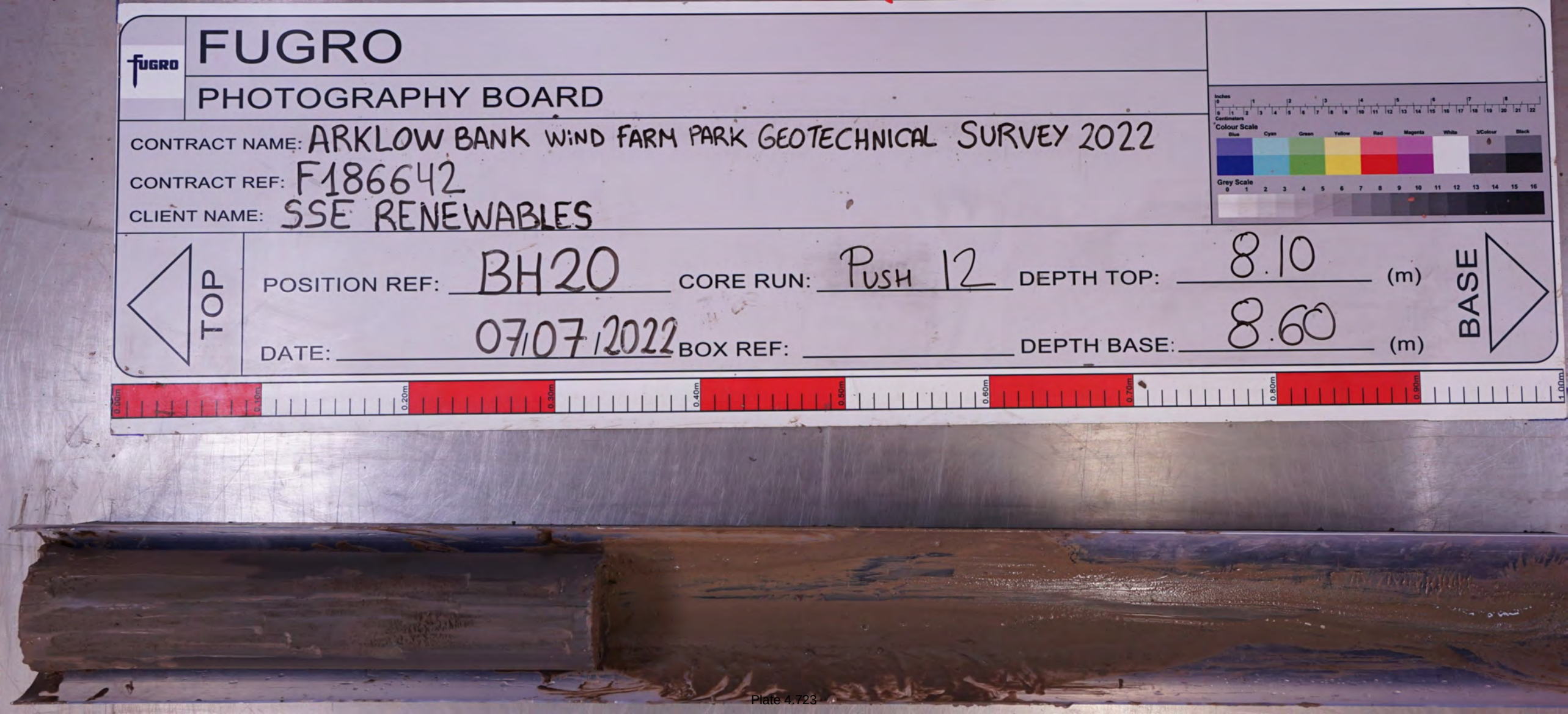

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: Push 12
DEPTH TOP: 8.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 8.60 (m)
BASE

Plate 4.723

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 12 DEPTH TOP: 8.10 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 8.60 (m)

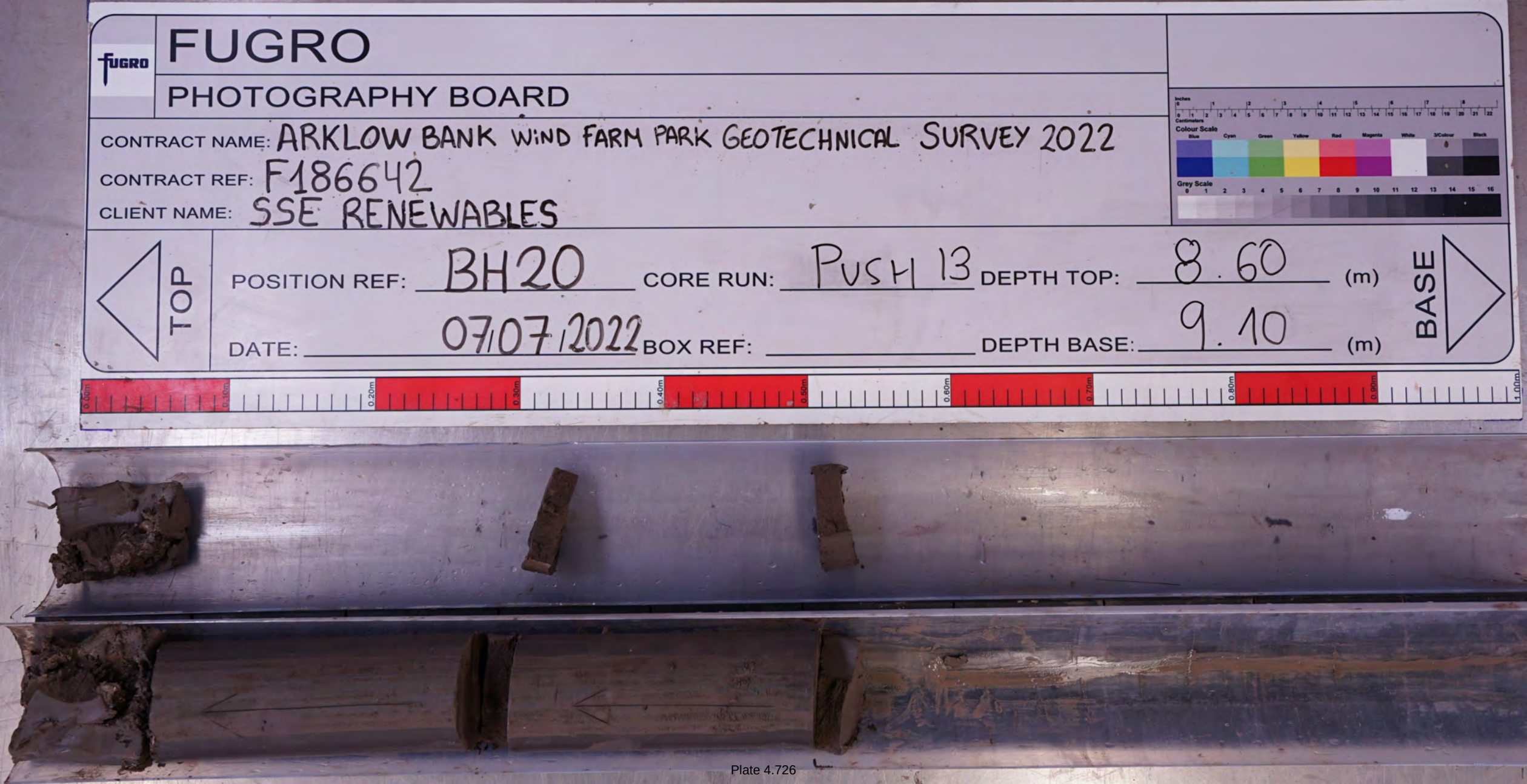
BASE



Plate 4.724


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 13
DEPTH TOP: 8.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 9.10 (m)
BASE

Plate 4.725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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 13
DEPTH TOP: 8.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 9.10 (m)
BASE

Plate 4.726

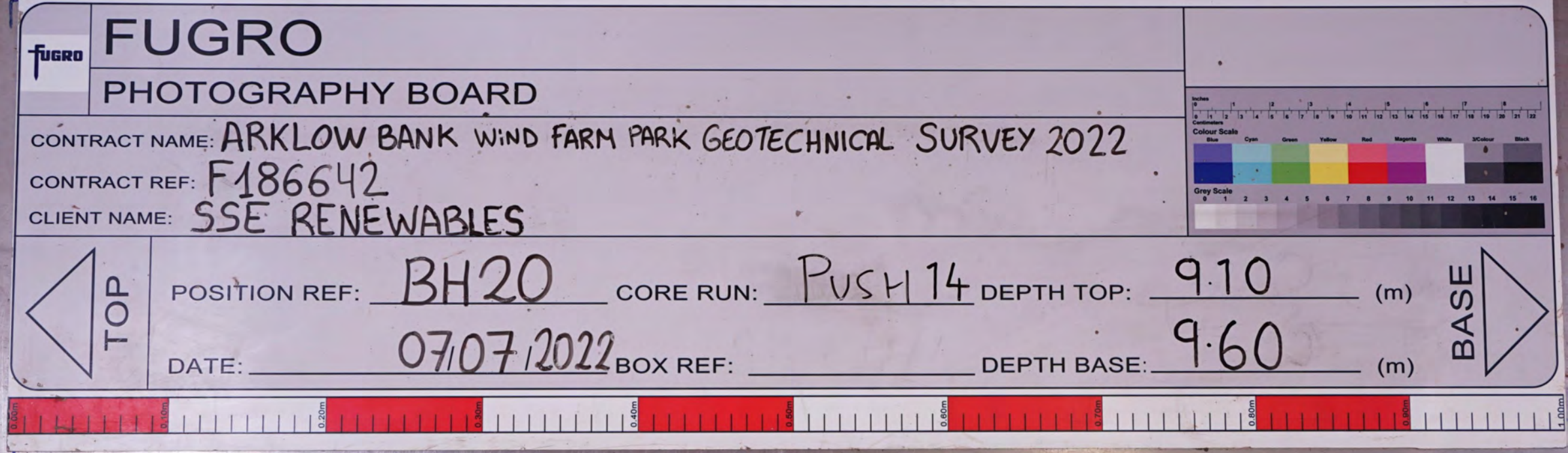
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 14
DEPTH TOP: 9.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 9.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.727

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 14 DEPTH TOP: 9.10 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 9.60 (m)

BASE



Plate 4.728

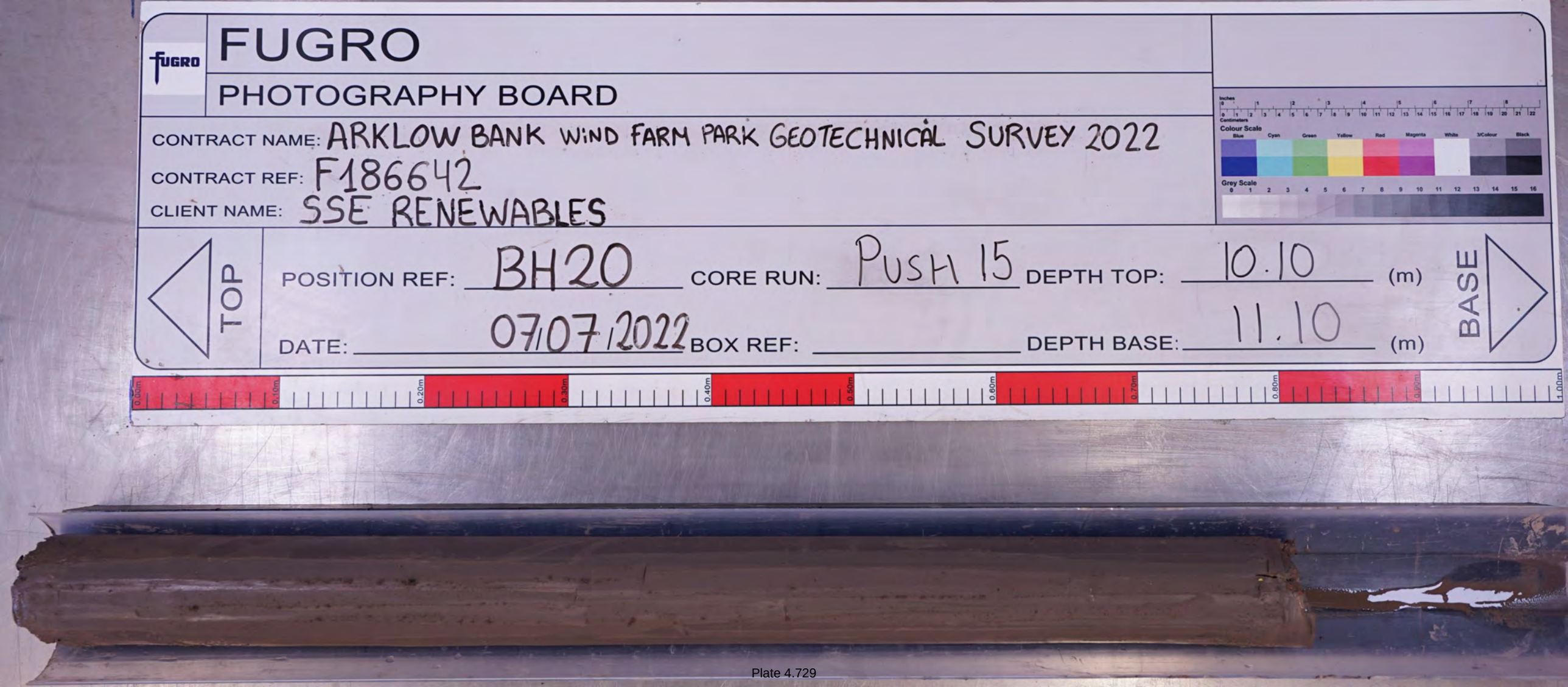
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 15
DEPTH TOP: 10.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 11.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.729

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 15 DEPTH TOP: 10.10 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 11.10 (m)

BASE



Plate 4.730

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 16 DEPTH TOP: 11.10 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 11.60 (m)

BASE

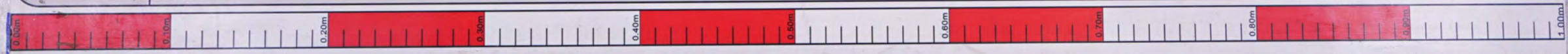



Plate 4.731


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 17
DEPTH TOP: 11.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 12.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.732

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 17 DEPTH TOP: 11.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 12.10 (m)

BASE



Plate 4.733

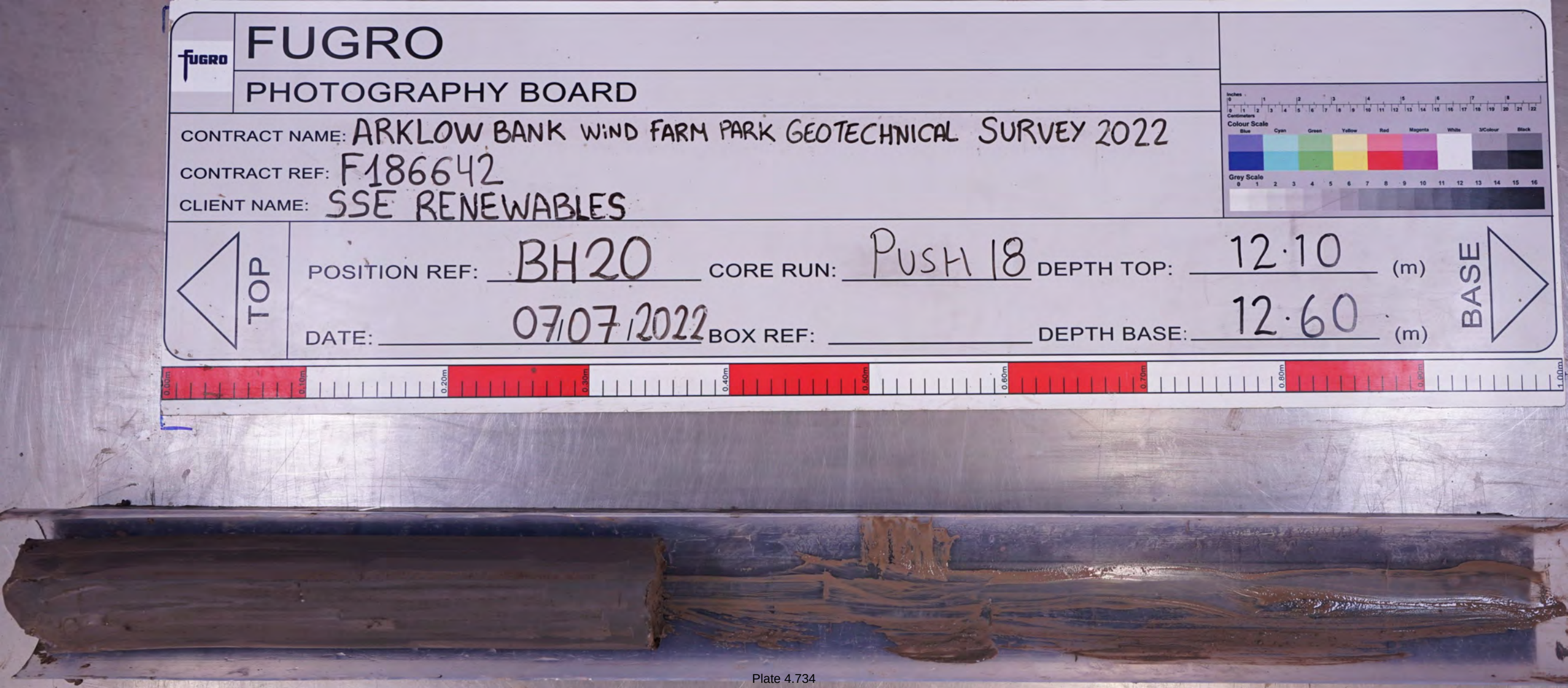
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 18
DEPTH TOP: 12·10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 12·60 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.734

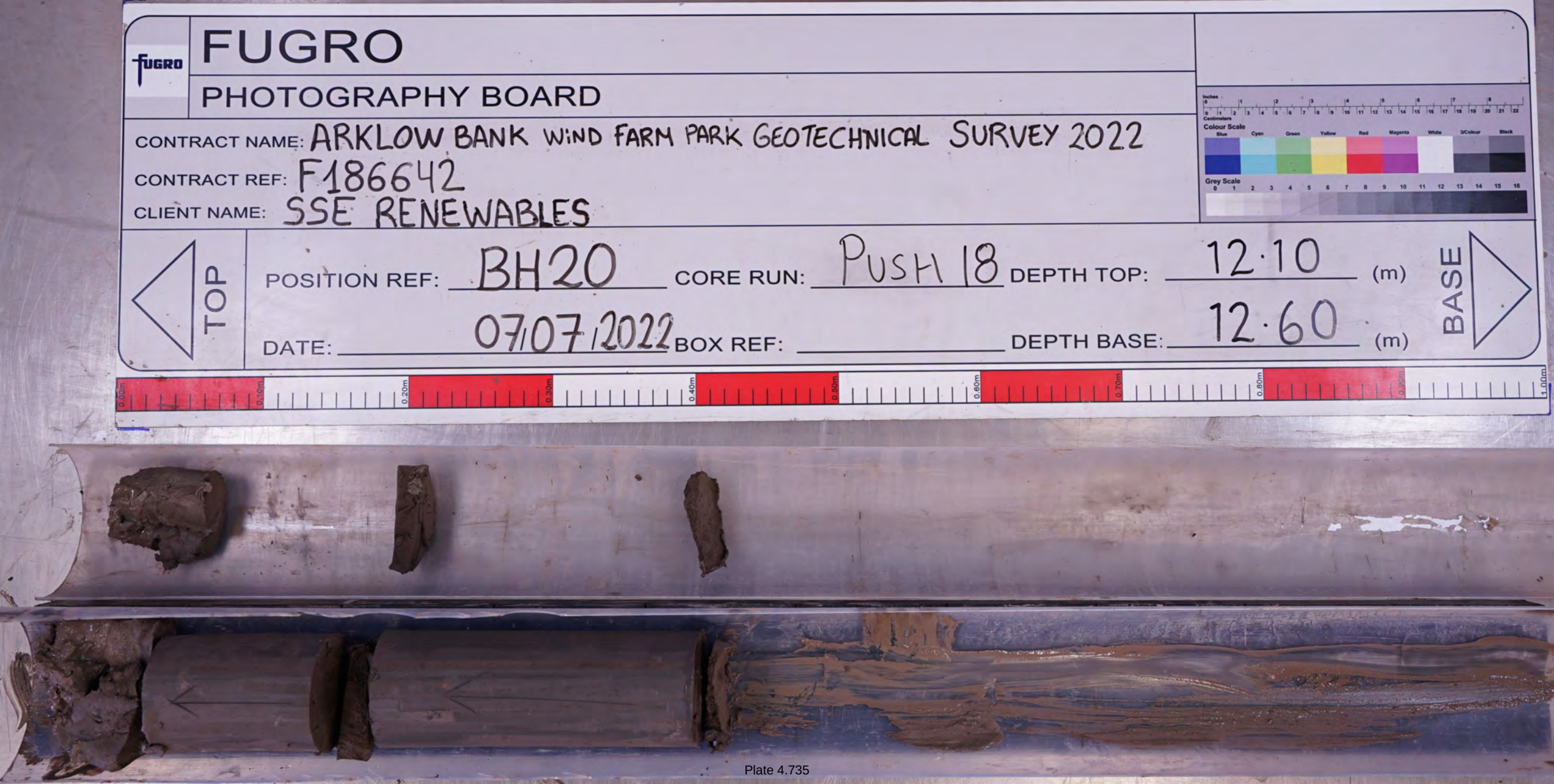
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 18
DEPTH TOP: 12.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 12.60 (m)
BASE

Plate 4.735

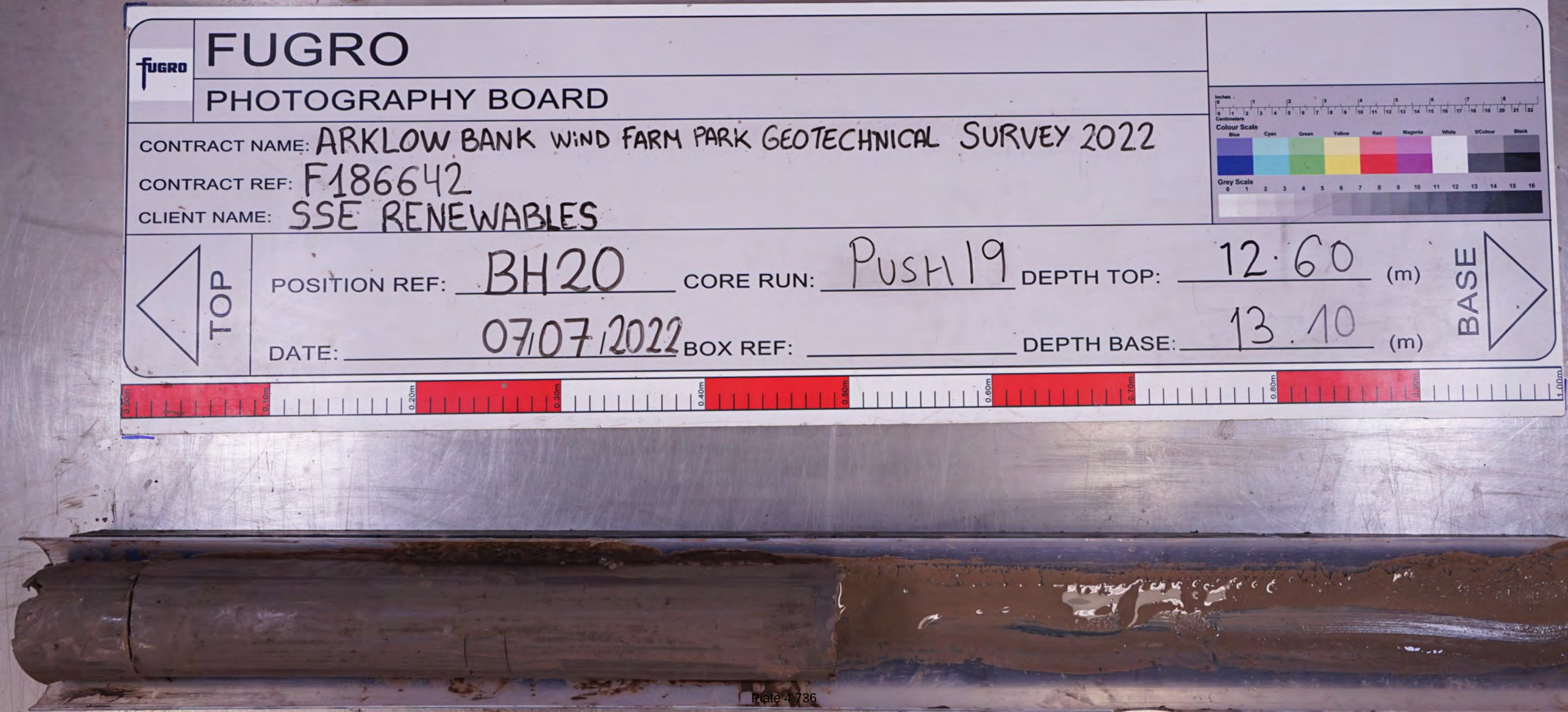
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 19
DEPTH TOP: 12.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 13.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.736

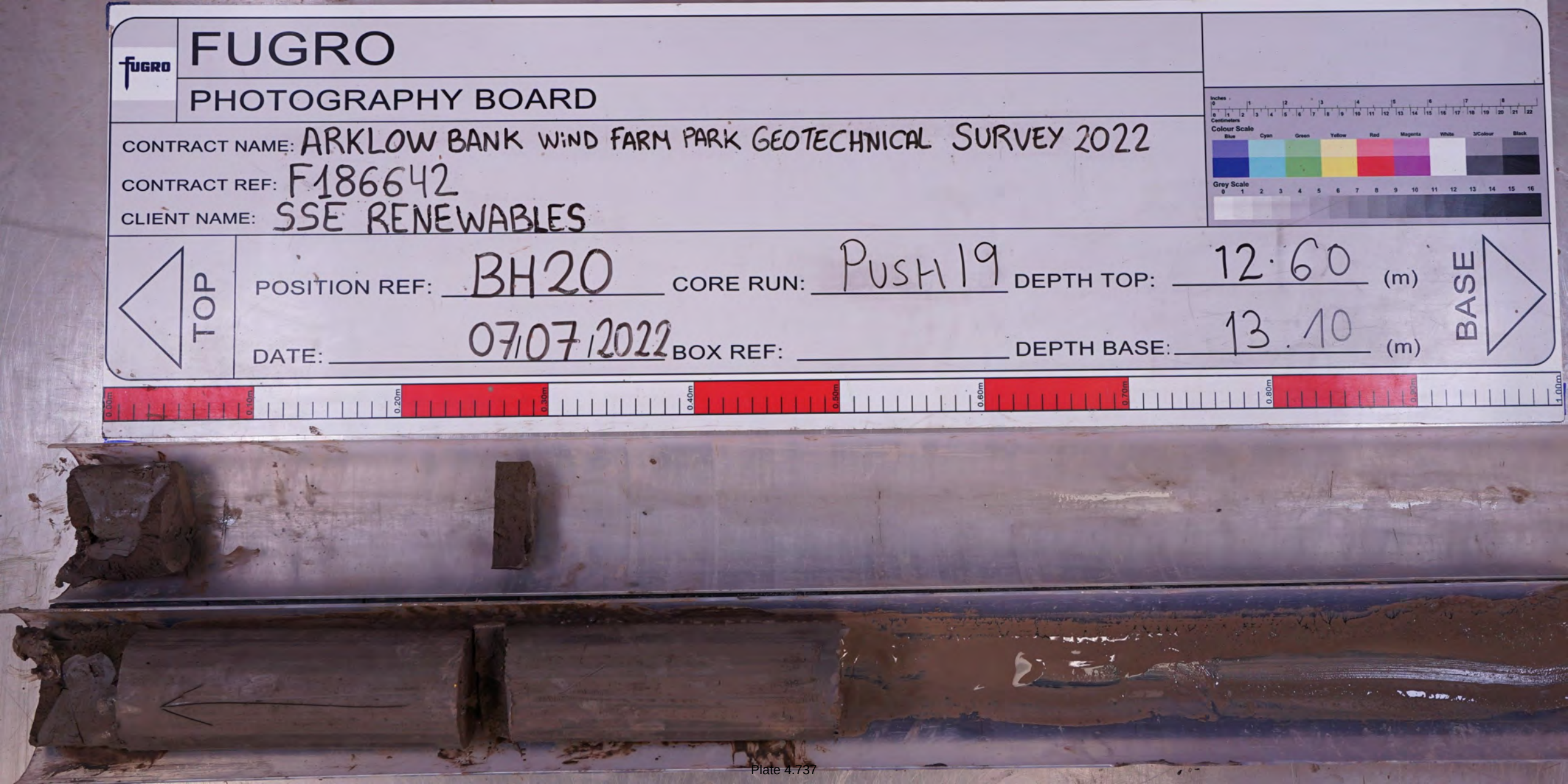
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 19
DEPTH TOP: 12.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 13.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.737

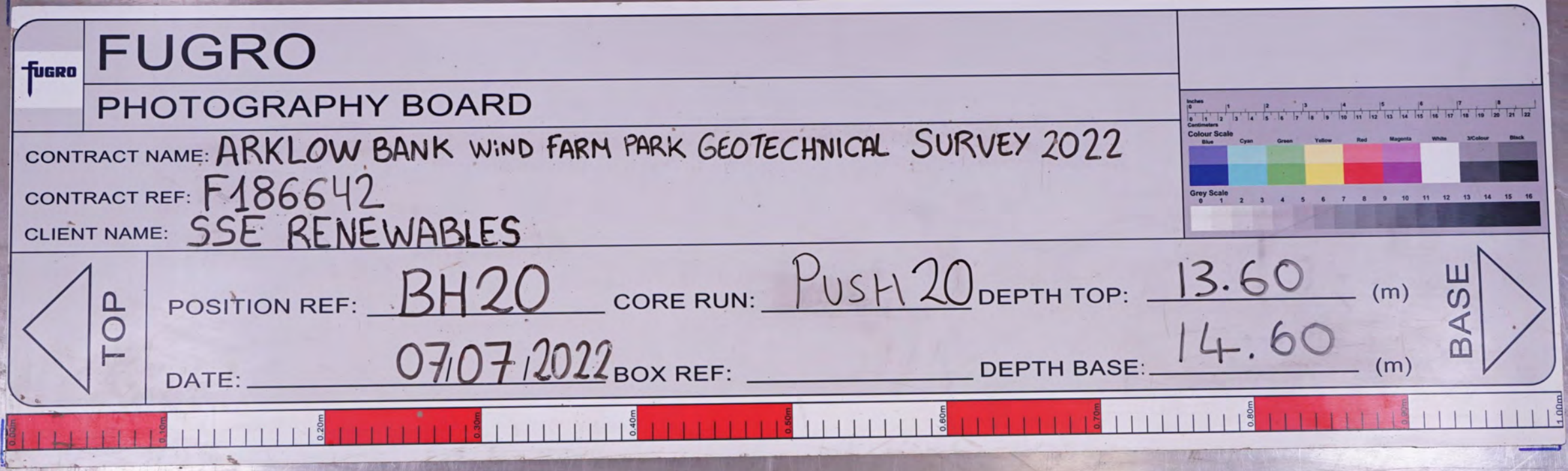
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 20
DEPTH TOP: 13.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 14.60 (m)
BASE

Plate 4.738

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 20 DEPTH TOP: 13.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 14.60 (m)

BASE



Plate 4.739

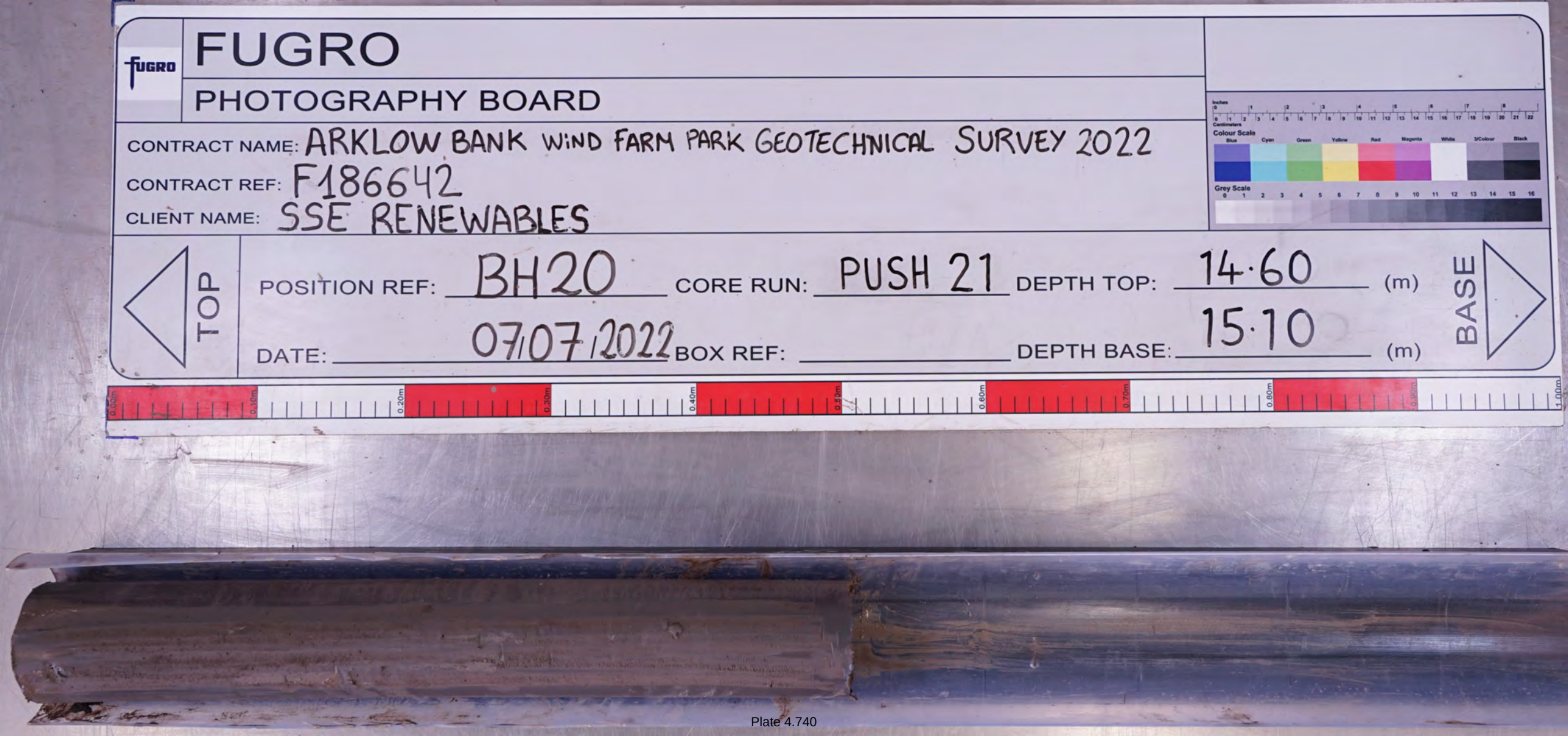
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 21
DEPTH TOP: 14.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 15.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.740


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 21
DEPTH TOP: 14·60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 15·10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.741

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 21 DEPTH TOP: 14·60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 15·10 (m)

BASE





Plate 4.742

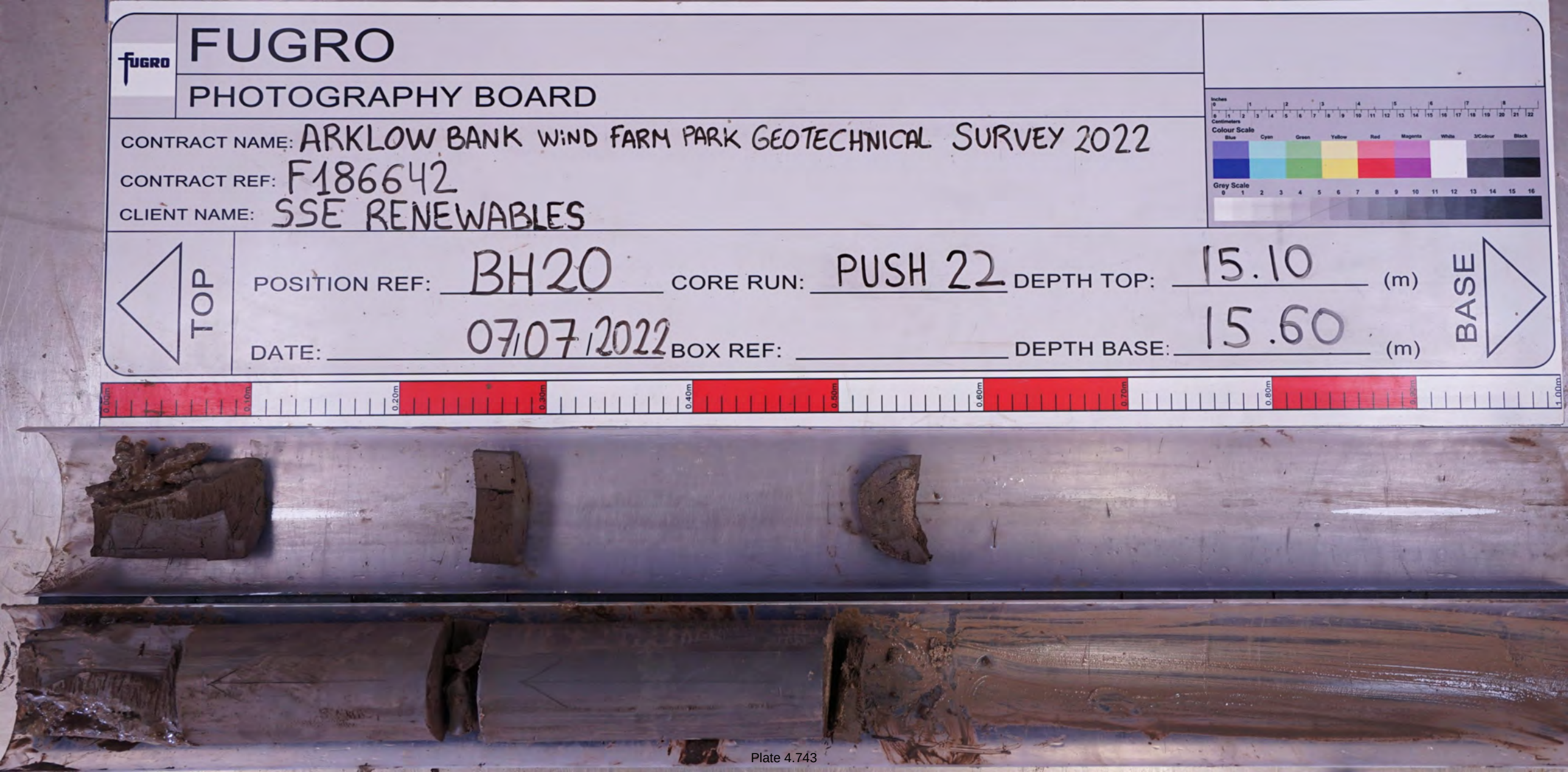
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 22
DEPTH TOP: 15.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 15.60 (m)
BASE
Colour Scale
Grey Scale

Plate 4.743

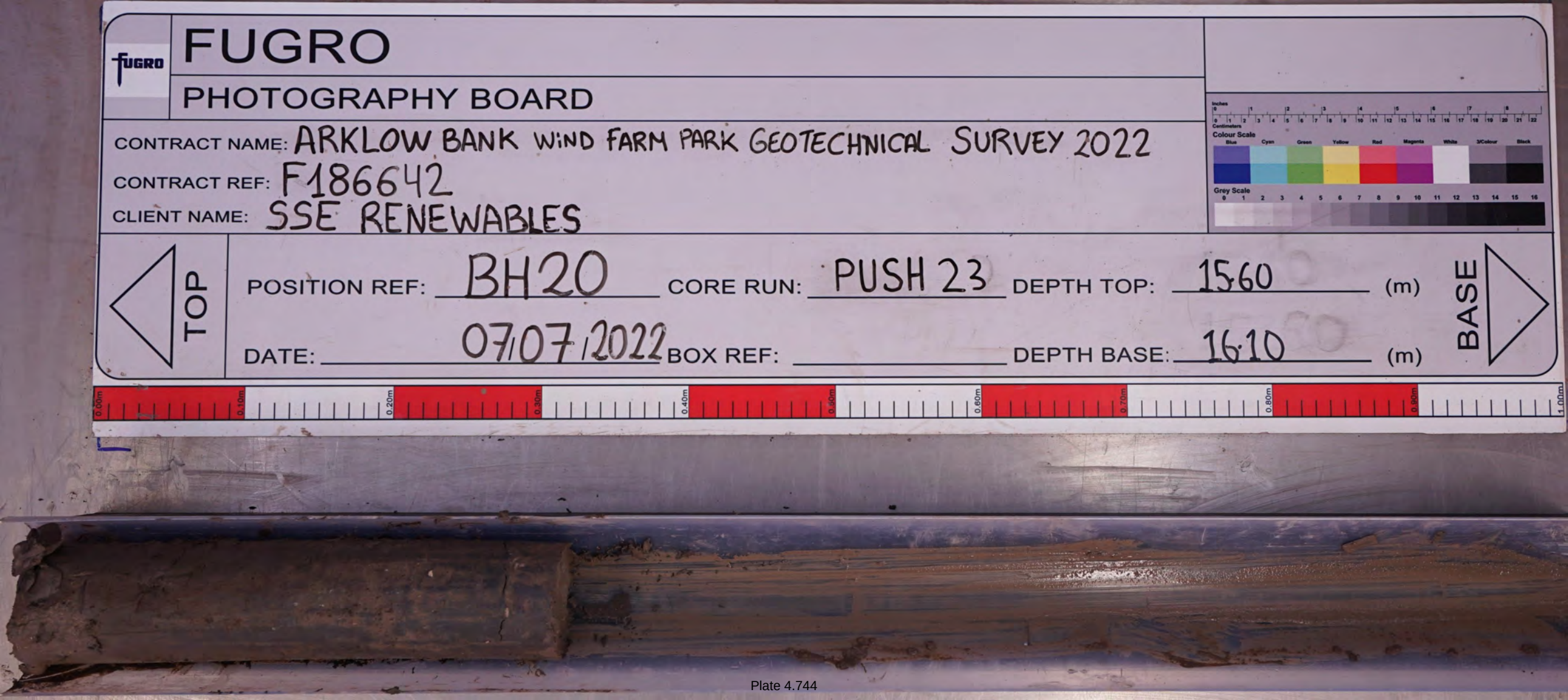
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 23
DEPTH TOP: 15.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 16.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.744

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 23 DEPTH TOP: 15.60 (m)

DATE: 07/07/2022 BOX REF: DEPTH BASE: 16.10 (m)

BASE

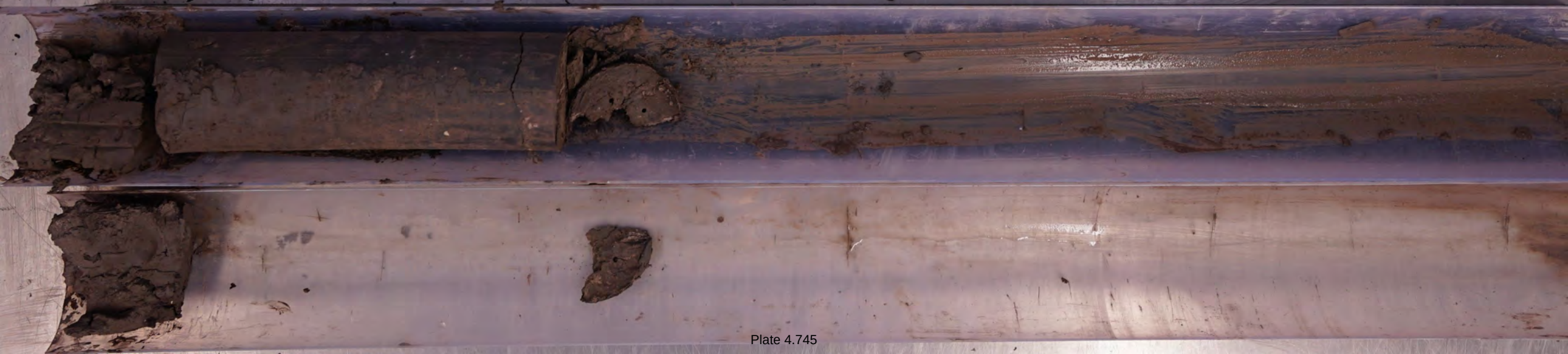

Plate 4.745

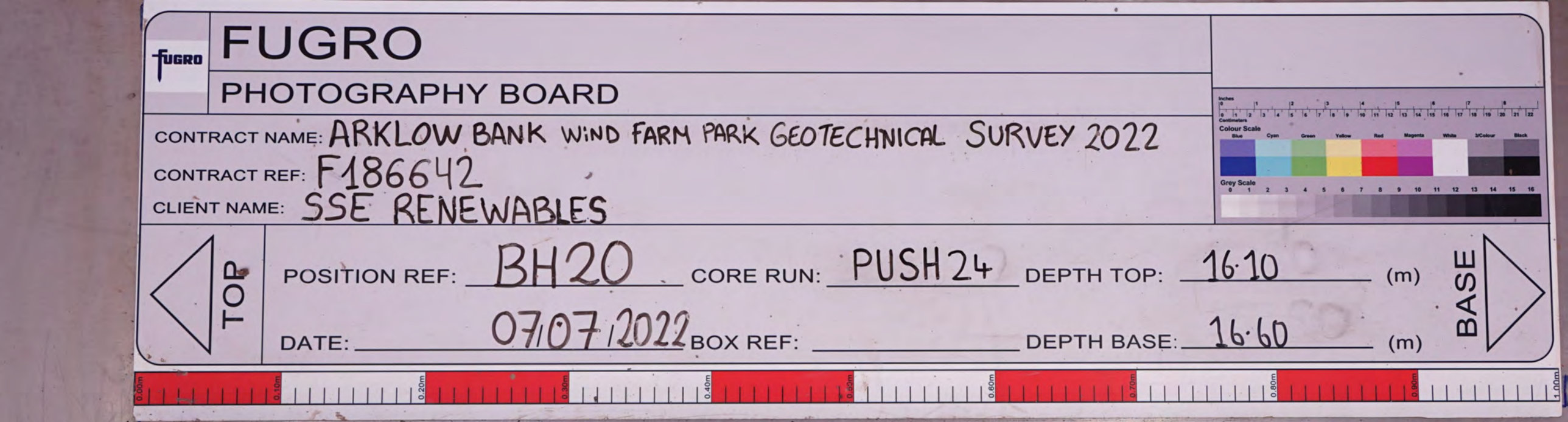
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 24
DEPTH TOP: 16.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 16.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.746


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 24
DEPTH TOP: 16.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 16.60 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.747

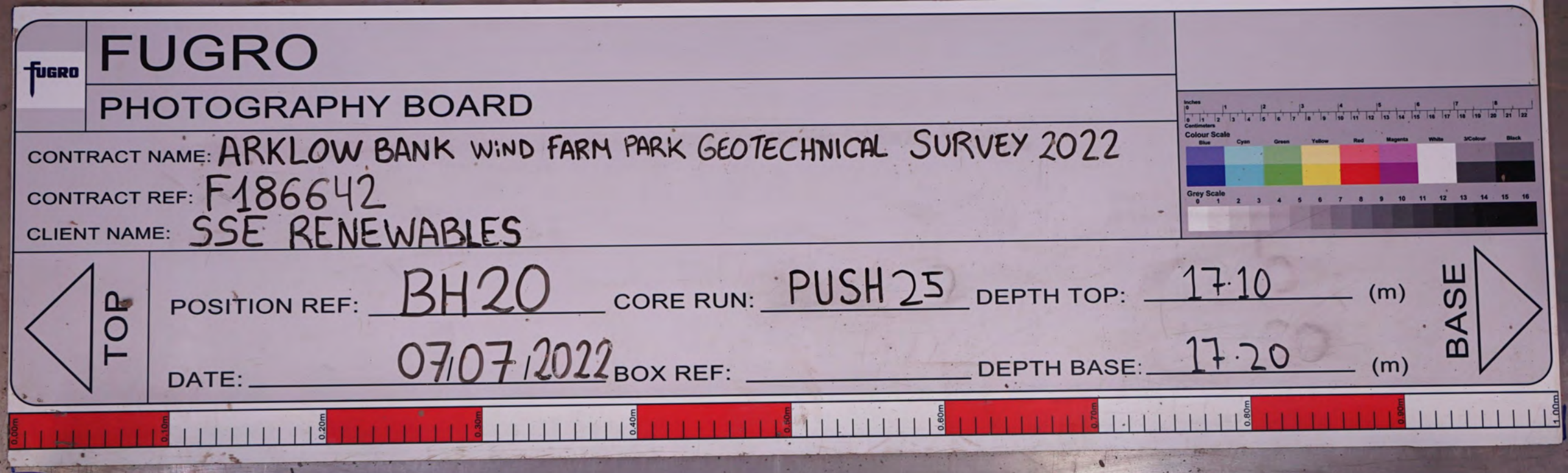
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 25
DEPTH TOP: 17.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 17.20 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.748

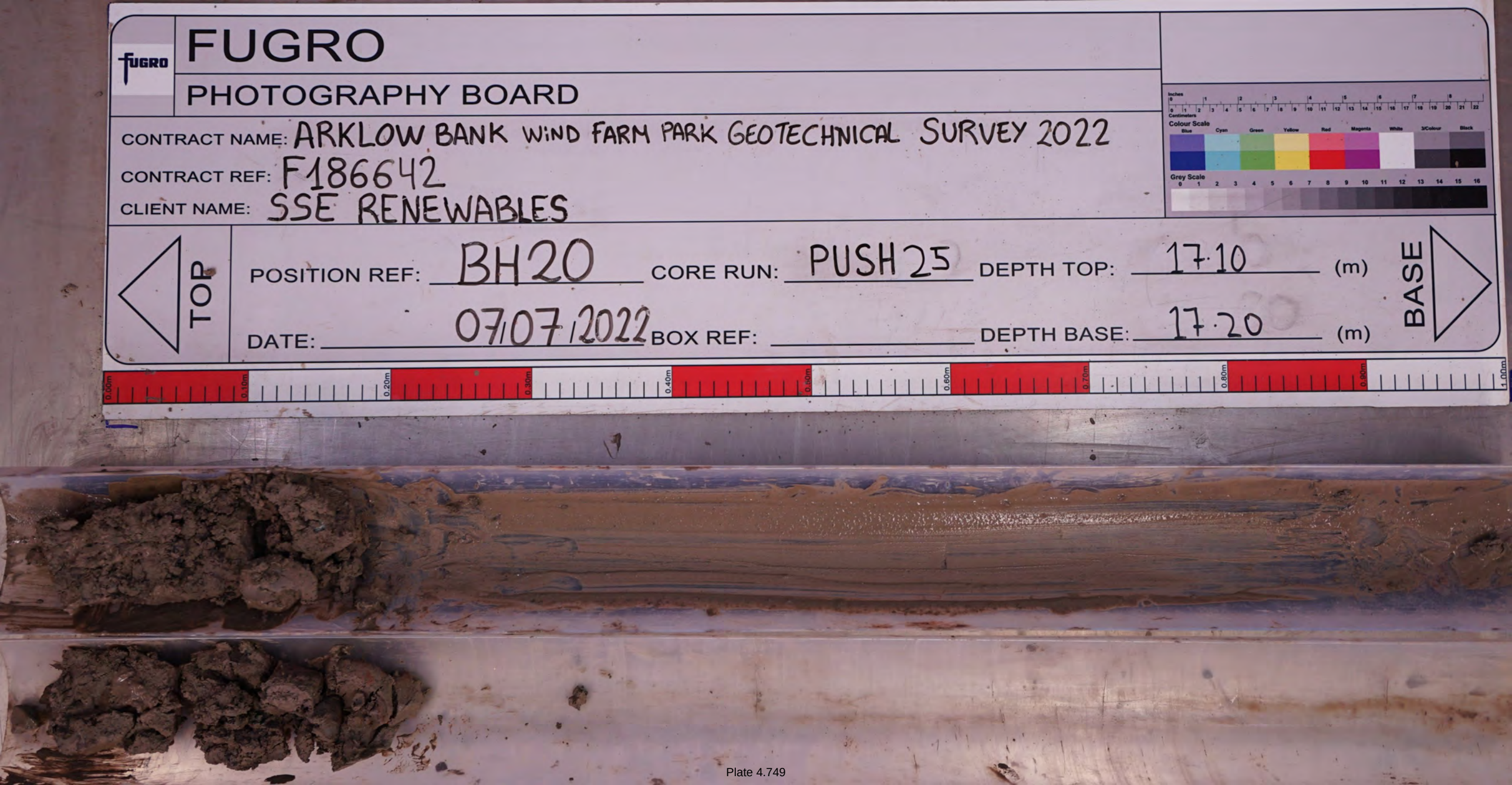
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 25
DEPTH TOP: 17.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 17.20 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.749

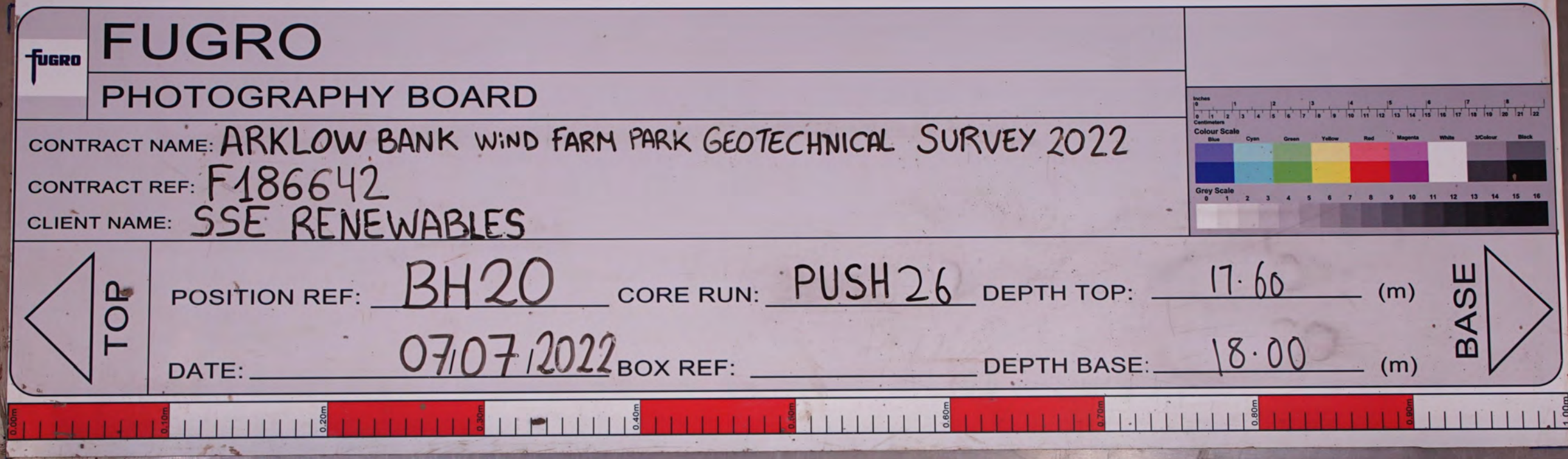
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH26
DEPTH TOP: 17.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.750


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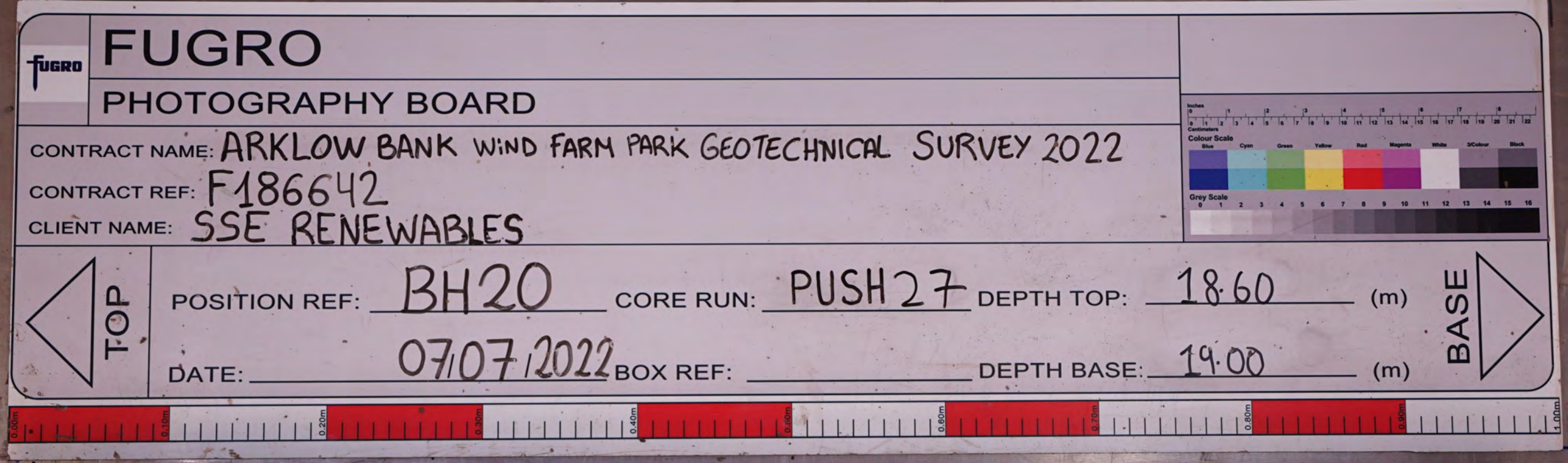
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 26
DEPTH TOP: 17.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 18.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.751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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH27
DEPTH TOP: 18.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 19.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.752

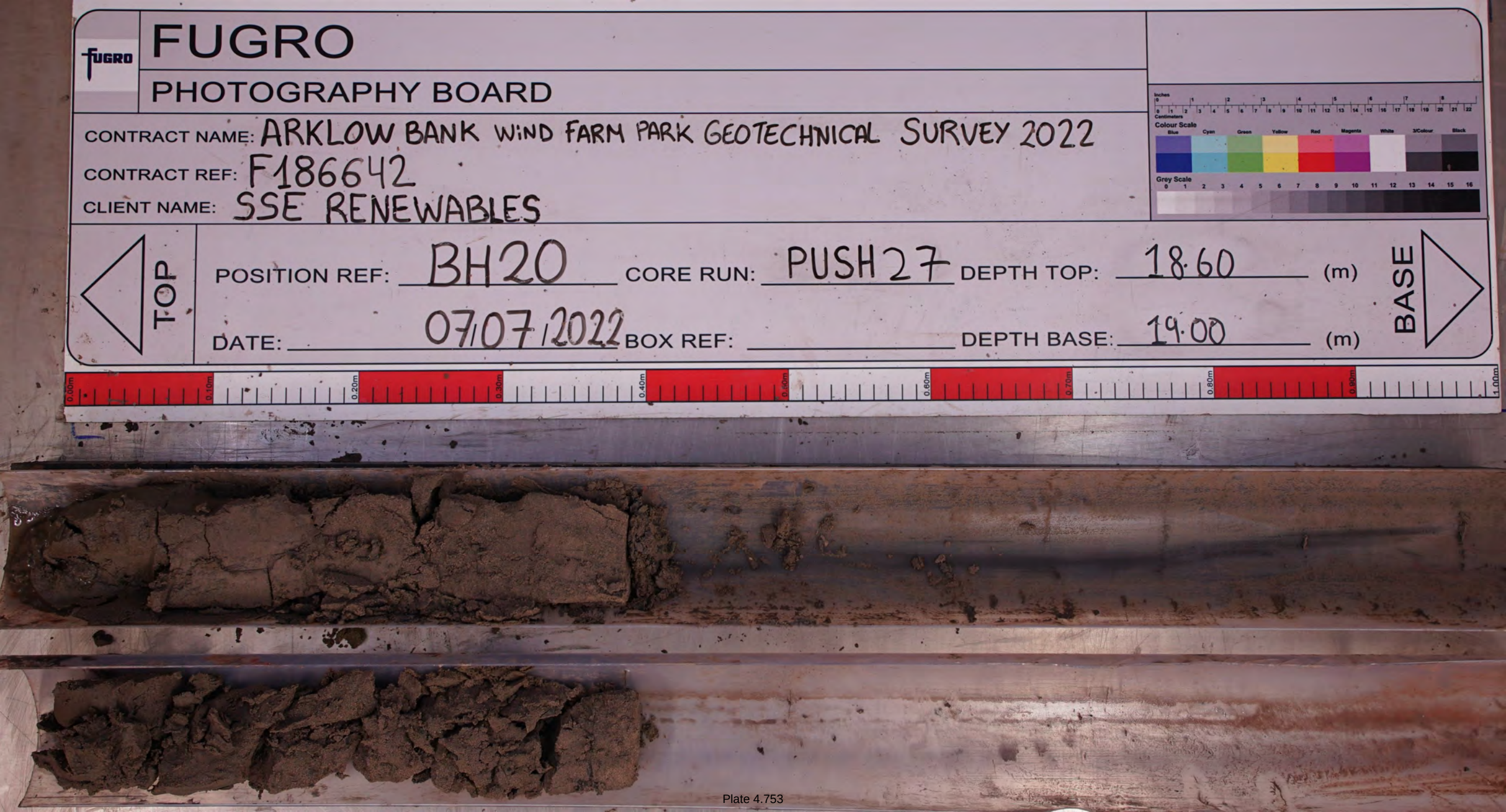

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH27
DEPTH TOP: 18.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 19.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.753

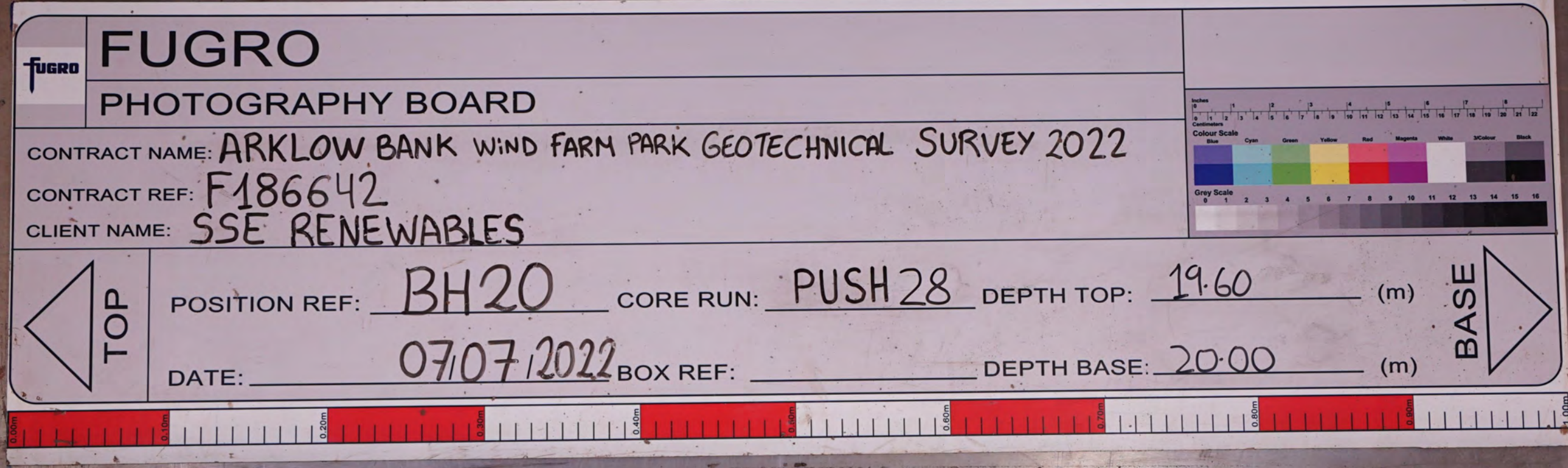

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 28
DEPTH TOP: 19.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.754

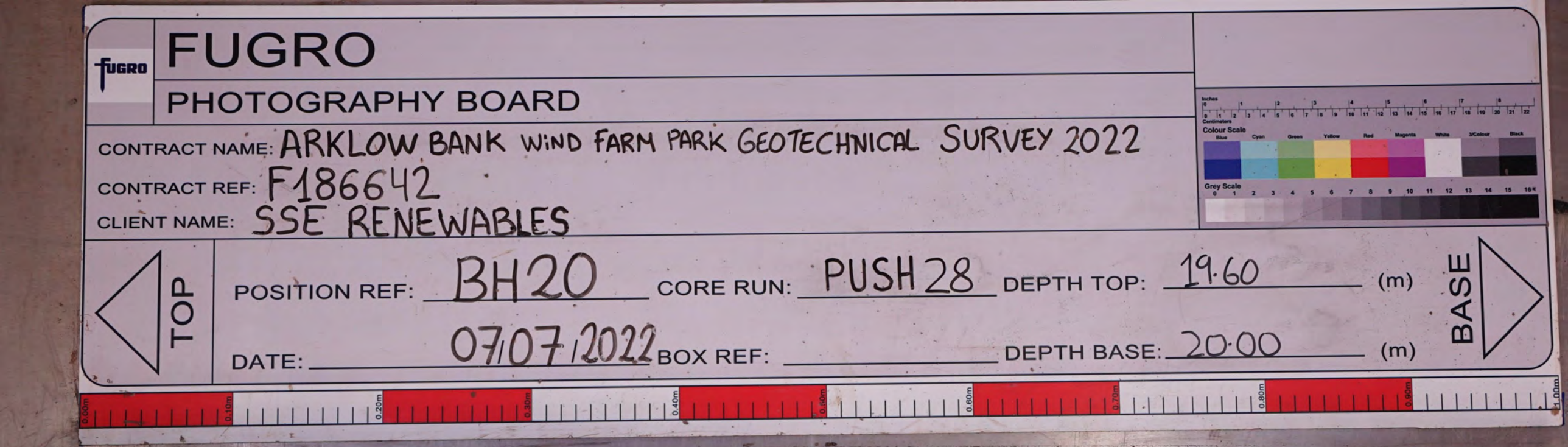

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 28
DEPTH TOP: 19.60 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 20.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.755

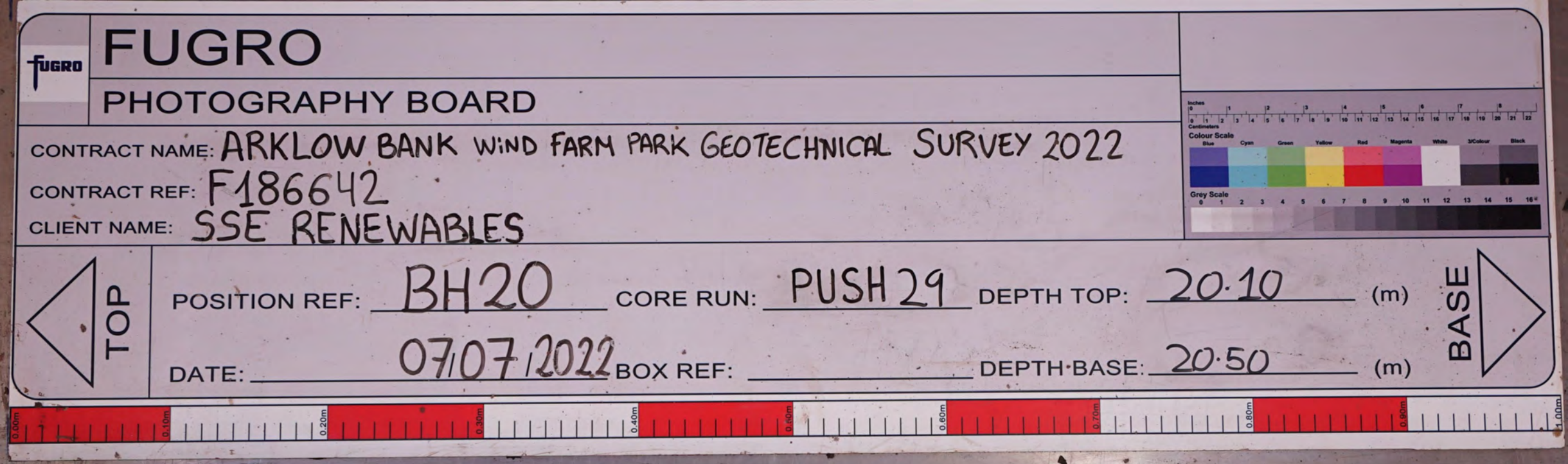

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 29
DEPTH TOP: 20.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 20.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.756

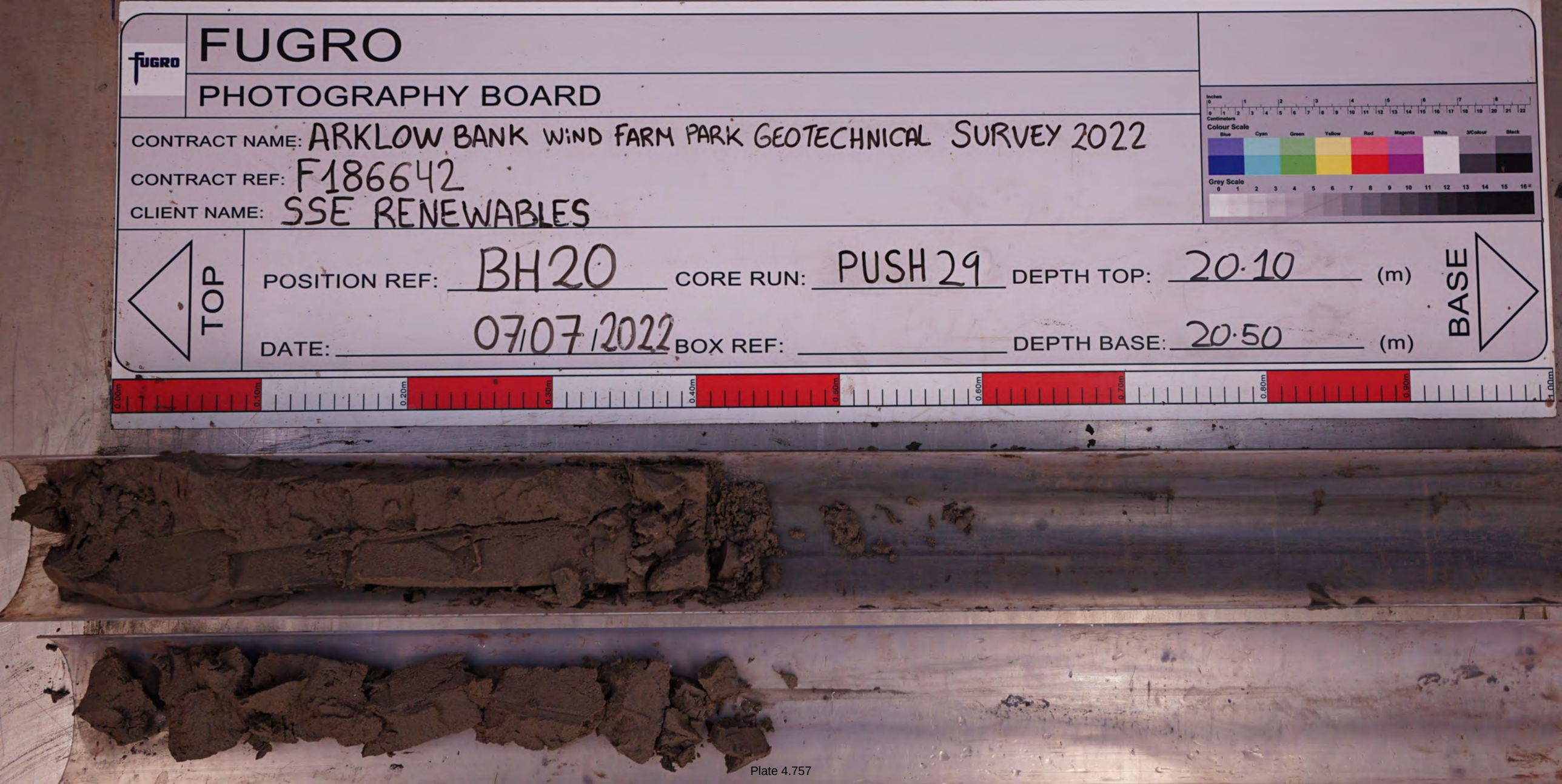
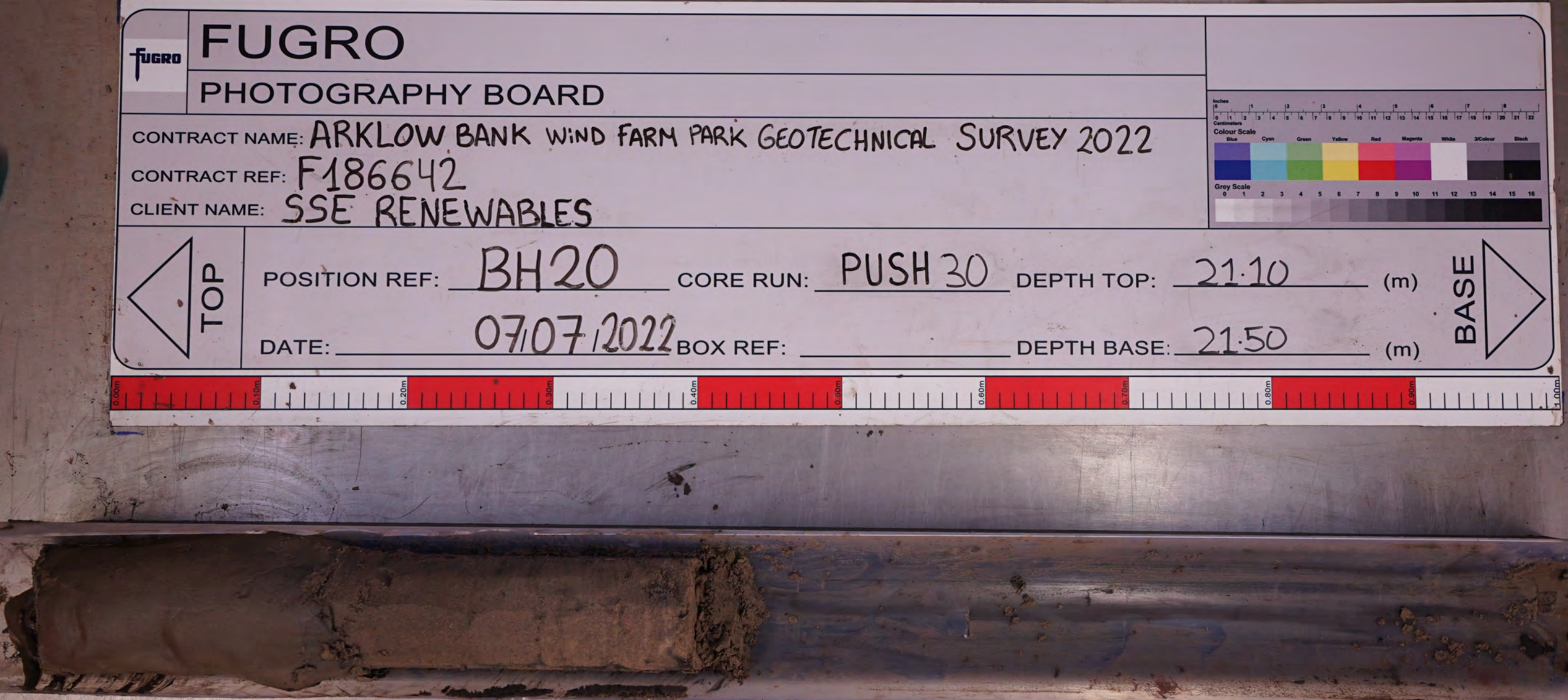

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 29
DEPTH TOP: 20.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 20.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.757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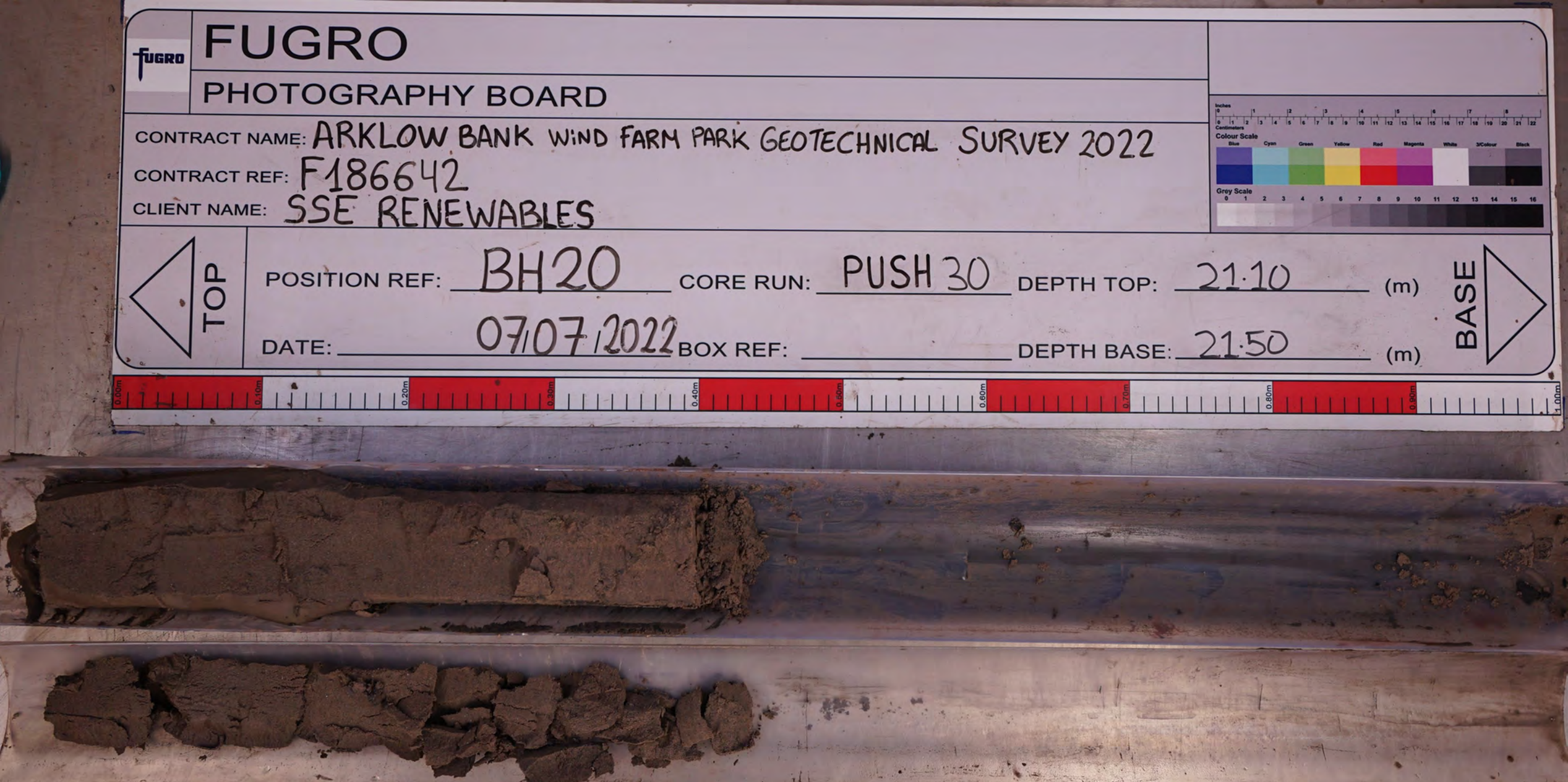
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 30
DEPTH TOP: 21.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.758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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 30
DEPTH TOP: 21.10 (m)
DATE: 07/07/2022
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.759

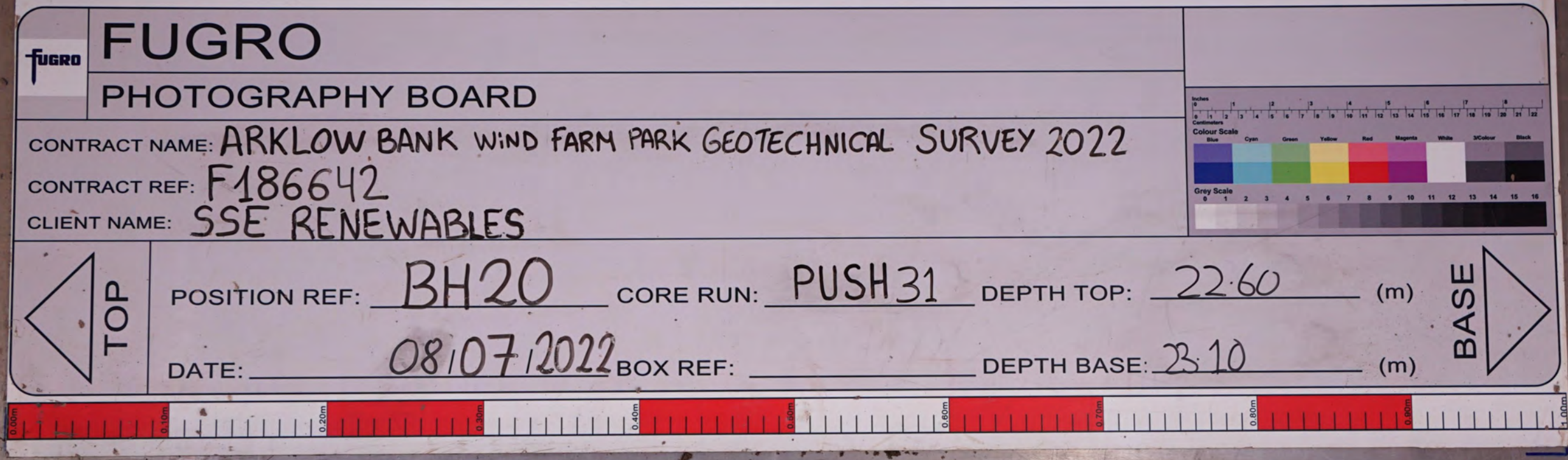

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH31
DEPTH TOP: 22.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 23.10 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.760

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH31 DEPTH TOP: 22.60 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 23.10 (m)

BASE



Plate 4.761


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH32
DEPTH TOP: 23.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.762

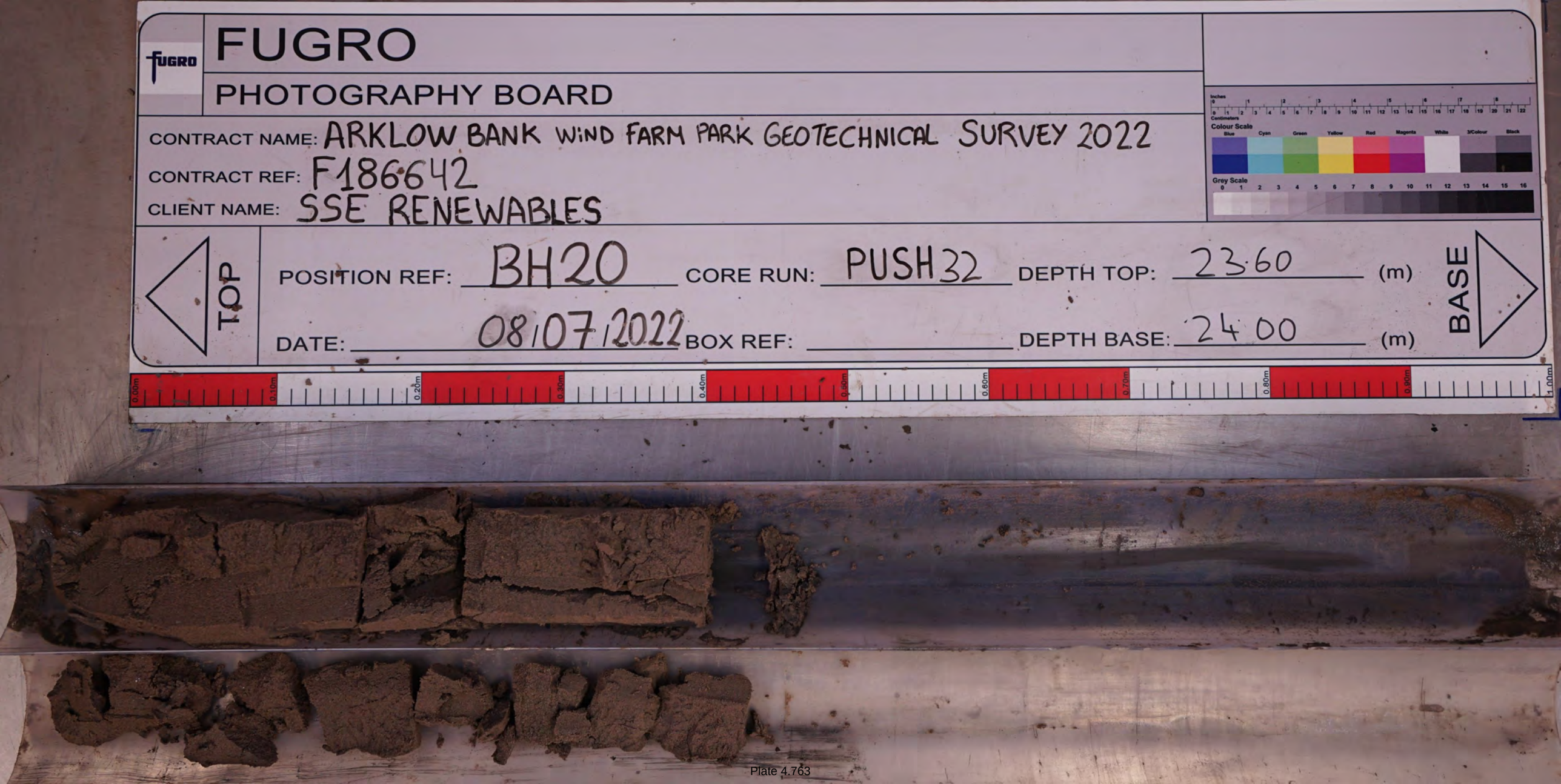
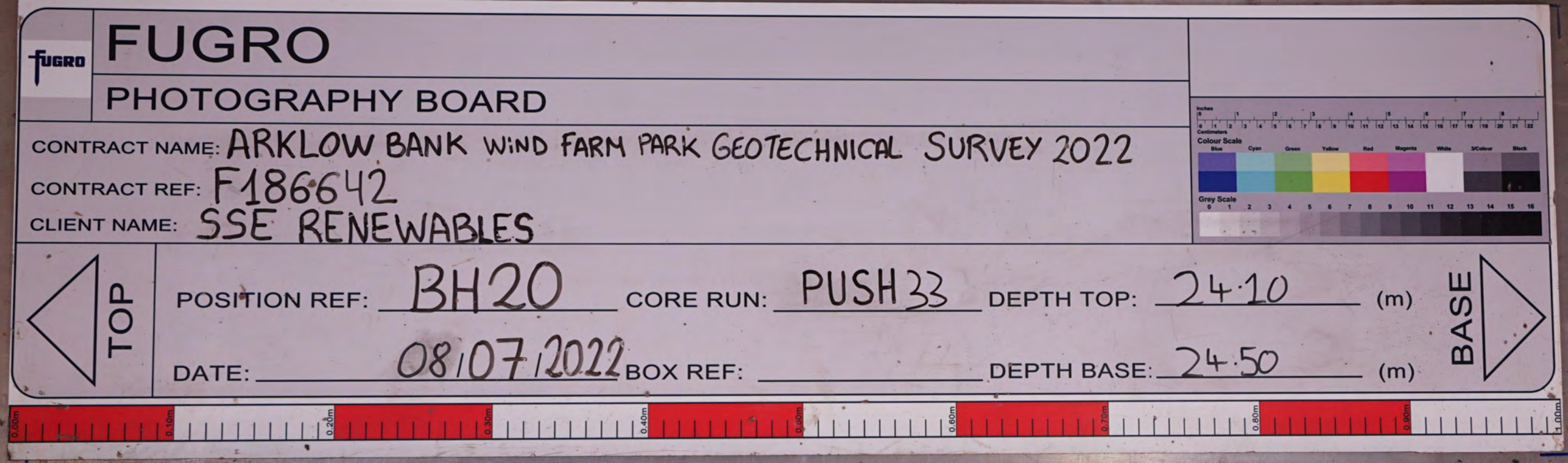

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH32
DEPTH TOP: 23.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.763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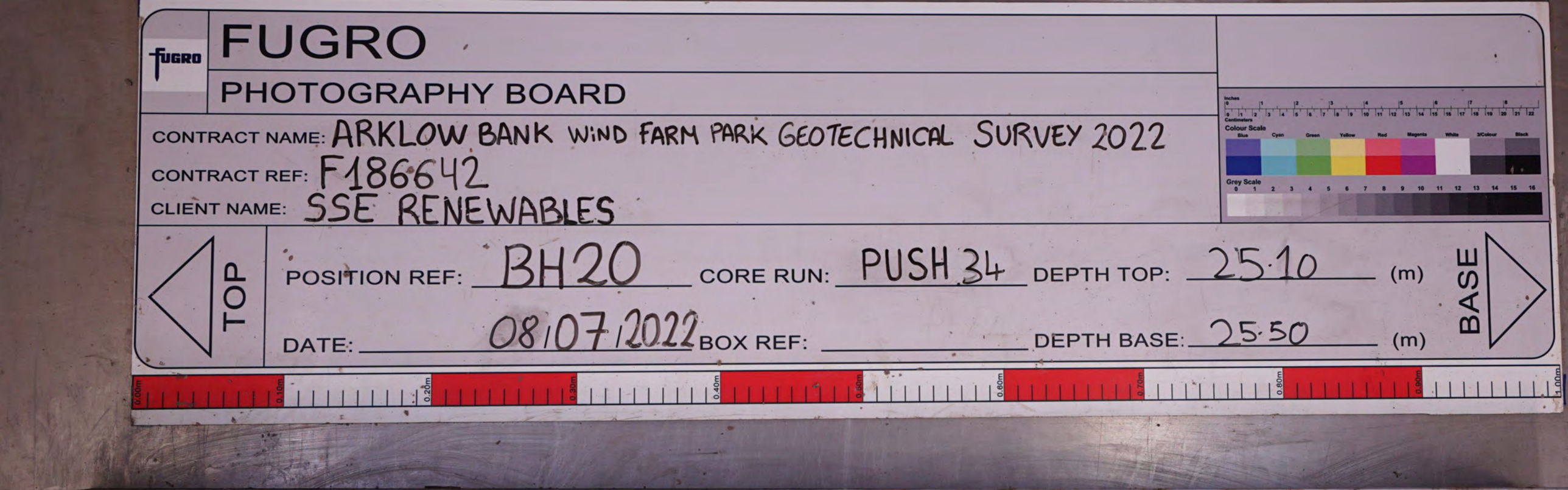
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 33
DEPTH TOP: 24.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.764


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 33
DEPTH TOP: 24.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.765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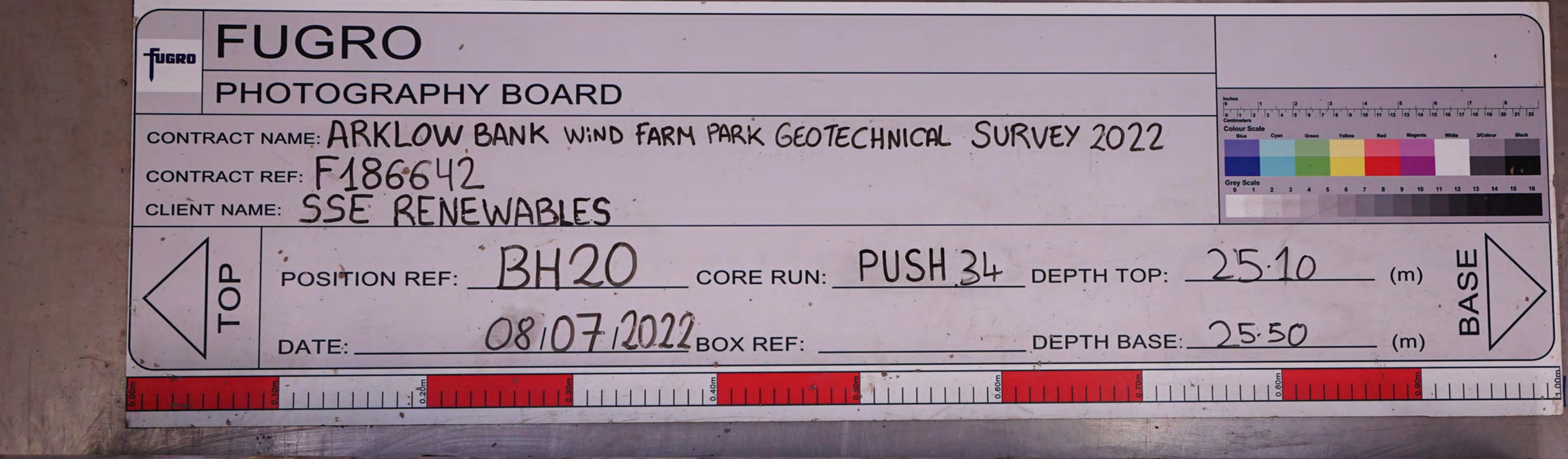
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 34
DEPTH TOP: 25.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.766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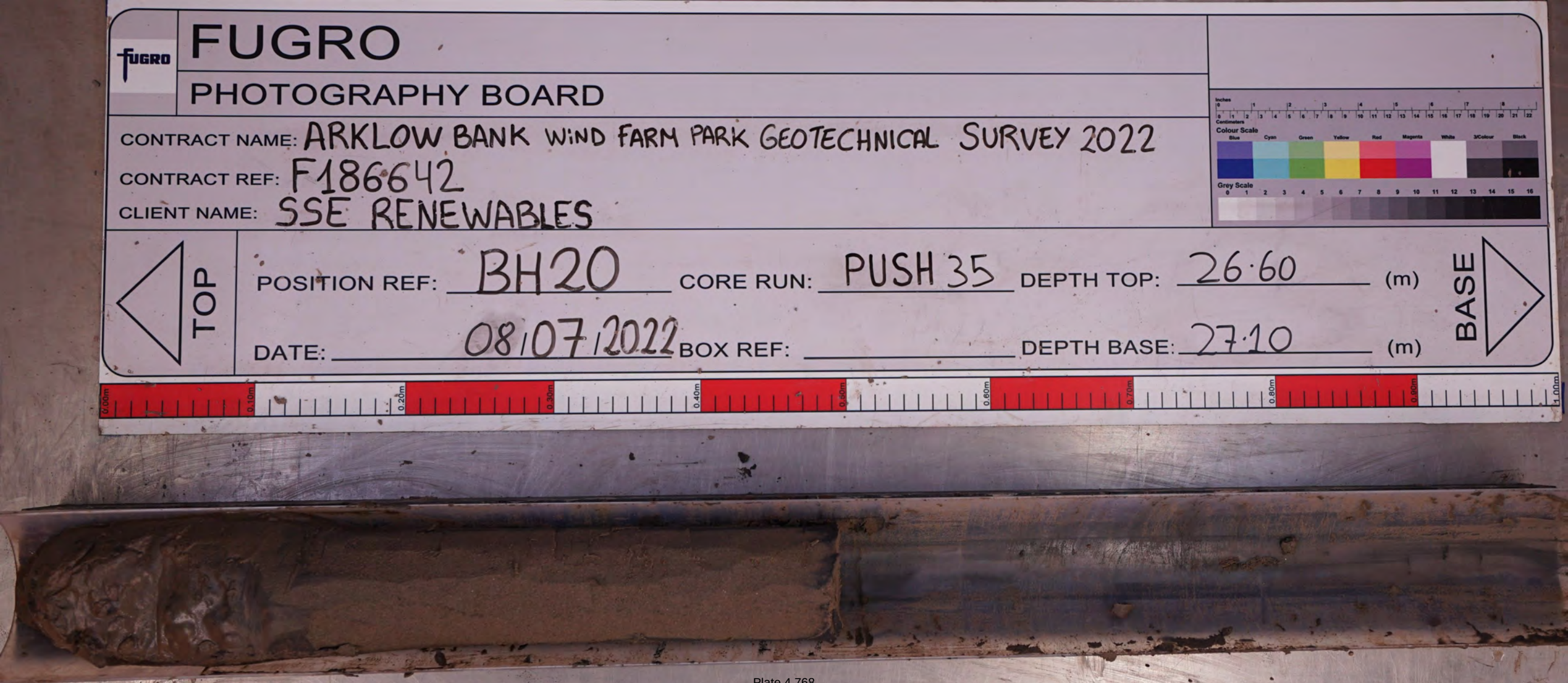
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 34
DEPTH TOP: 25.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE

Plate 4.767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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 35
DEPTH TOP: 26.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 27.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.768

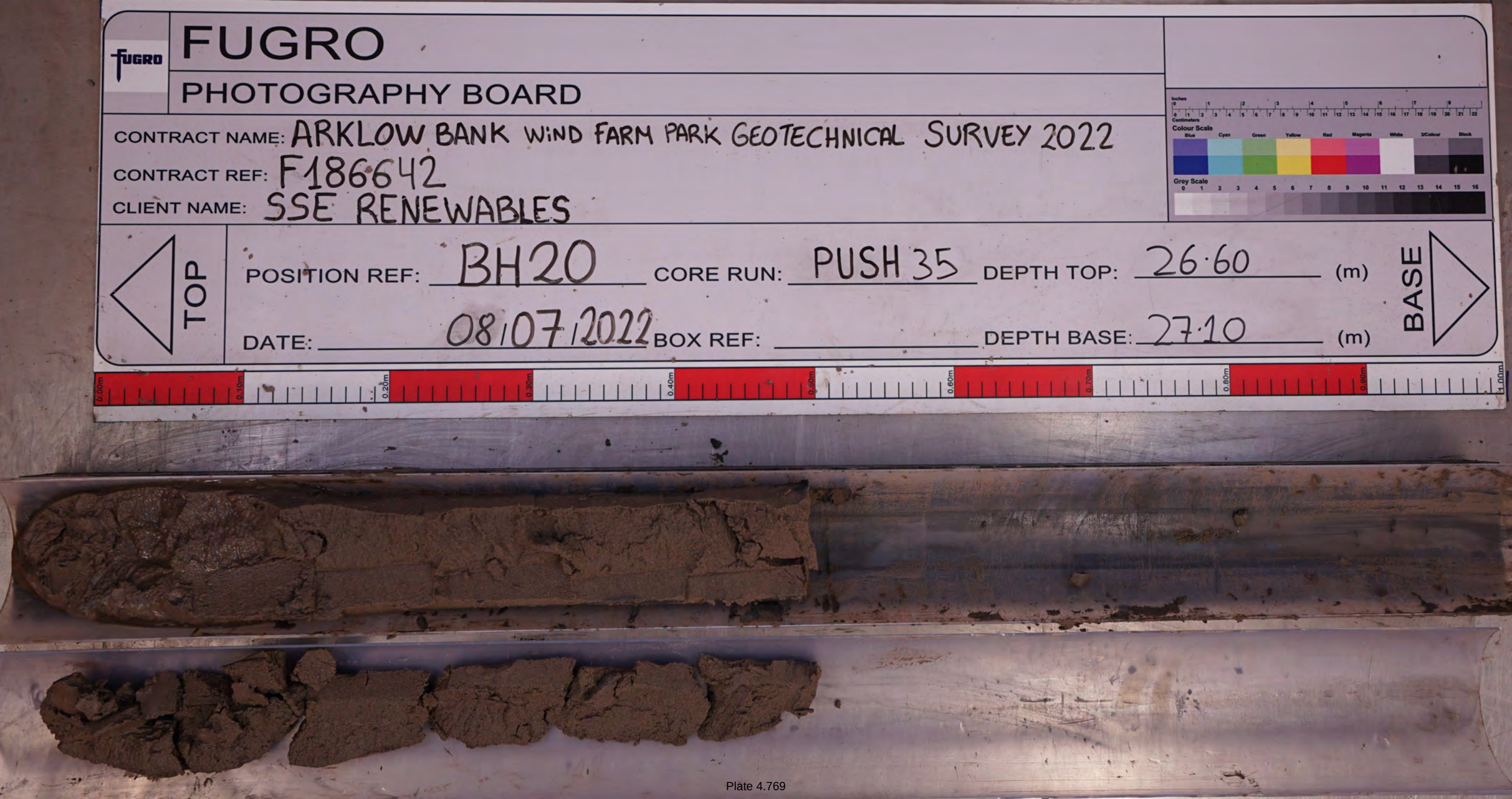
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 35
DEPTH TOP: 26.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 27.10 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.769

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH36 DEPTH TOP: 27.60 (m)

DATE: 08/07/2022 BOX REF: _____ DEPTH BASE: 28.00 (m)

BASE



Plate 4.770


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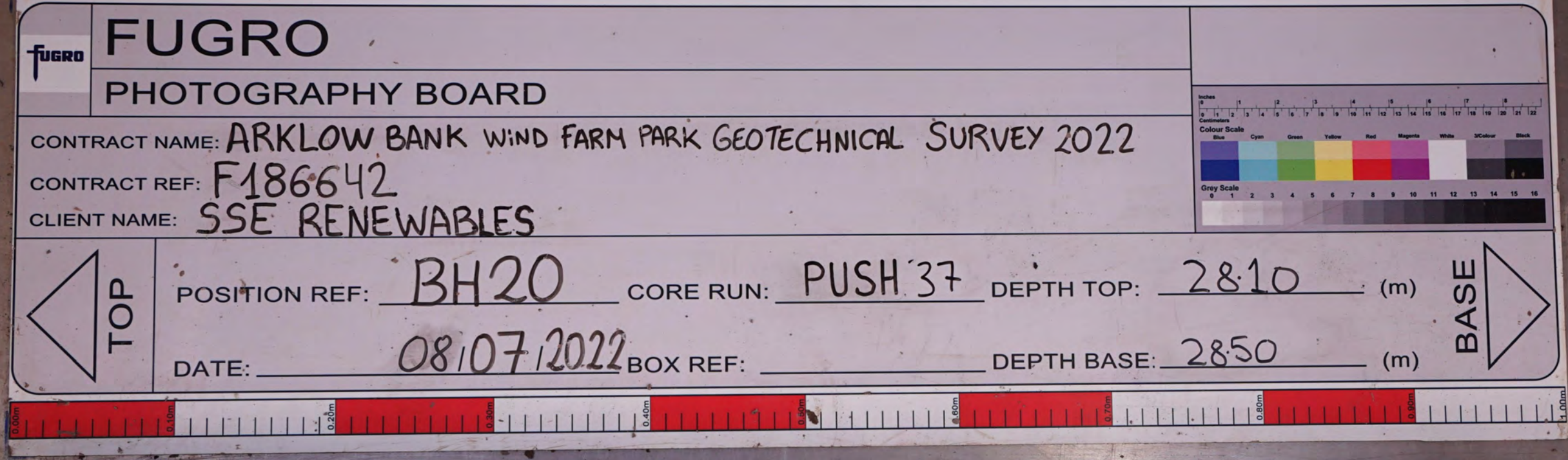
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH36
DEPTH TOP: 27.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 28.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.771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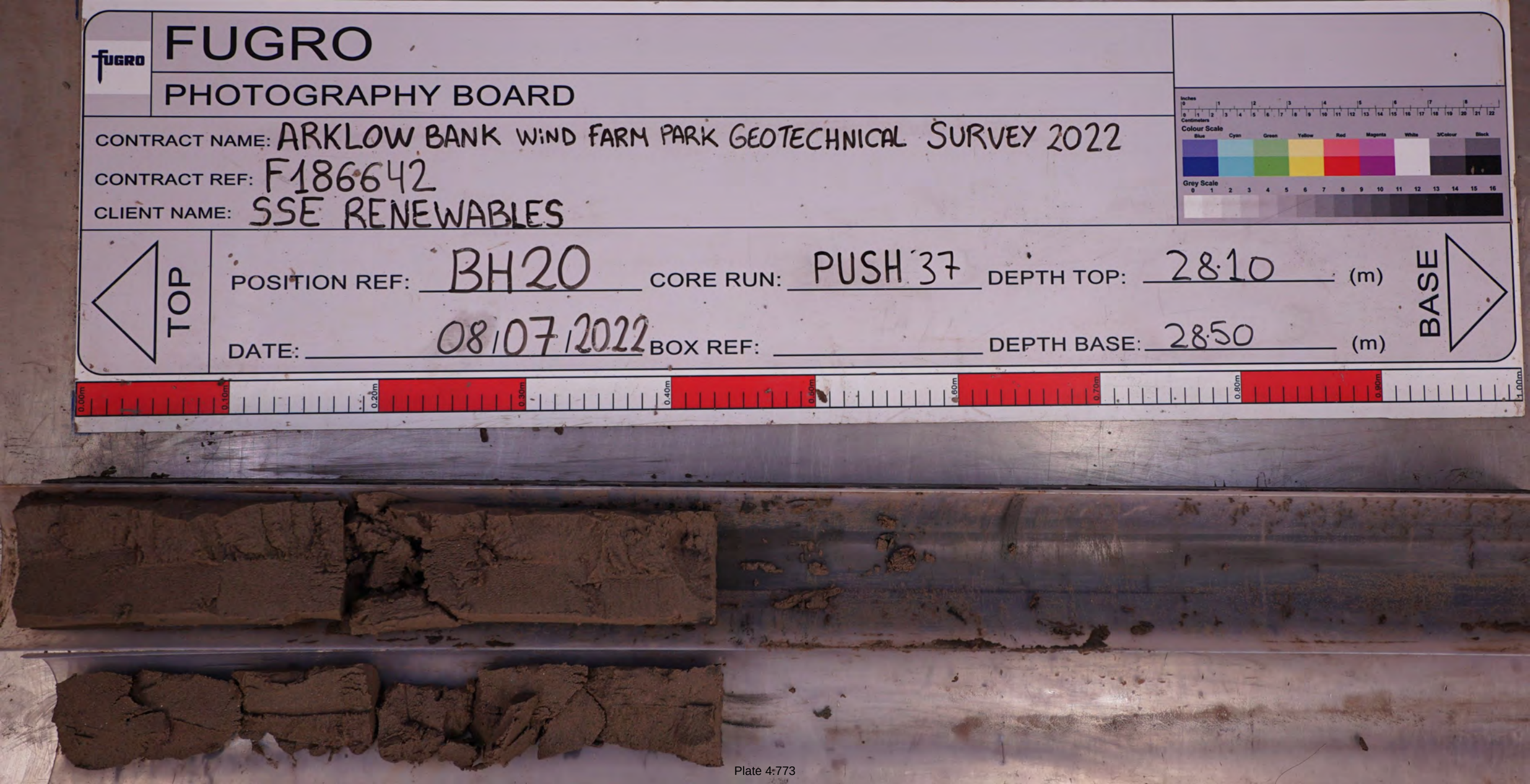
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 37
DEPTH TOP: 28.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.772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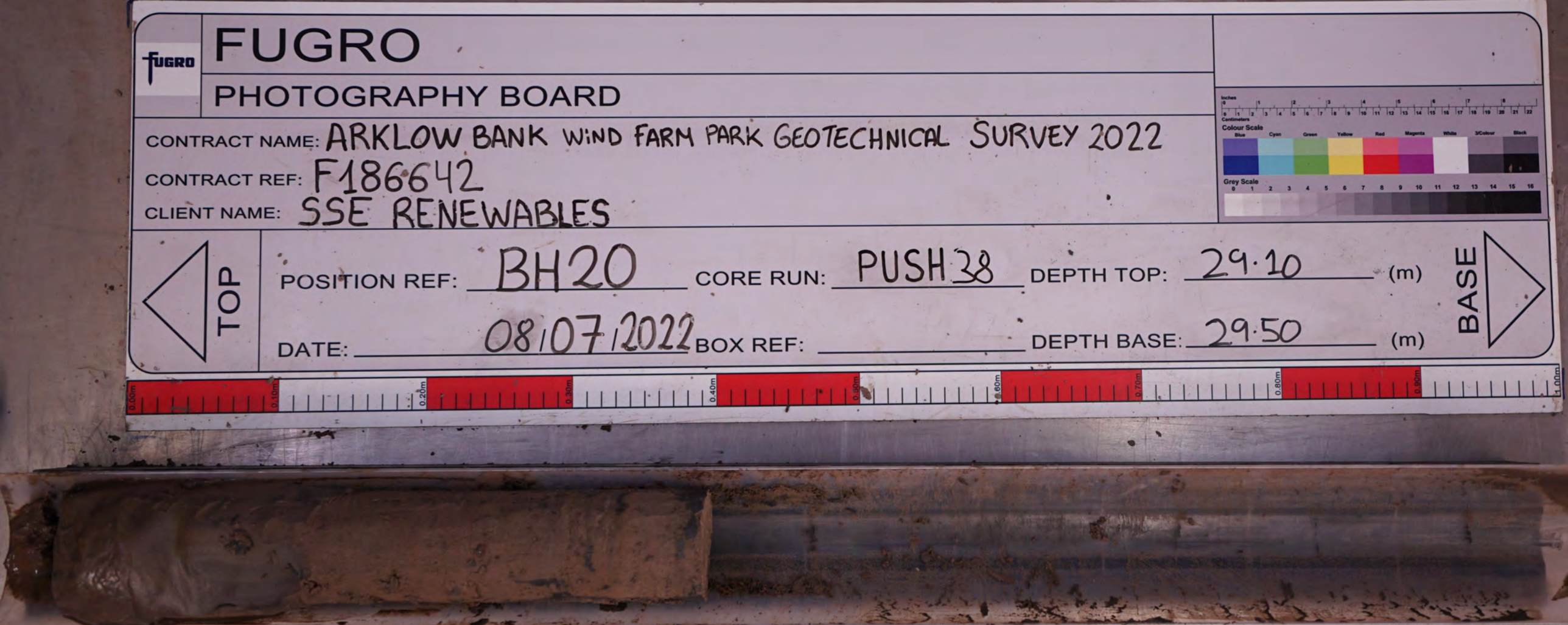
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 37
DEPTH TOP: 2810 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 2850 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4:773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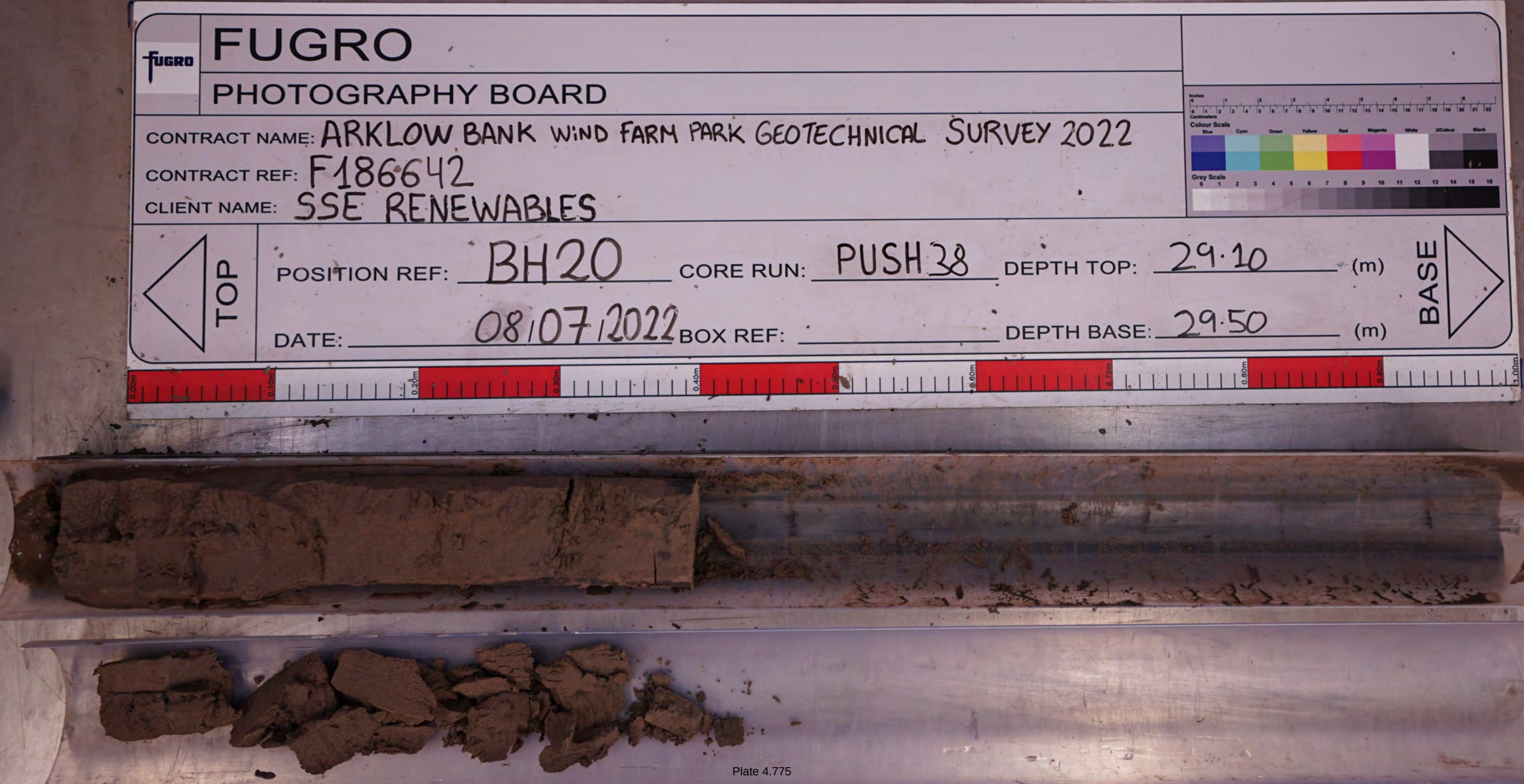
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 38
DEPTH TOP: 29.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.774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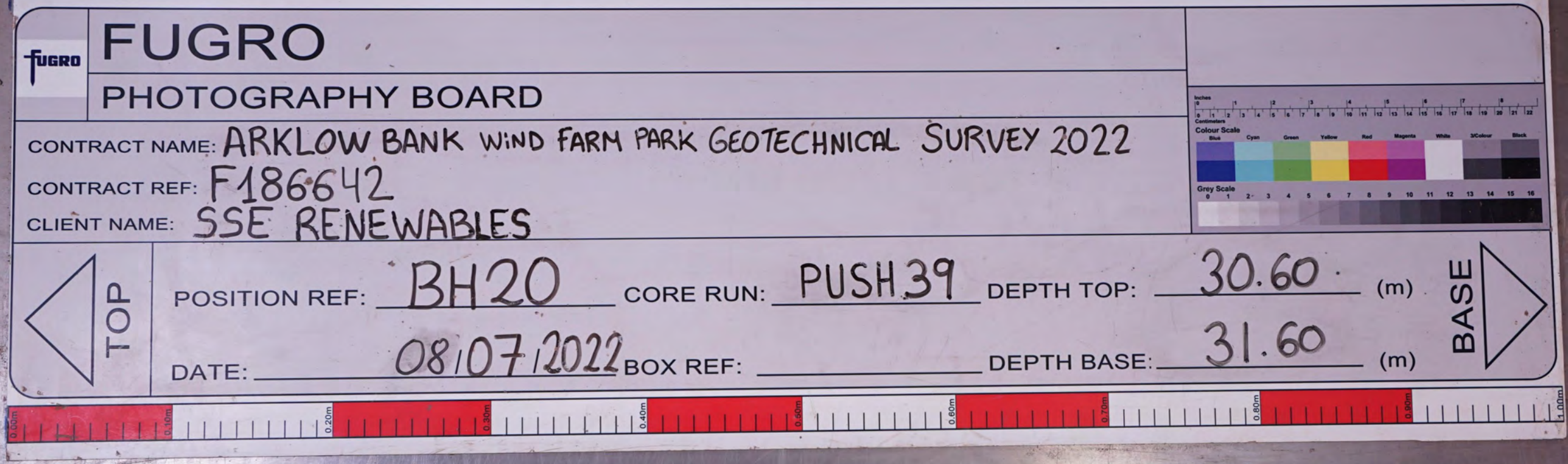
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 38
DEPTH TOP: 29.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 29.50 (m)
BASE

Plate 4.775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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 39
DEPTH TOP: 30.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 31.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.776

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

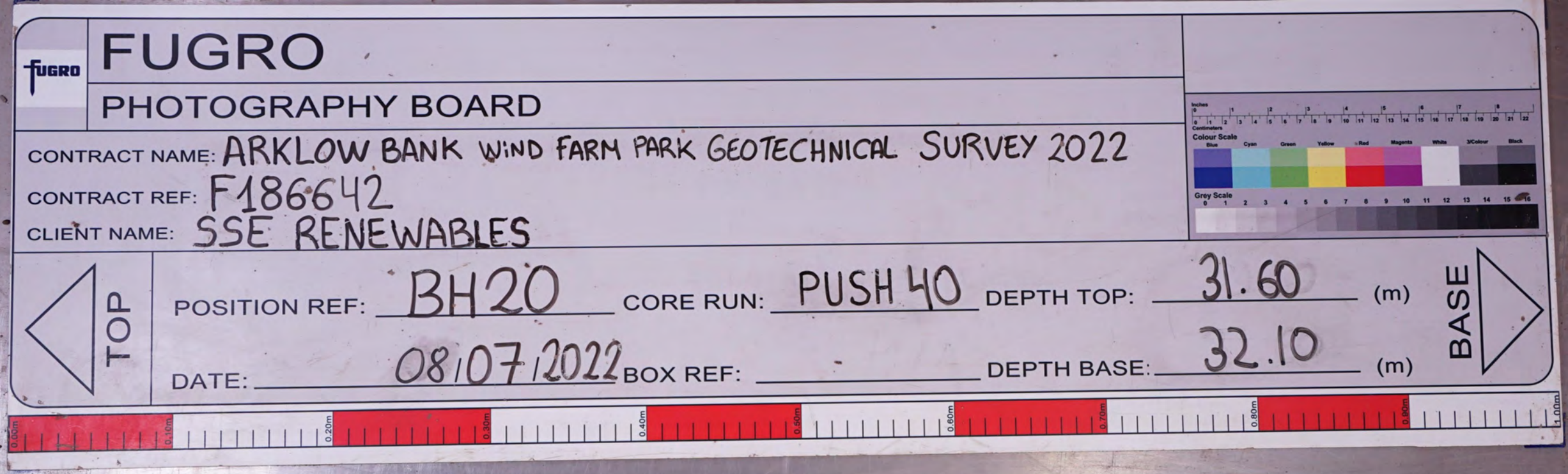
POSITION REF: BH20 CORE RUN: PUSH 39 DEPTH TOP: 30.60 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 31.60 (m)

BASE



Plate 4.777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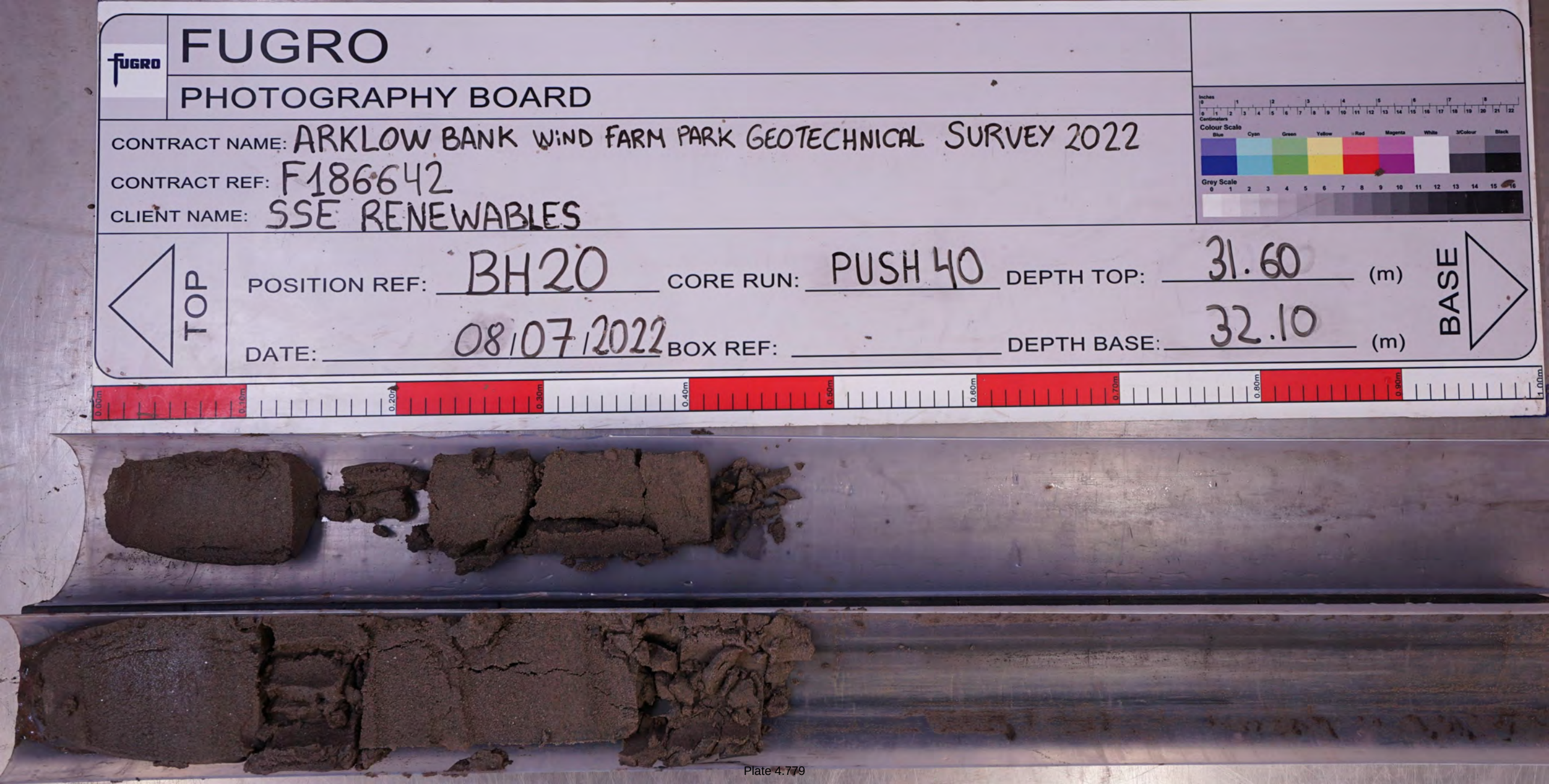
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 40
DEPTH TOP: 31.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 32.10 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.778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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 40
DEPTH TOP: 31.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 32.10 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.779


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 41
DEPTH TOP: 32.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 32.60 (m)
BASE
Colour Scale
Grey Scale

Plate 4.780


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 41
DEPTH TOP: 32.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 32.60 (m)
BASE
Colour Scale
Grey Scale

Plate 4.781

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH42 DEPTH TOP: 33.10 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 34.10 (m)

BASE



Plate 4.782

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

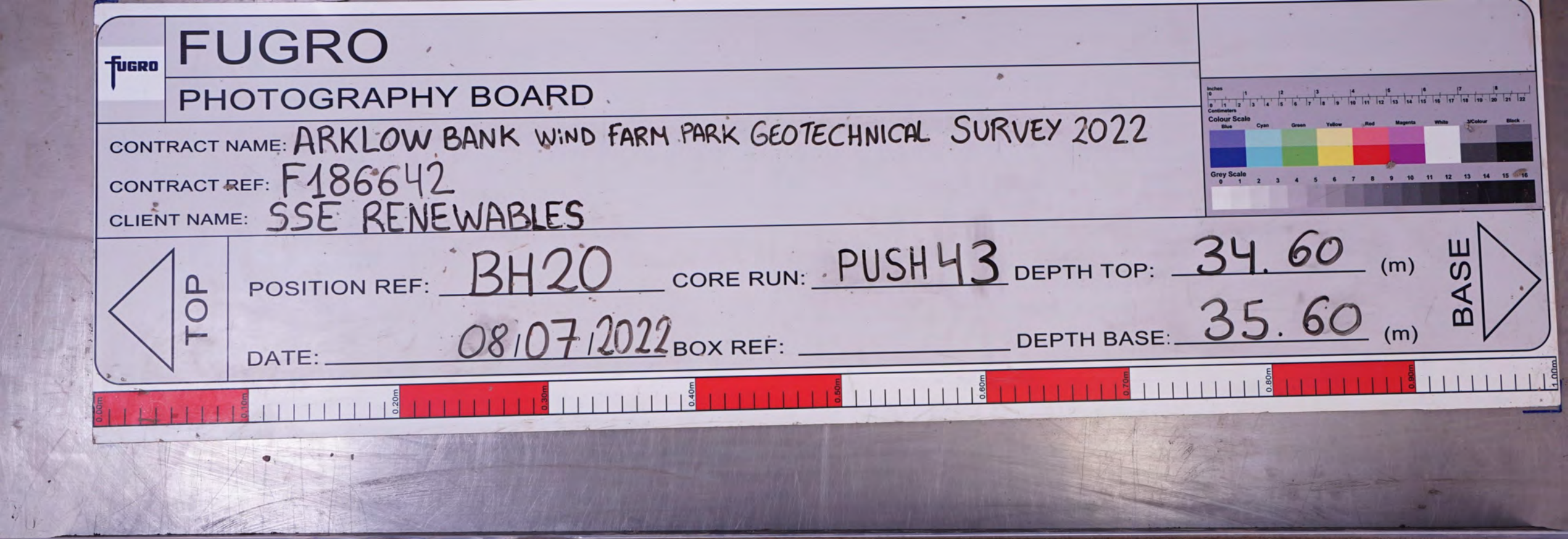
POSITION REF: BH20 CORE RUN: PUSH 42 DEPTH TOP: 33.10 (m)

DATE: 08/07/2022 BOX REF: _____ DEPTH BASE: 34.10 (m)

BASE



Plate 4.783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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 43
DEPTH TOP: 34.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 35.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.784


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 43
DEPTH TOP: 34.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 35.60 (m)
BASE

Plate 4.785

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

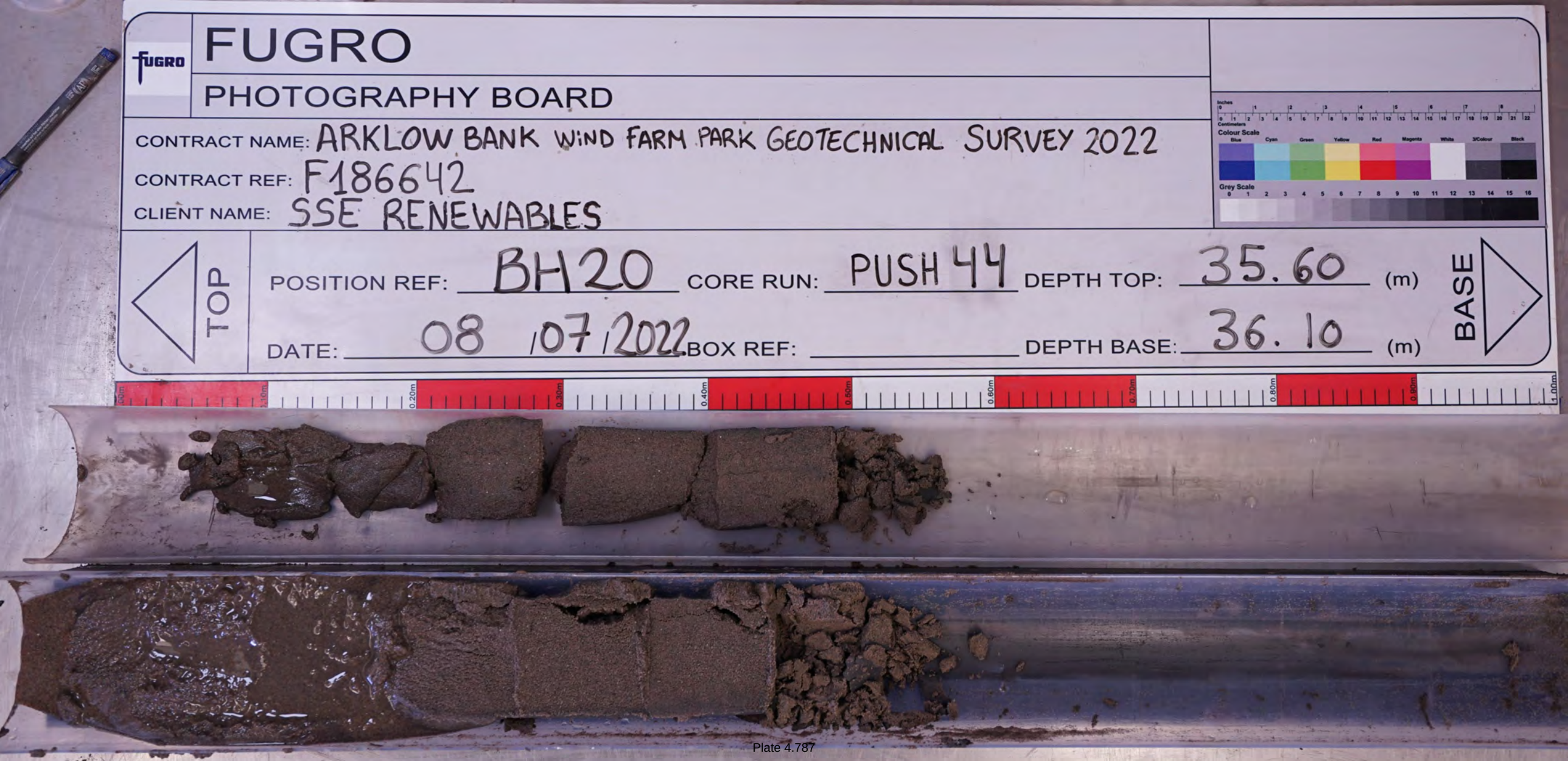
POSITION REF: BH20 CORE RUN: PUSH 44 DEPTH TOP: 35.60 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 36.10 (m)

BASE



Plate 4.786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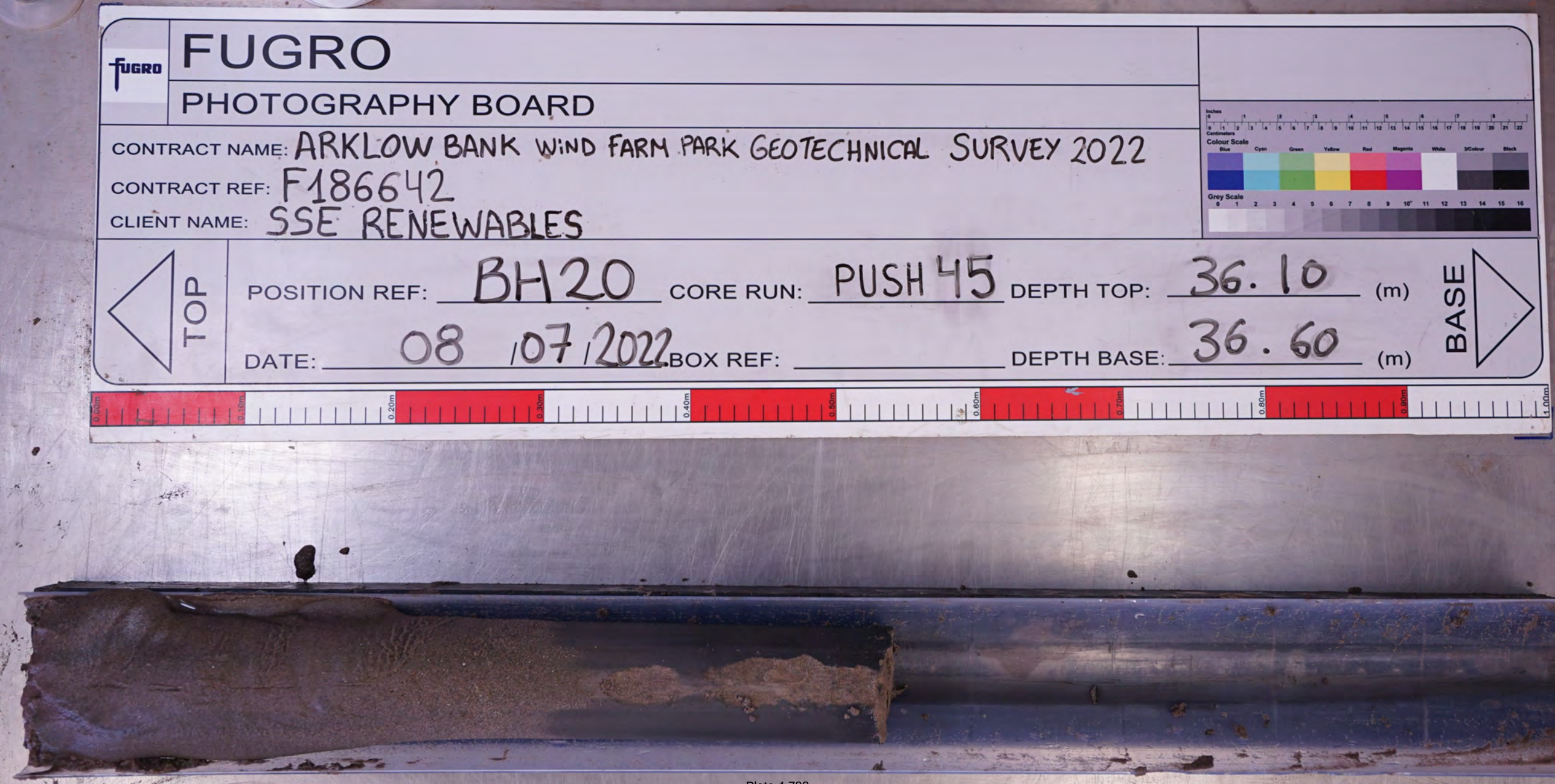
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 44
DEPTH TOP: 35.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 36.10 (m)
BASE

Plate 4.787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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 45
DEPTH TOP: 36.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 36.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.788

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

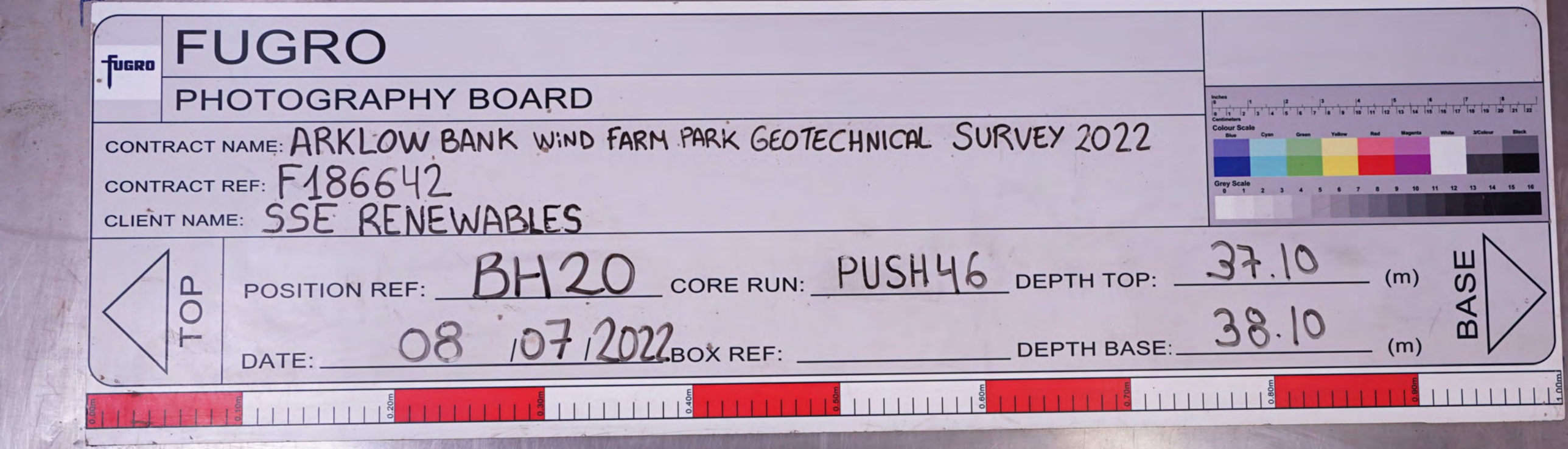
POSITION REF: BH20 CORE RUN: PUSH 45 DEPTH TOP: 36.10 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 36.60 (m)

BASE



Plate 4.789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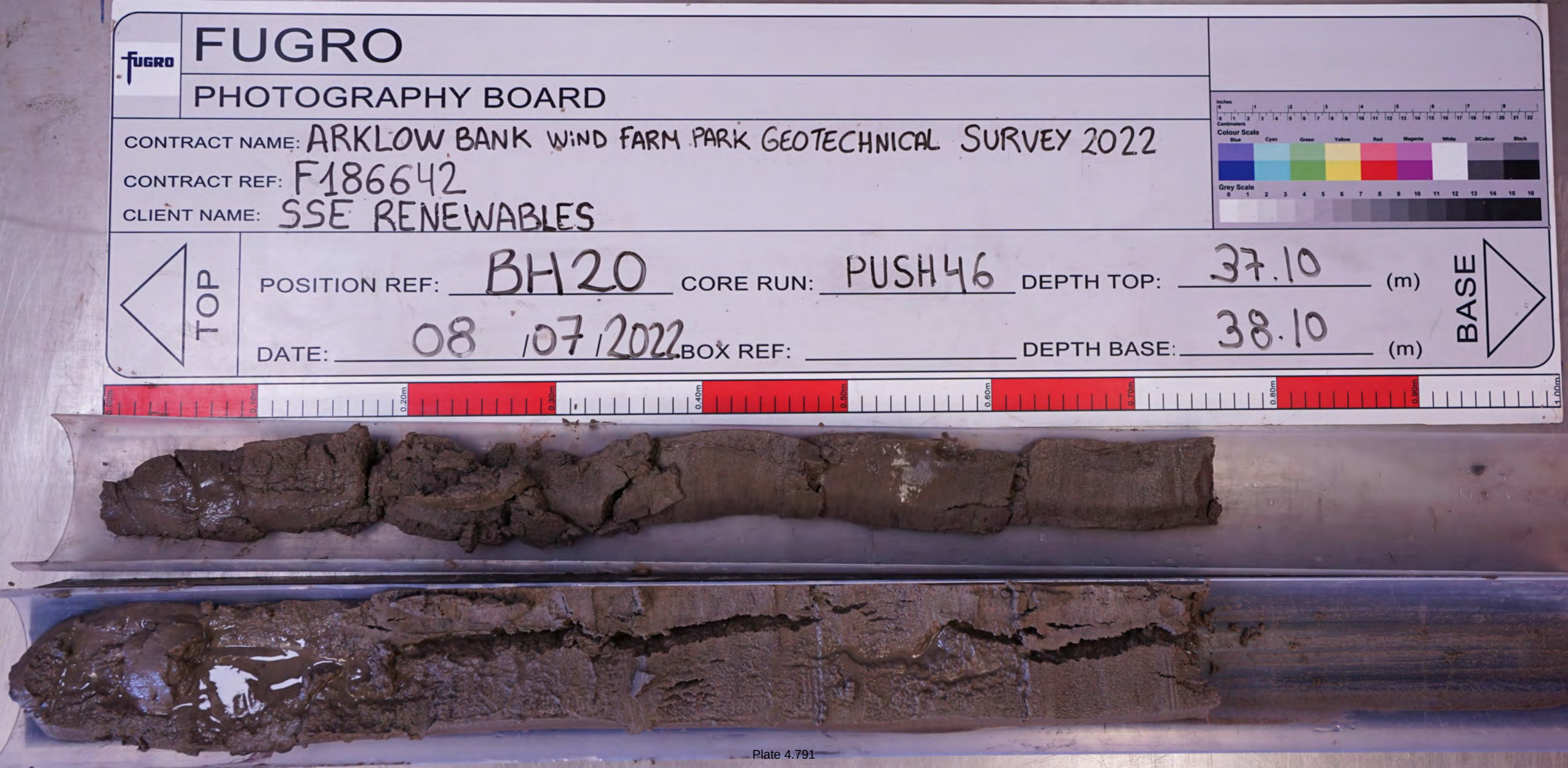
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH46
DEPTH TOP: 37.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 38.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.790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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH46
DEPTH TOP: 37.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 38.10 (m)
BASE

Plate 4.791

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH47 DEPTH TOP: 38.60 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 39.60 (m)

BASE



Plate 4.792


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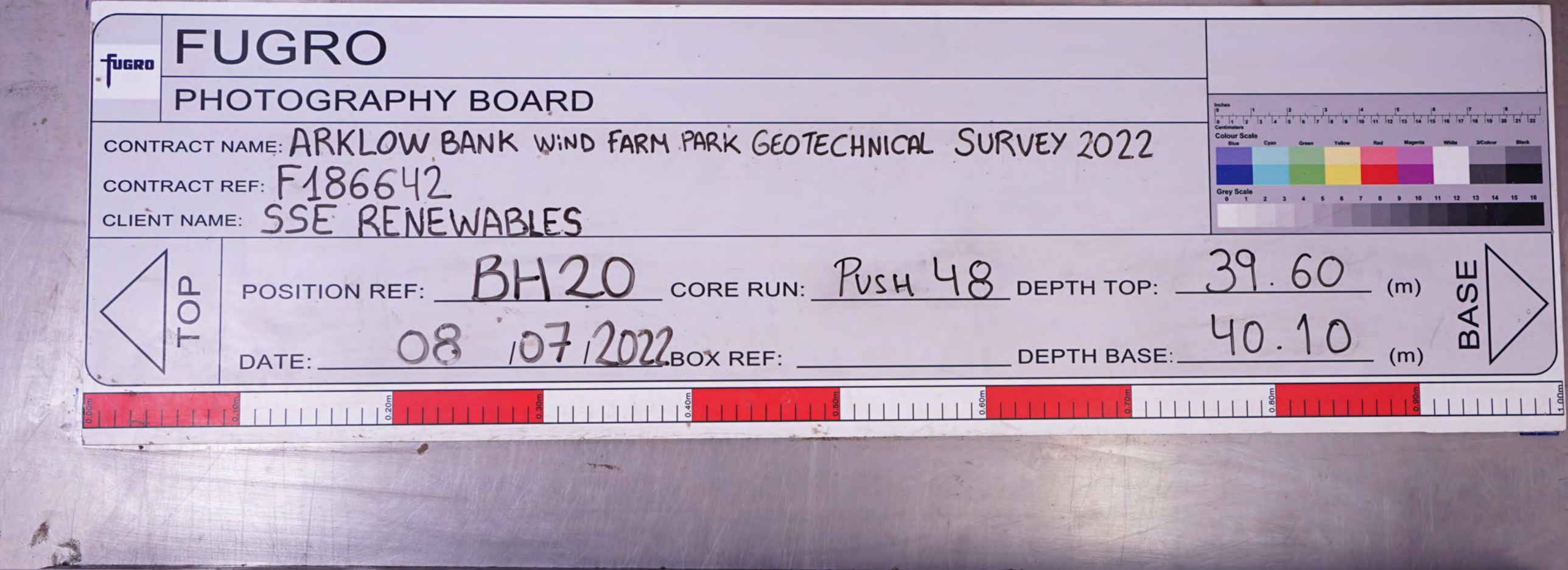
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH47
DEPTH TOP: 38.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 39.60 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.793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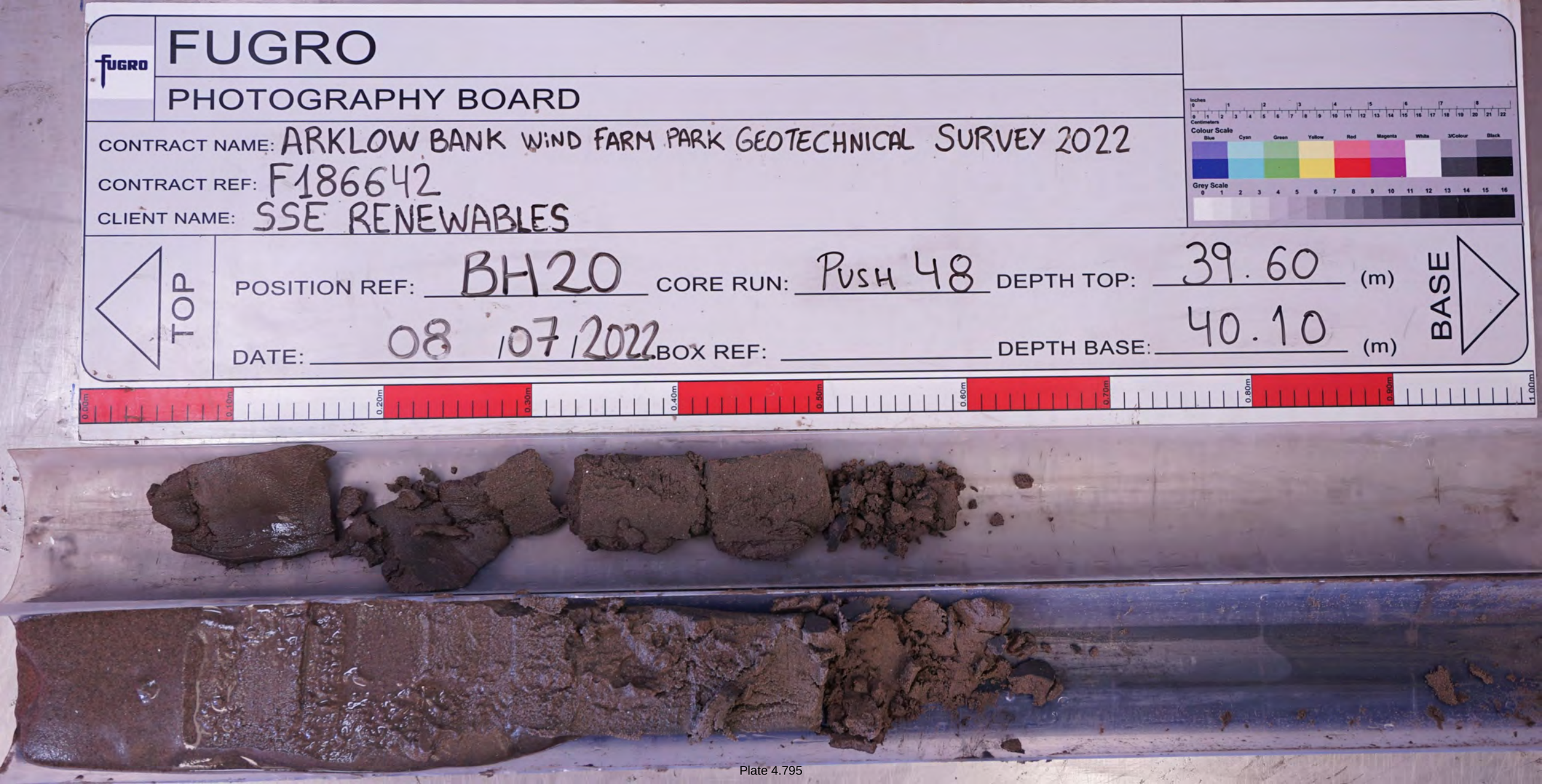
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 48
DEPTH TOP: 39.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 40.10 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.794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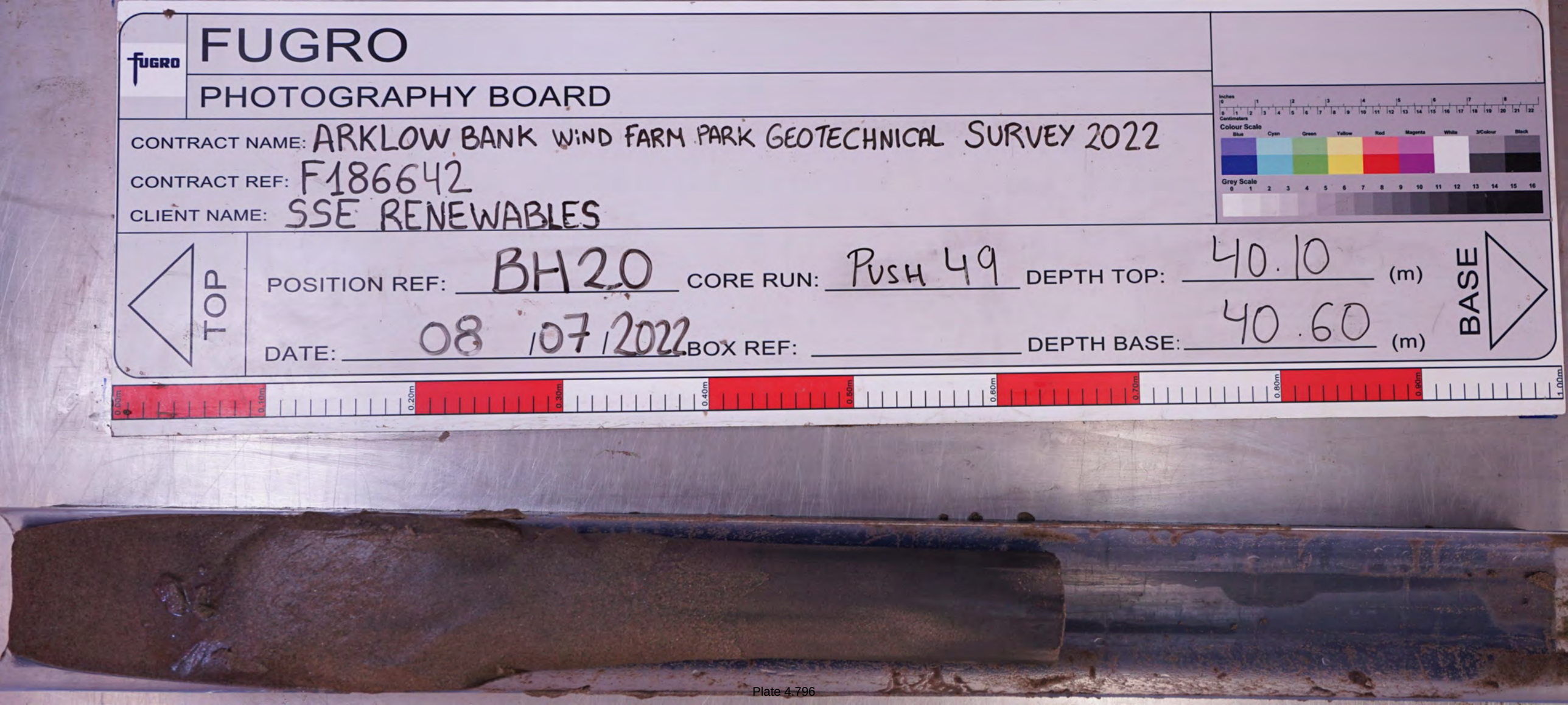
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: Push 48
DEPTH TOP: 39.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 40.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.795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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 49
DEPTH TOP: 40.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 40.60 (m)
BASE

Plate 4.796

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 49 DEPTH TOP: 40.10 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 40.60 (m)

BASE



Plate 4.797

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 50 DEPTH TOP: 41.10 (m)

DATE: 08/07/2022 BOX REF: _____ DEPTH BASE: 41.90 (m)

BASE



Plate 4.798

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

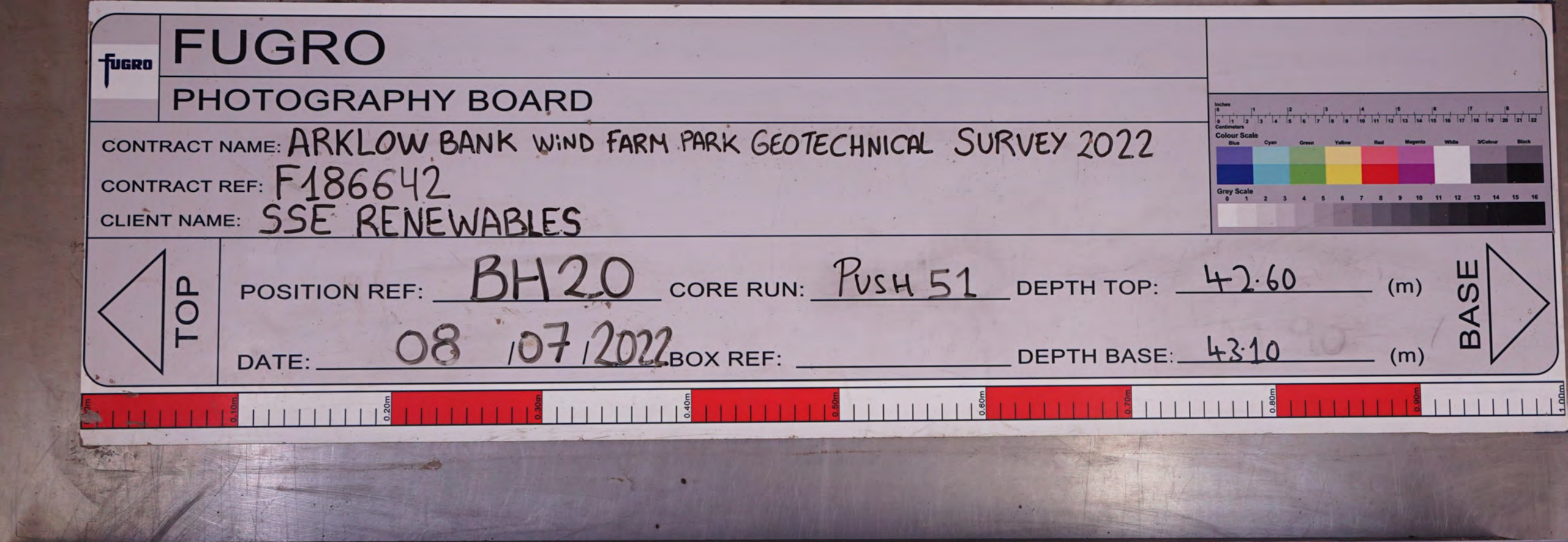
POSITION REF: BH20 CORE RUN: PUSH 50 DEPTH TOP: 41.10 (m)

DATE: 08/07/2022 BOX REF: _____ DEPTH BASE: 41.90 (m)

BASE



Plate 4.799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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 51
DEPTH TOP: 42.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 43.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.800

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 51 DEPTH TOP: 42.60 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 43.10 (m)

BASE

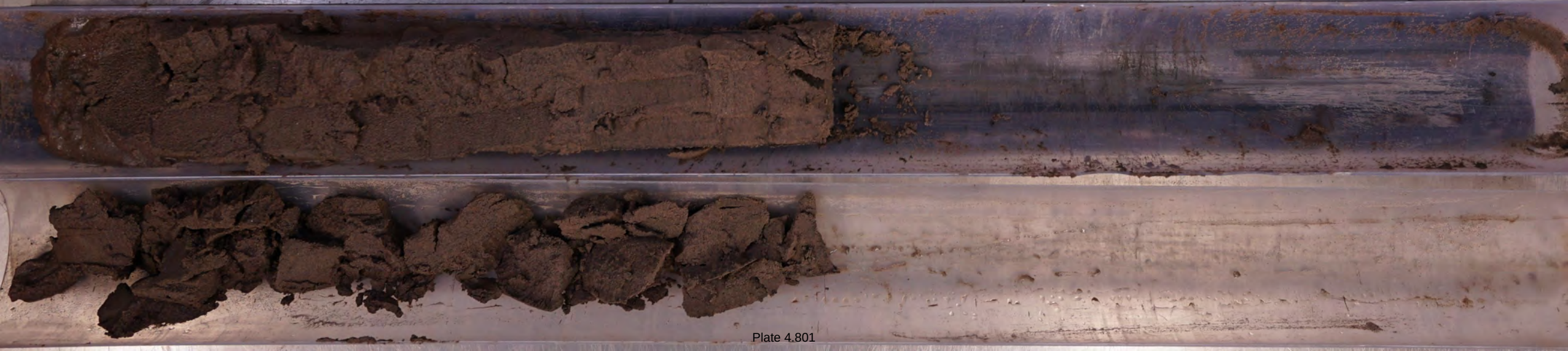
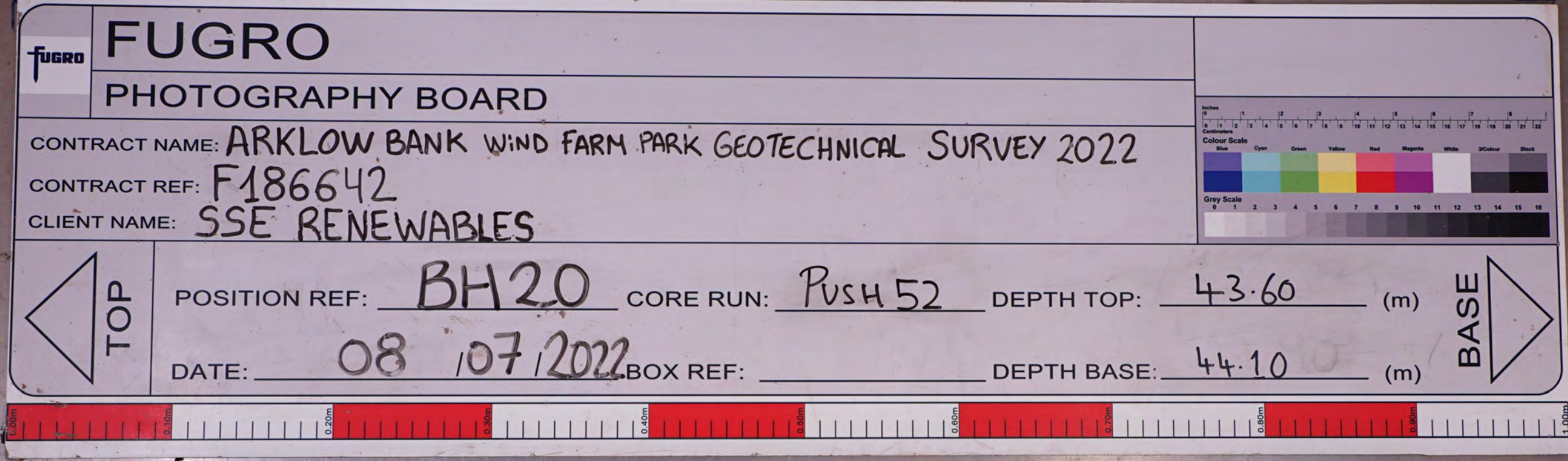


Plate 4.801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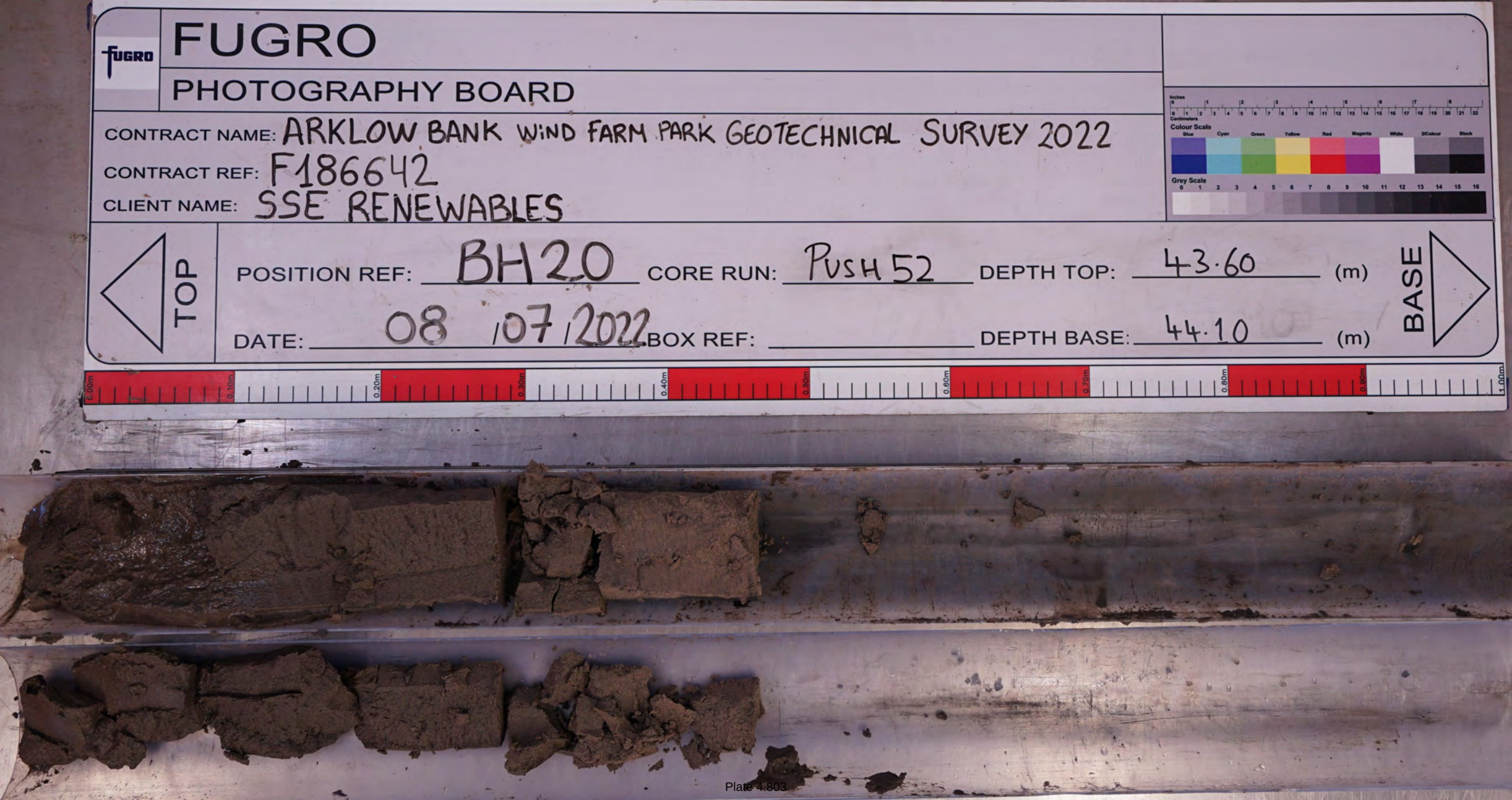
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 52
DEPTH TOP: 43.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 44.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.802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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 52
DEPTH TOP: 43.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 44.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.803

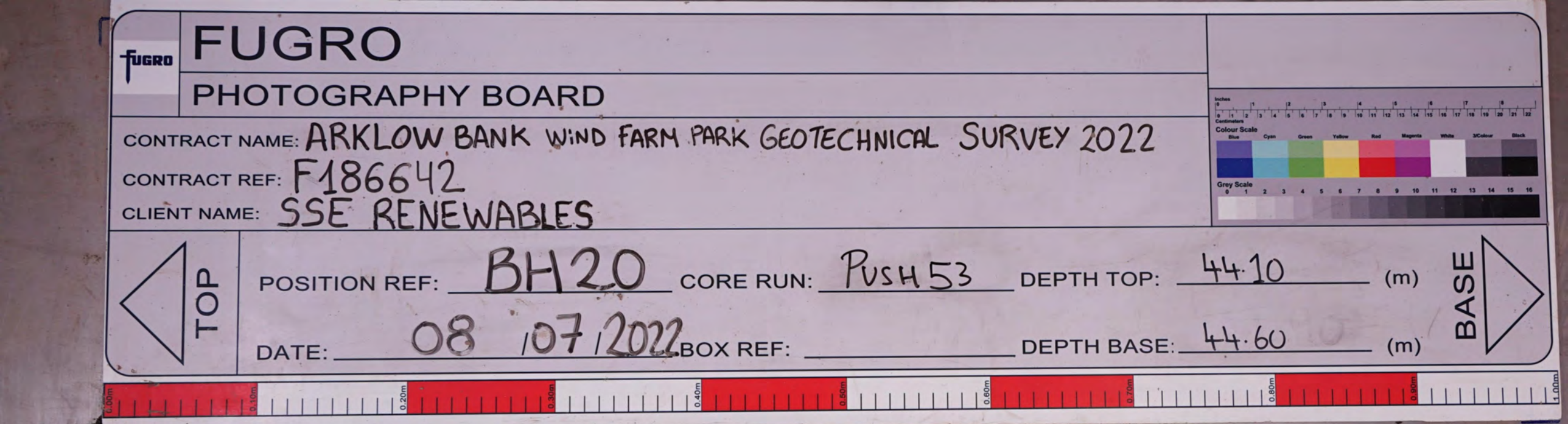

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 53
DEPTH TOP: 44.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 44.60 (m)
BASE

Plate 4.804


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 53
DEPTH TOP: 44.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 44.60 (m)
BASE
Colour Scale
Grey Scale

Plate 4.805

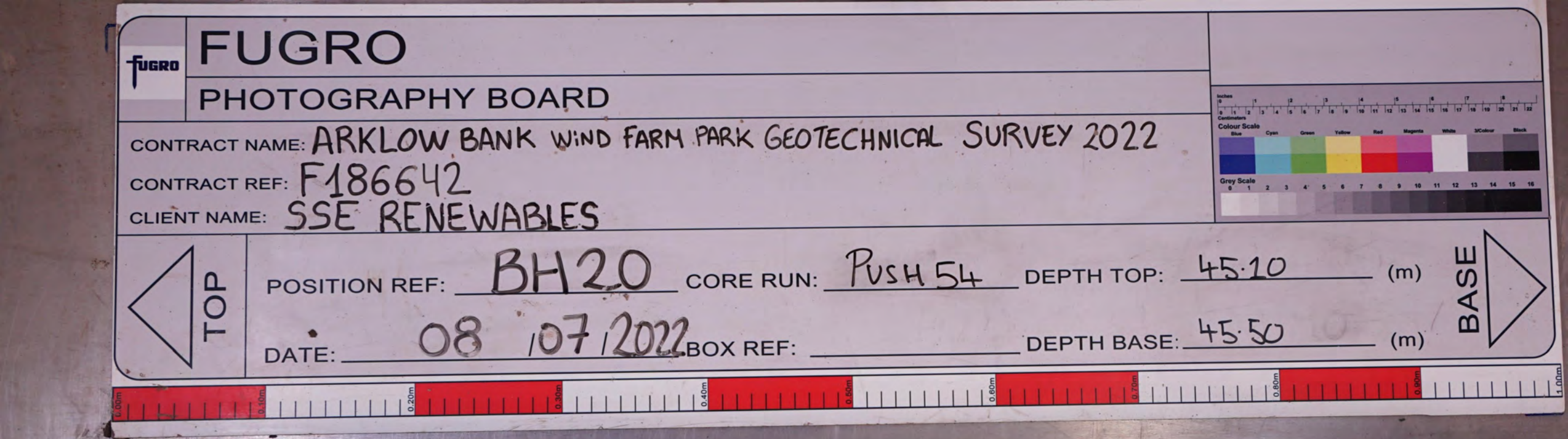

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 54
DEPTH TOP: 45.10 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 45.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.806

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 54 DEPTH TOP: 45.10 (m)

DATE: 08/07/2022 BOX REF: DEPTH BASE: 45.50 (m)

BASE

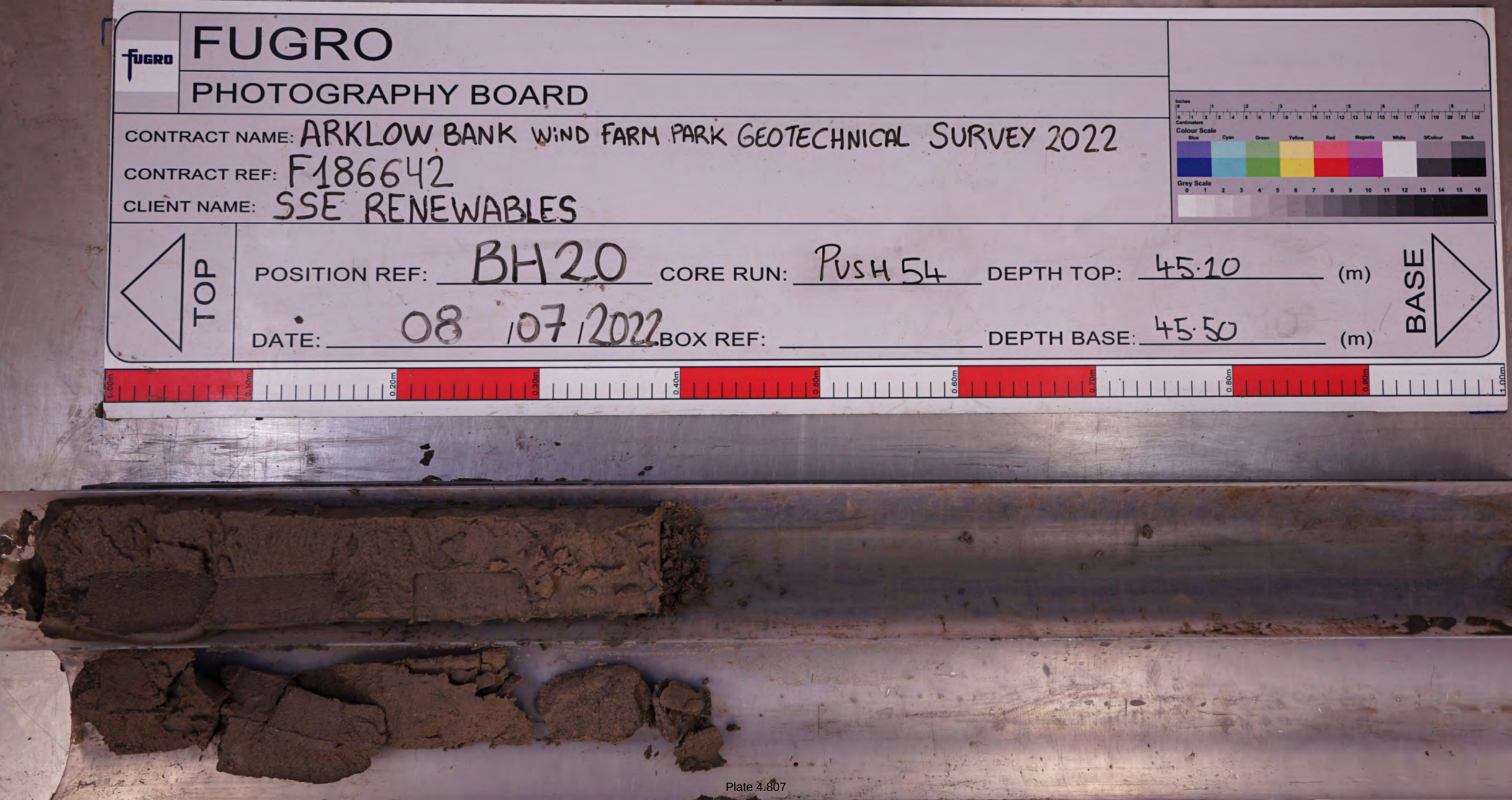
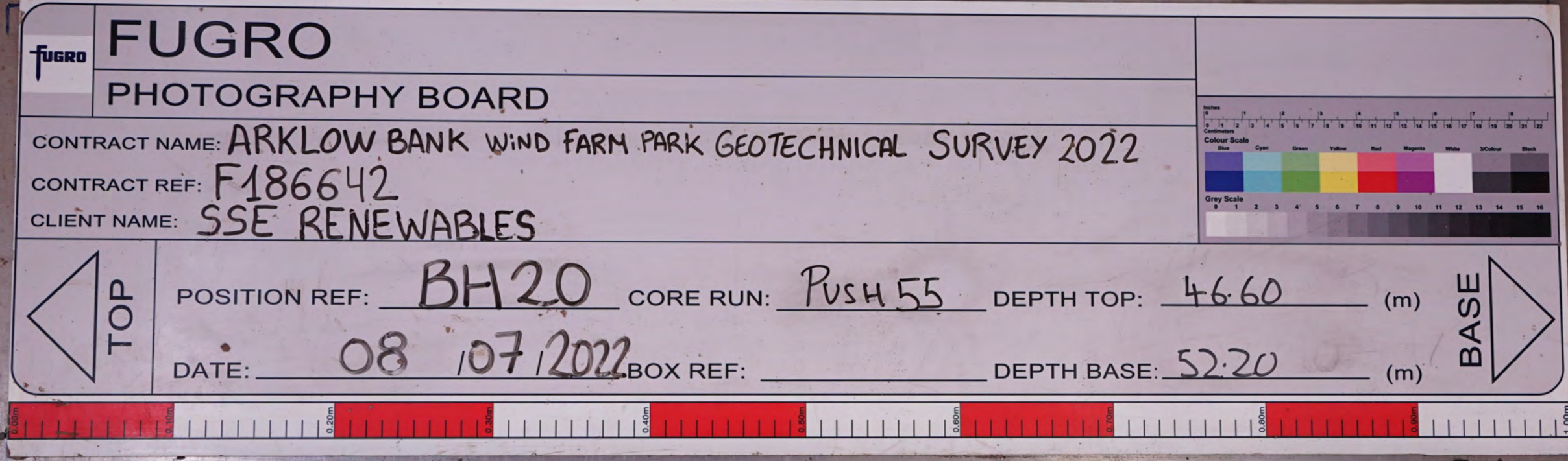


Plate 4.807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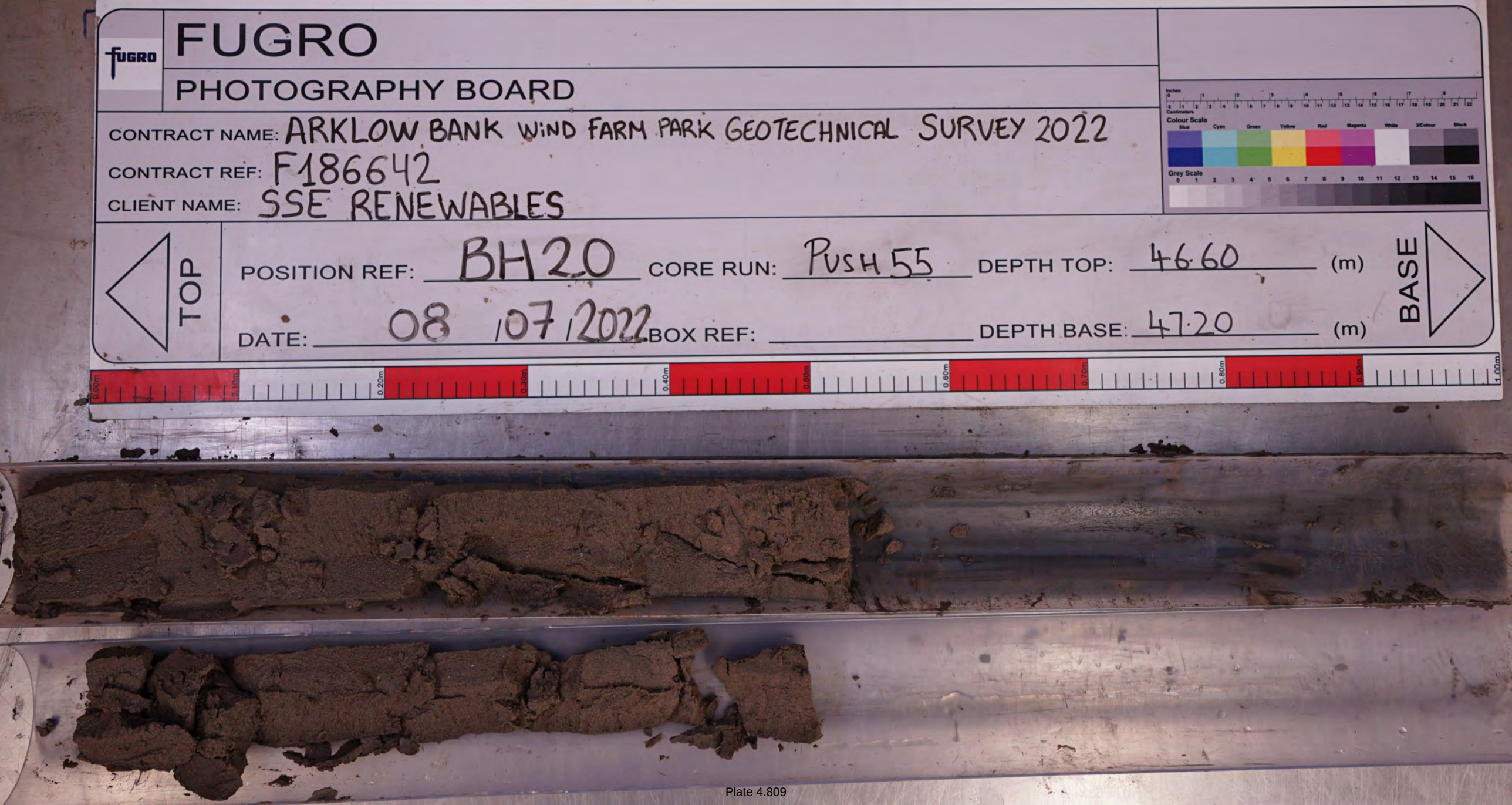
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 55
DEPTH TOP: 46.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 52.20 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.808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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 55
DEPTH TOP: 46.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 47.20 (m)
BASE
Colour Scale
Grey Scale

Plate 4.809

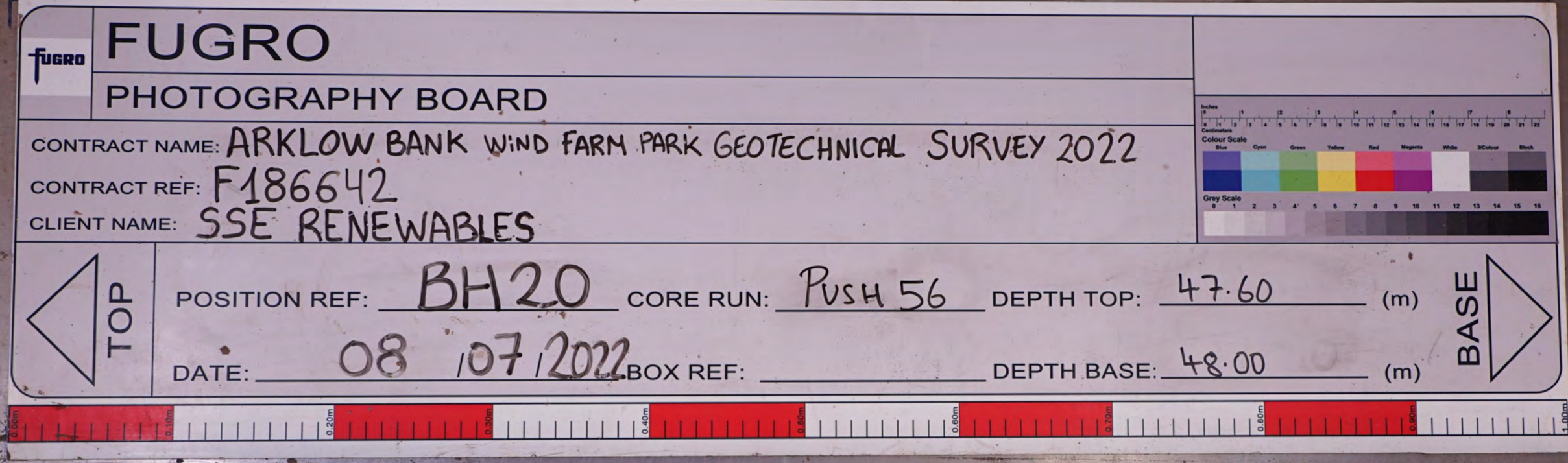

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 56
DEPTH TOP: 47.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 48.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.810

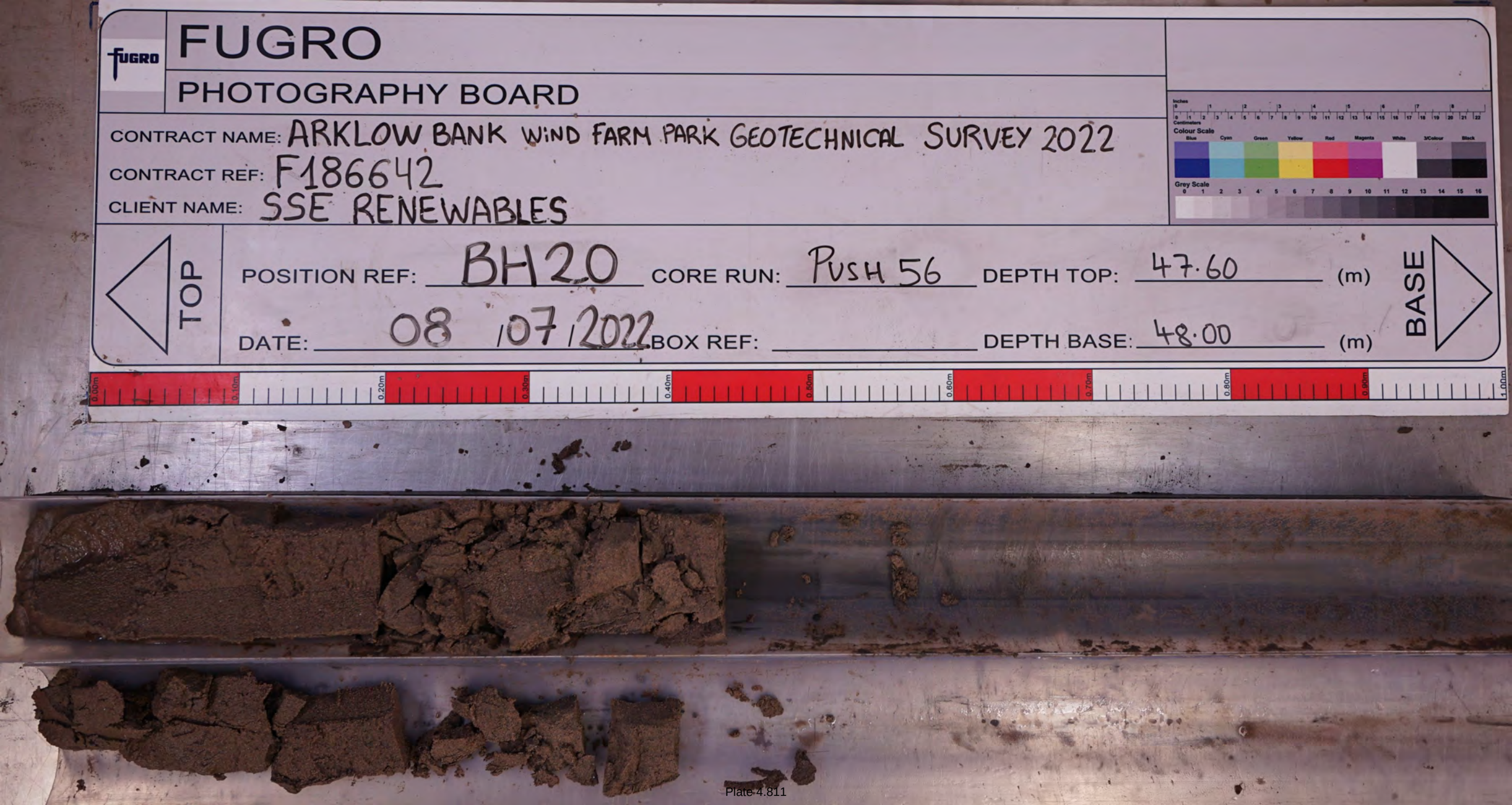
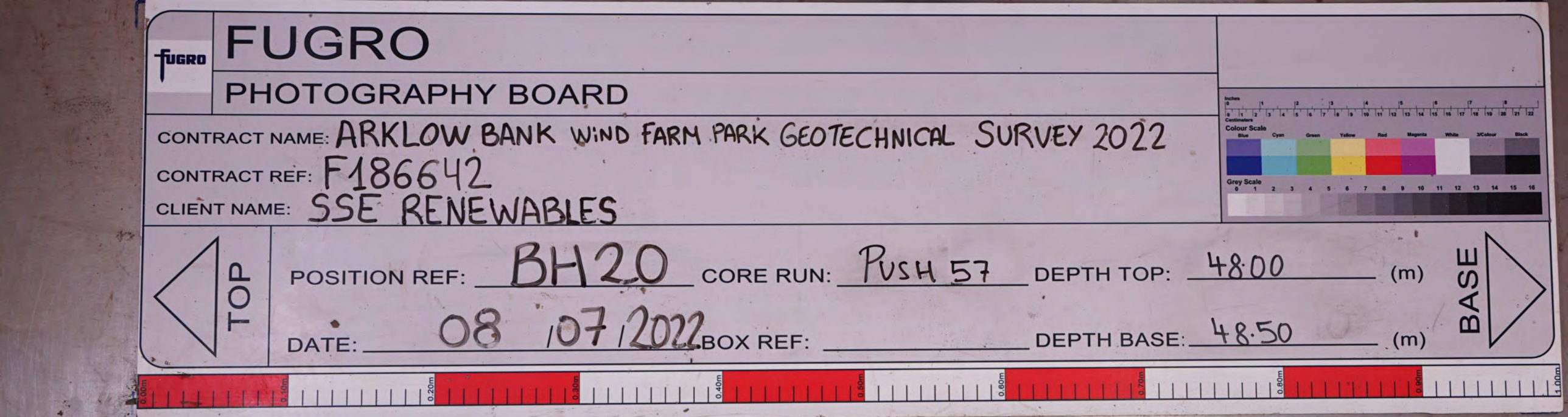

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 56
DEPTH TOP: 47.60 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 48.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.811


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 57
DEPTH TOP: 48.00 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 48.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 57
DEPTH TOP: 48.00 (m)
DATE: 08/07/2022
BOX REF:
DEPTH BASE: 48.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.813

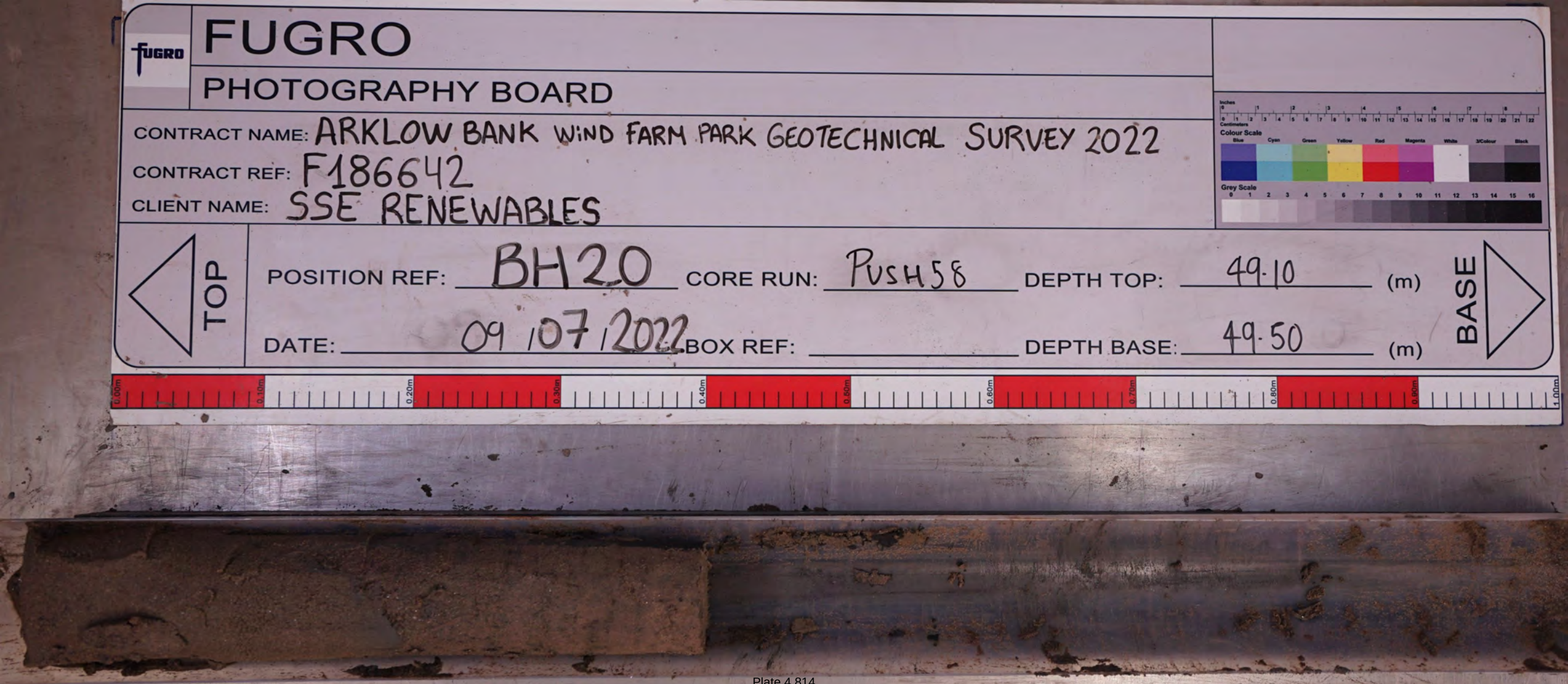

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH58
DEPTH TOP: 49.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 49.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.814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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH58
DEPTH TOP: 49.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 49.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.815

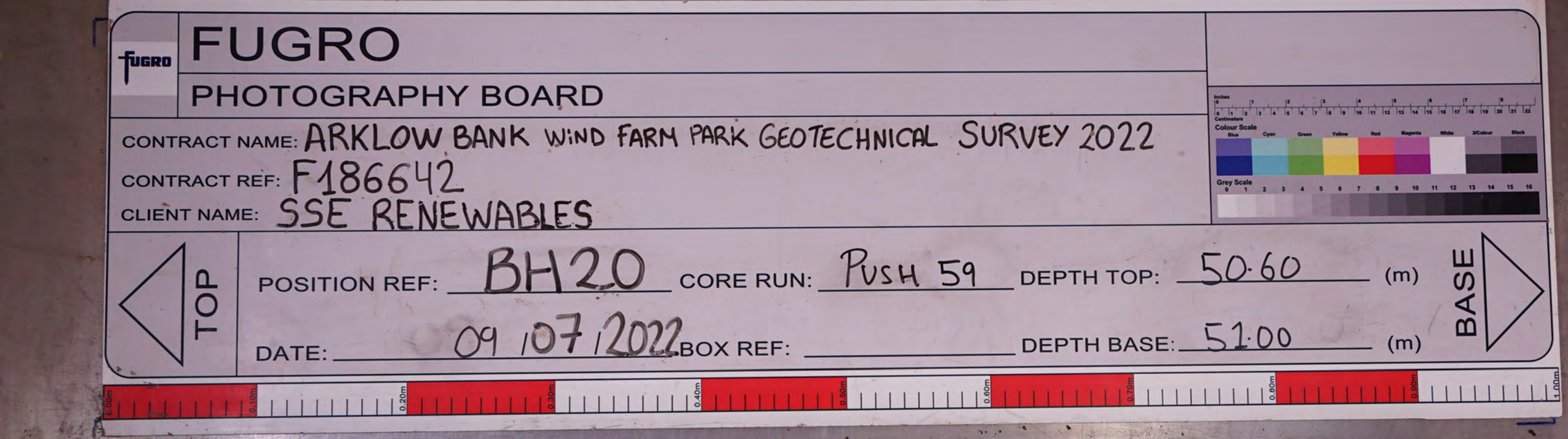
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 59
DEPTH TOP: 50.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 51.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3rdColour
Black
Grey Scale

Plate 4.816


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 59
DEPTH TOP: 50.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 51.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.817

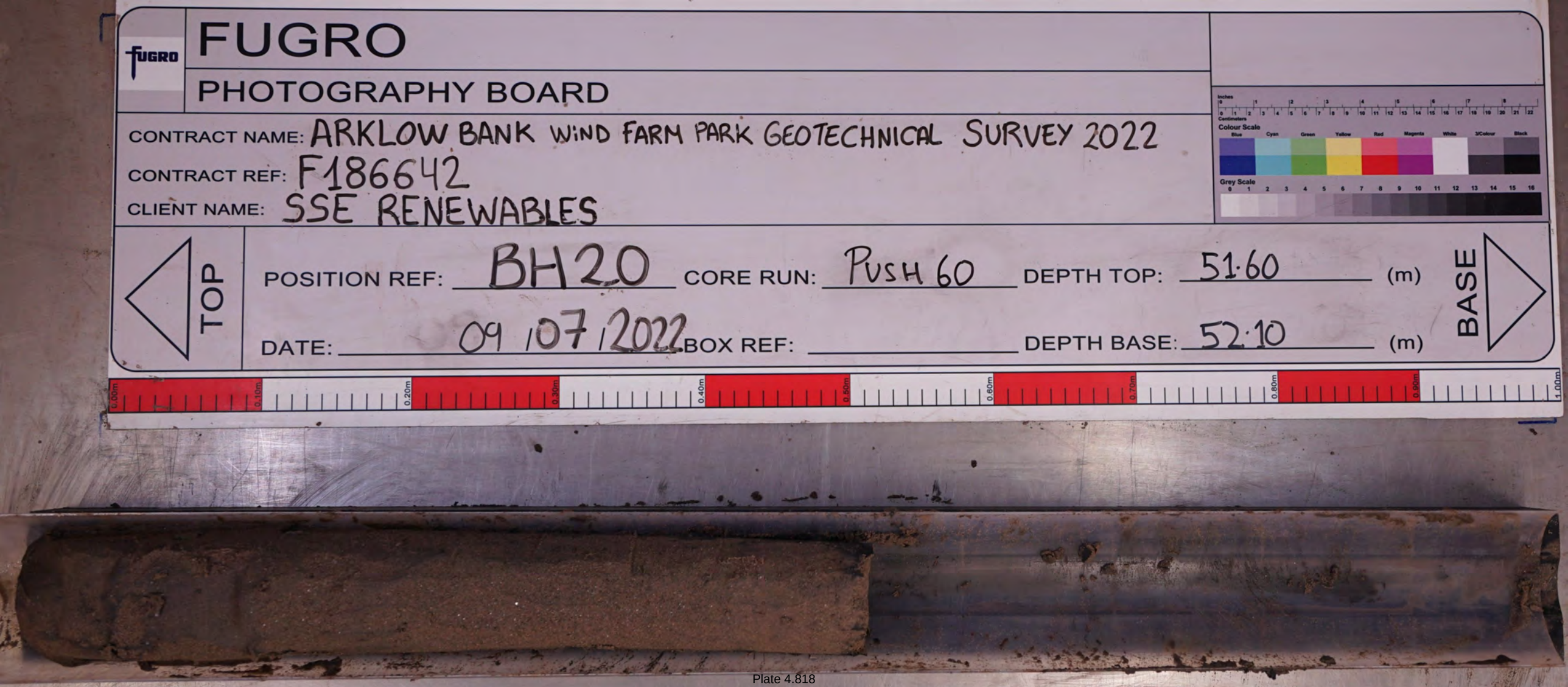
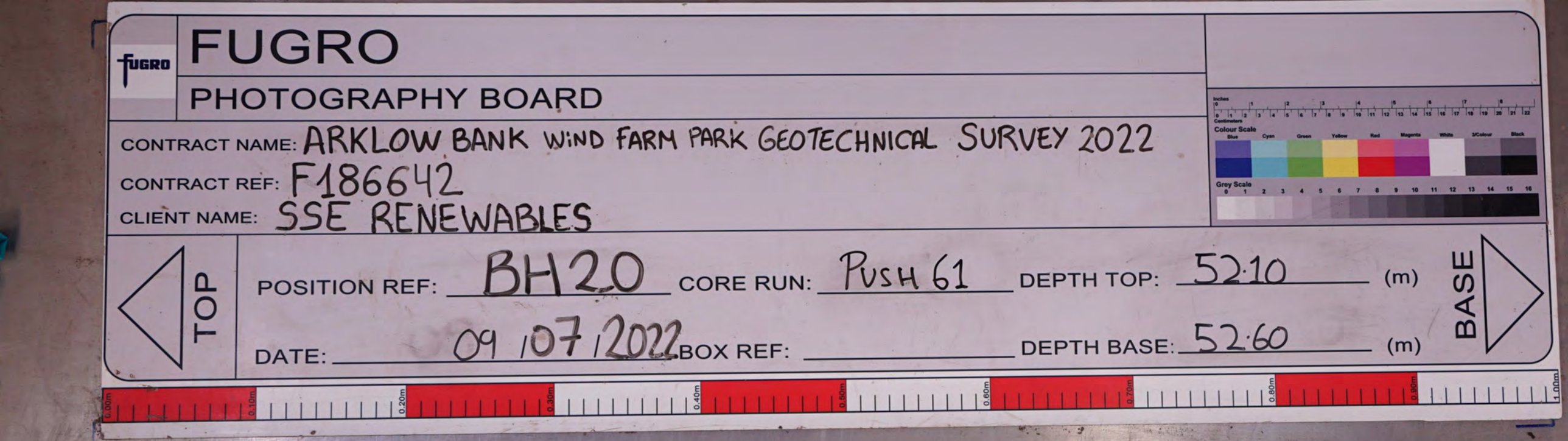

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 60
DEPTH TOP: 51.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 52.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.818


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 60
DEPTH TOP: 51.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 52.10 (m)
BASE

Plate 4.819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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 61
DEPTH TOP: 52.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 52.60 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.820

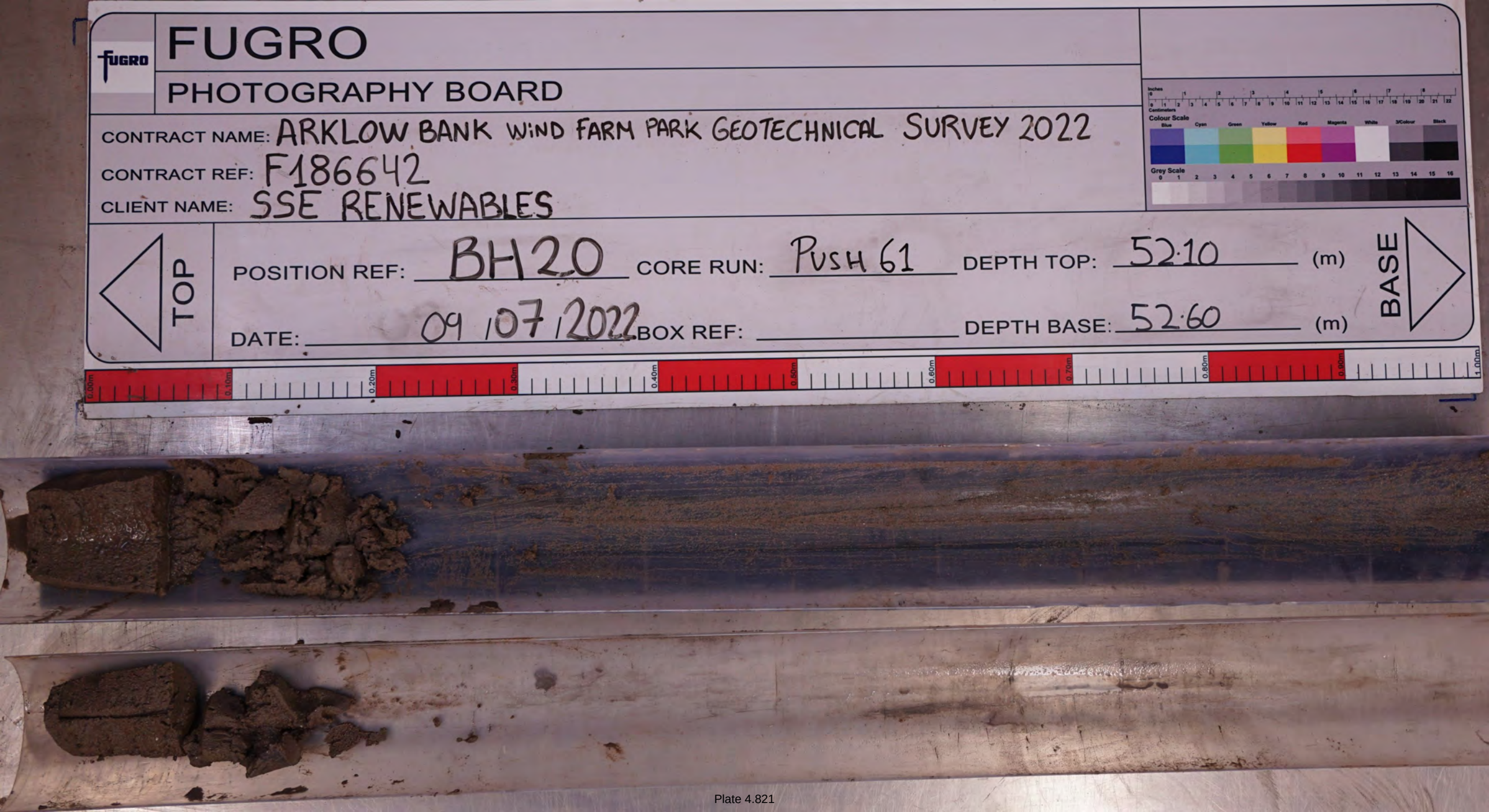
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 61
DEPTH TOP: 52.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 52.60 (m)
BASE
Colour Scale
Grey Scale

Plate 4.821

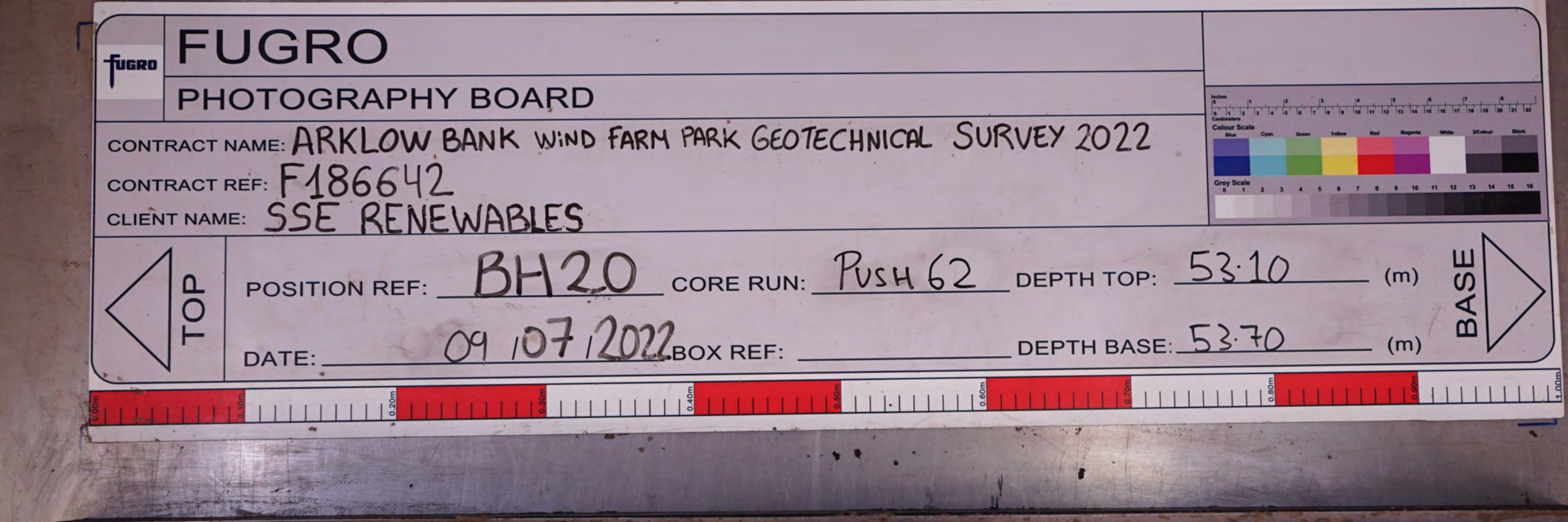
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 62
DEPTH TOP: 53.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 53.70 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.822

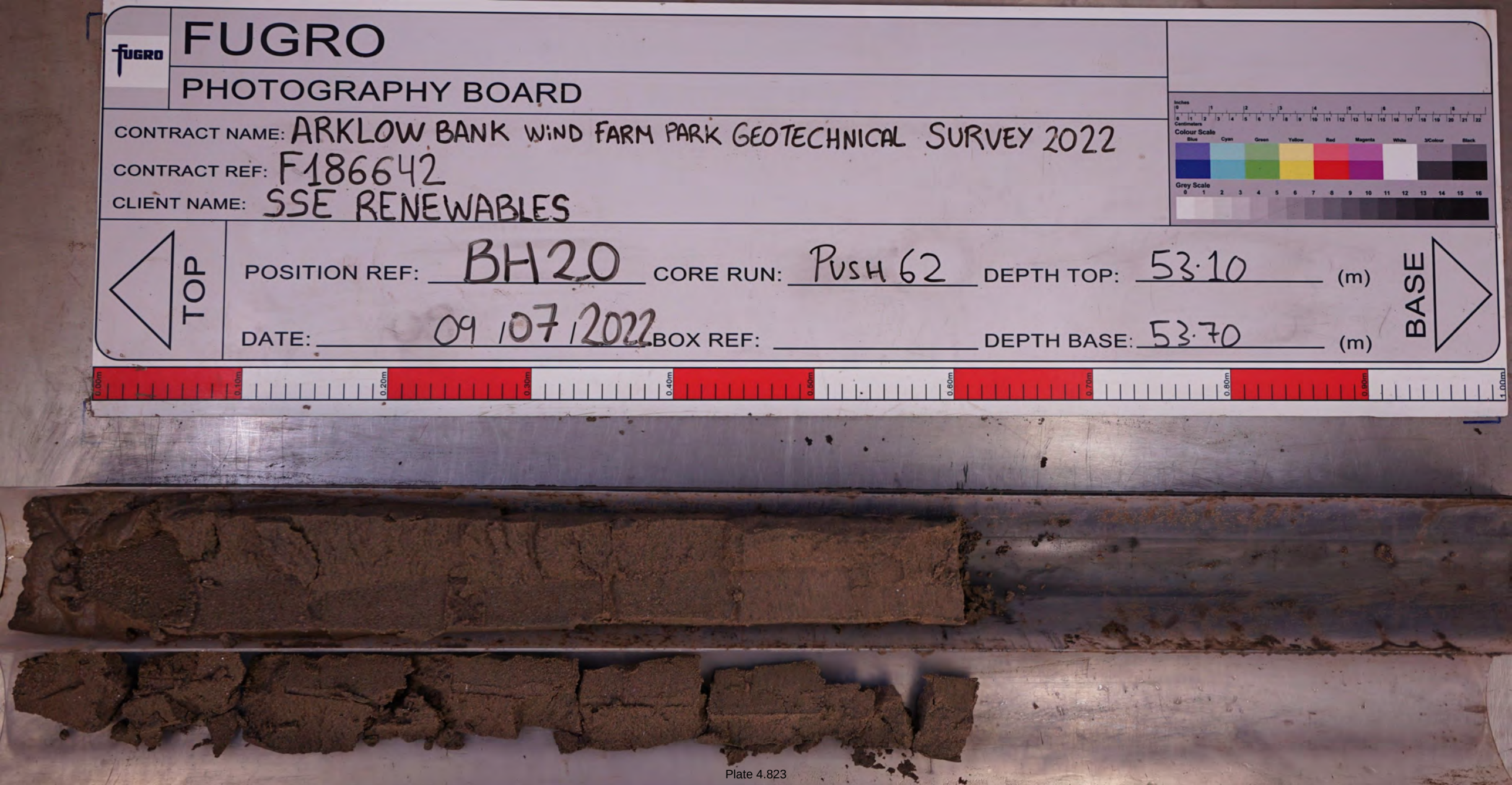
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 62
DEPTH TOP: 53.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 53.70 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.823

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 63 DEPTH TOP: 54.60 (m)

DATE: 09/07/2022 BOX REF: DEPTH BASE: 55.20 (m)

BASE



Plate 4.824

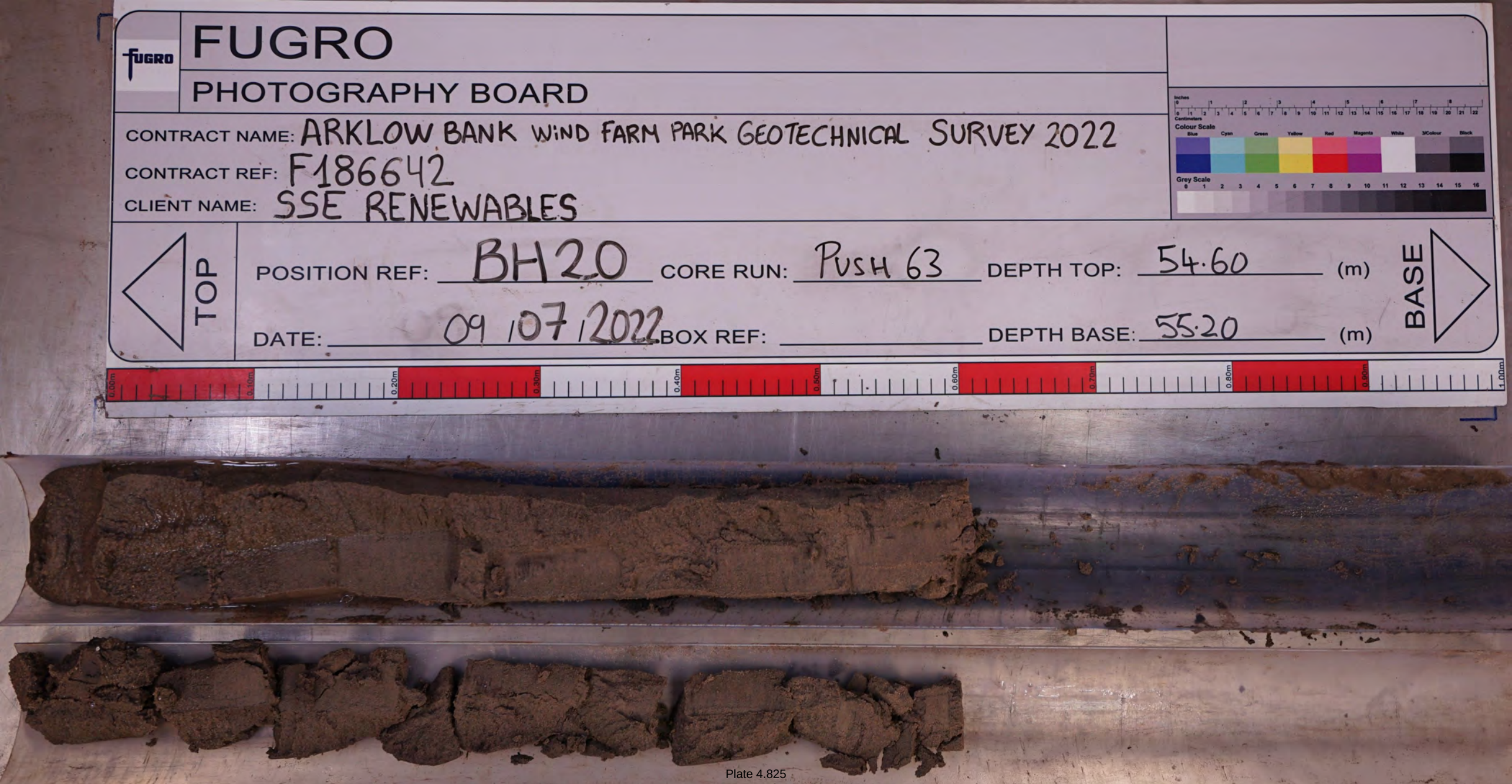
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 63
DEPTH TOP: 54.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 55.20 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.825

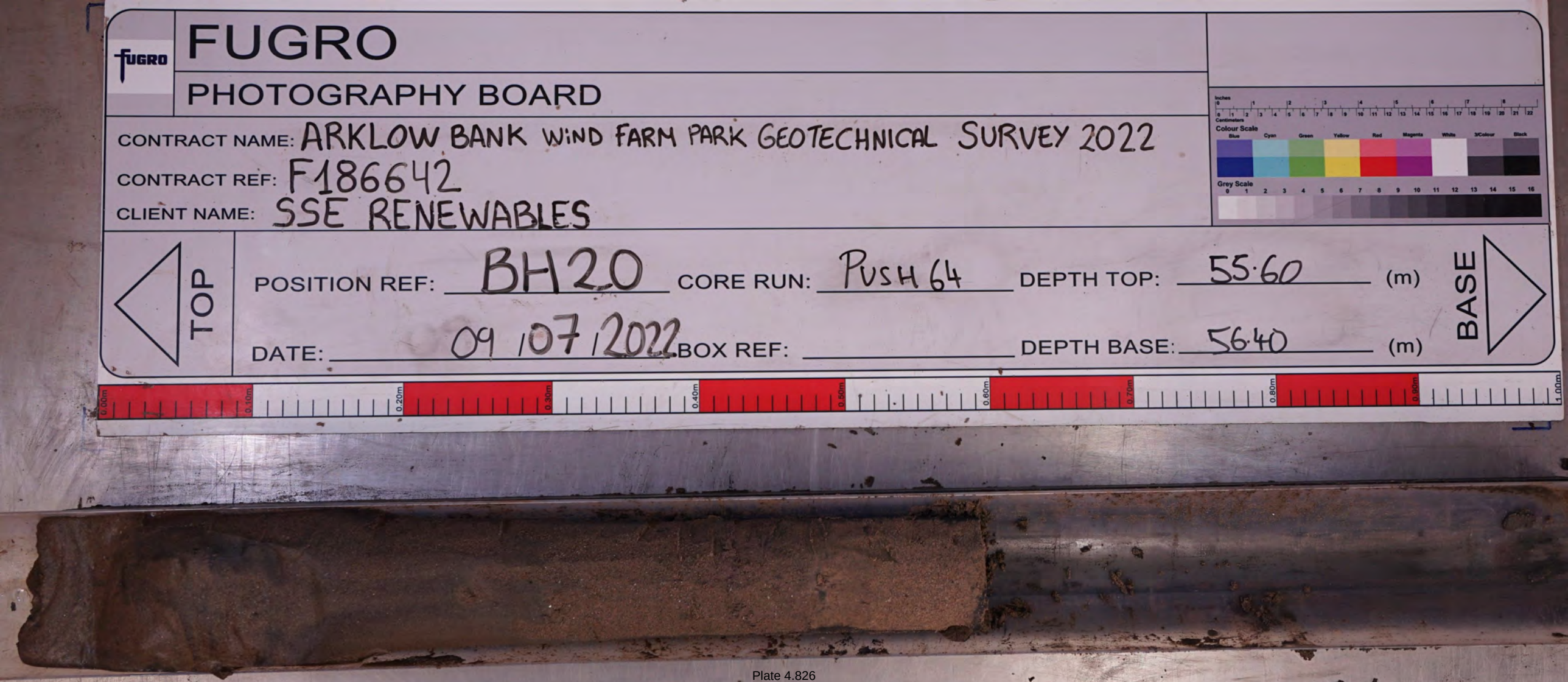
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 64
DEPTH TOP: 55.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 56.40 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.826


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 64
DEPTH TOP: 55.60 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 56.40 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.827

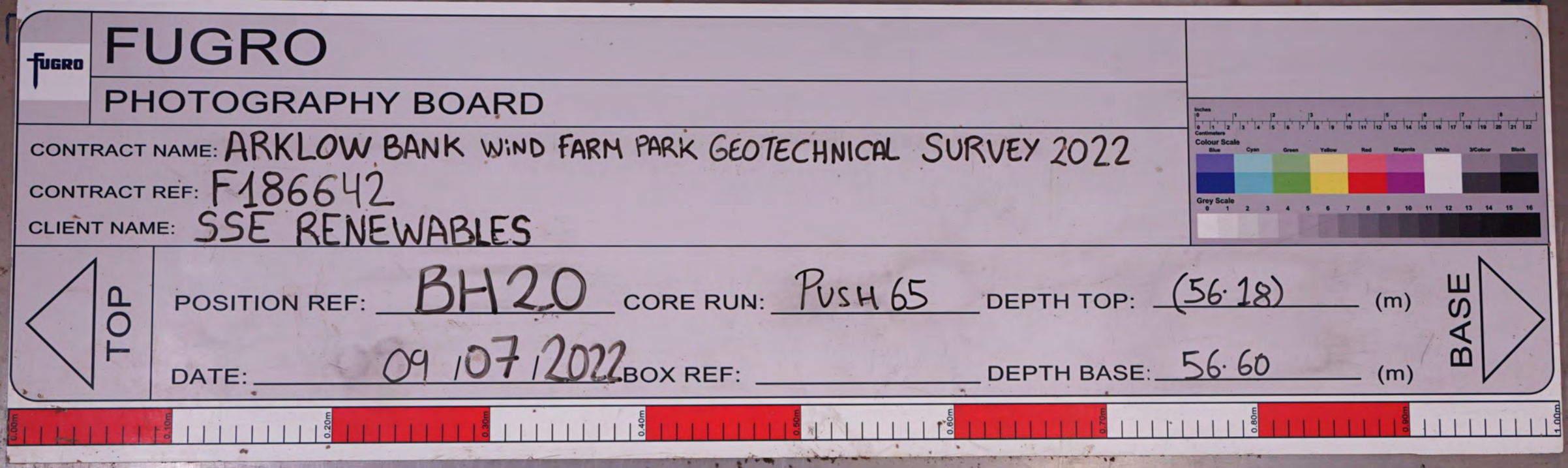
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 65
DEPTH TOP: (56.18) (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 56.60 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.828

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 65 DEPTH TOP: (56.18) (m)

DATE: 09/07/2022 BOX REF: DEPTH BASE: 56.60 (m)

BASE



Plate 4.829

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 66 DEPTH TOP: 57.10 (m)

DATE: 09/07/2022 BOX REF: _____ DEPTH BASE: 58.10 (m)

BASE





Plate 4.830

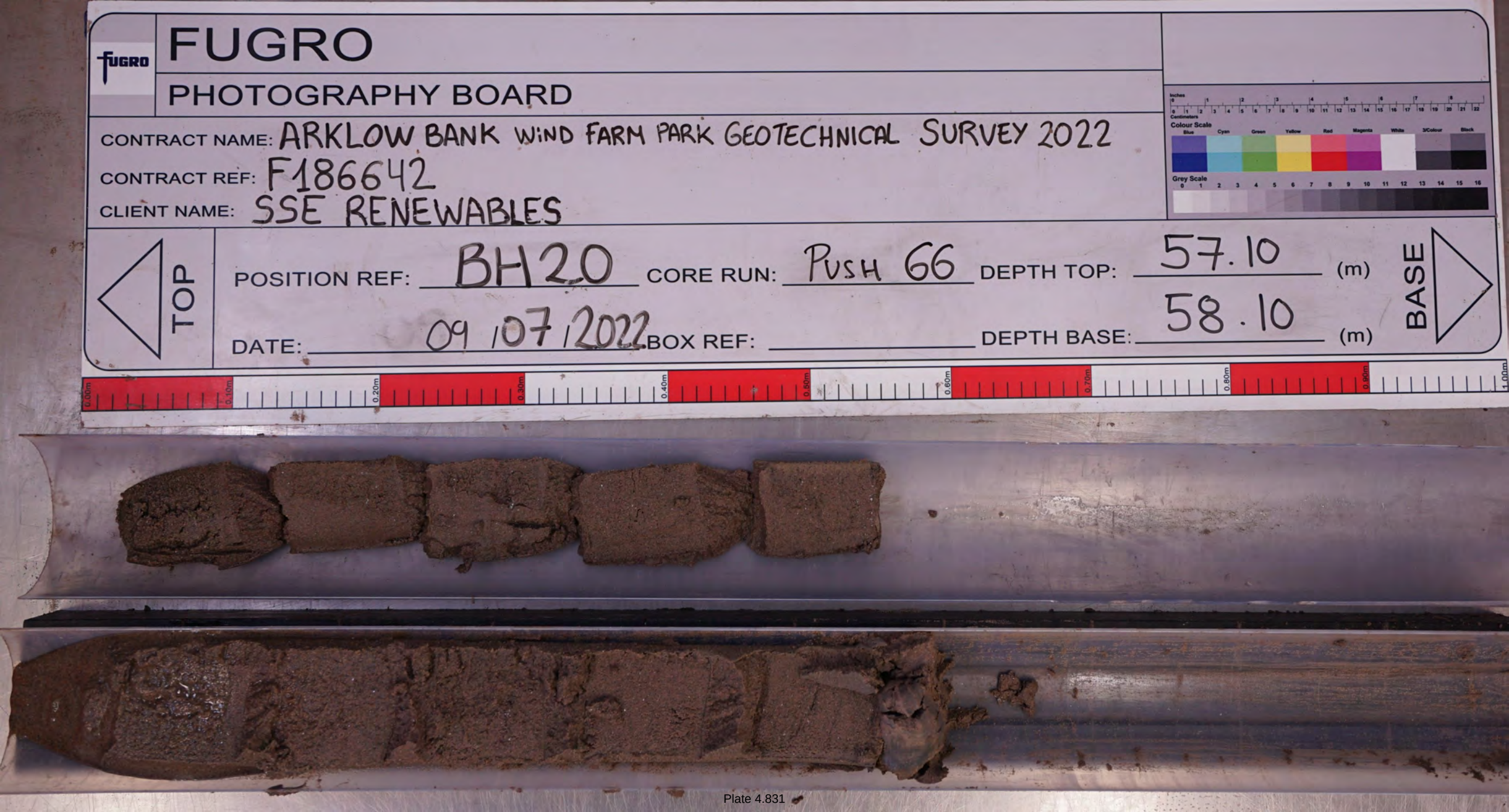
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH20
CORE RUN: PUSH 66
DEPTH TOP: 57.10 (m)
DATE: 09/07/2022
BOX REF:
DEPTH BASE: 58.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.831

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 67 DEPTH TOP: 58.60 (m)

DATE: 09/07/2022 BOX REF: DEPTH BASE: 59.60 (m)

BASE



Plate 4.832

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 67 DEPTH TOP: 58.60 (m)

DATE: 09/07/2022 BOX REF: DEPTH BASE: 59.60 (m)

BASE

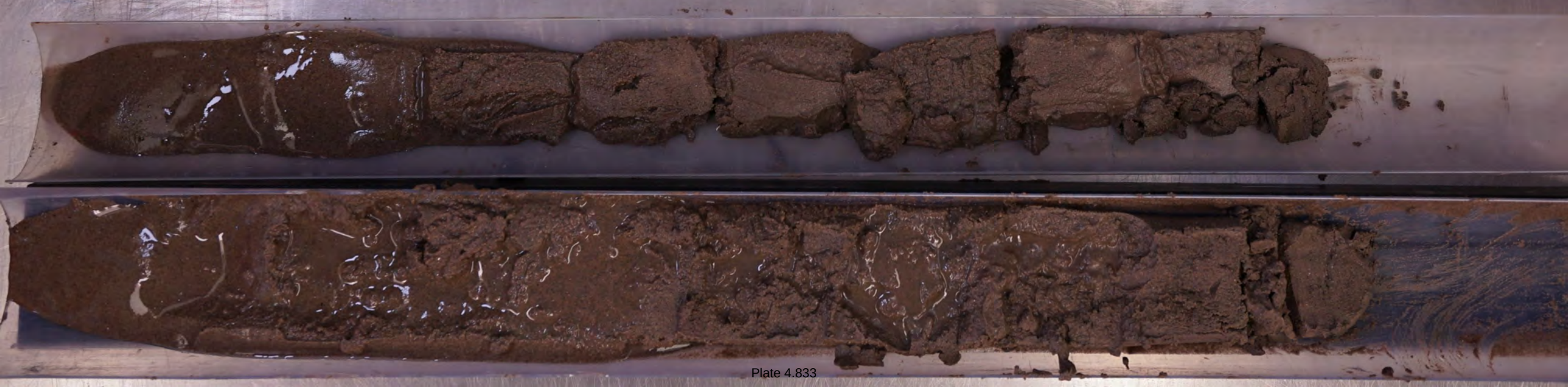

Plate 4.833

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 68 DEPTH TOP: 59.60 (m)

DATE: 09/07/2022 BOX REF: _____ DEPTH BASE: 60.10 (m)

BASE

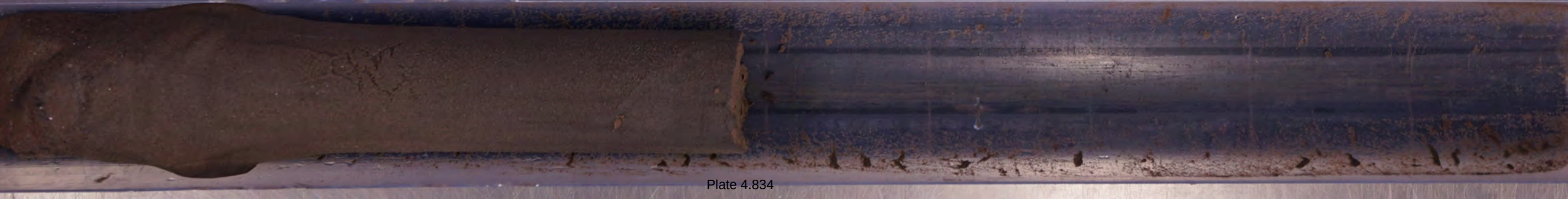

Plate 4.834

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND FARM PARK GEOTECHNICAL SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH20 CORE RUN: PUSH 68 DEPTH TOP: 59.60 (m)

DATE: 09/07/2022 BOX REF: _____ DEPTH BASE: 60.10 (m)

BASE

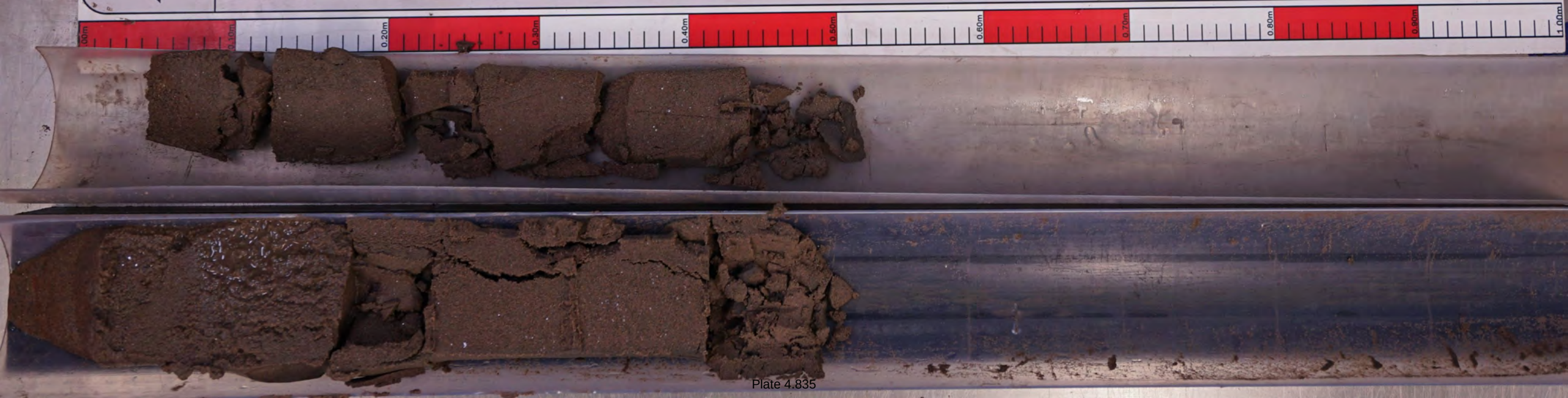

Plate 4.835

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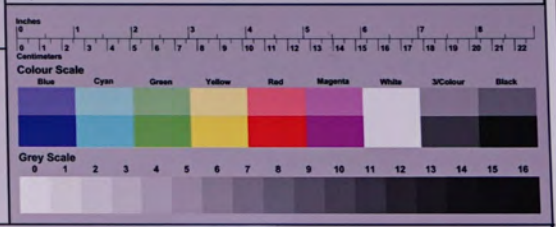
PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

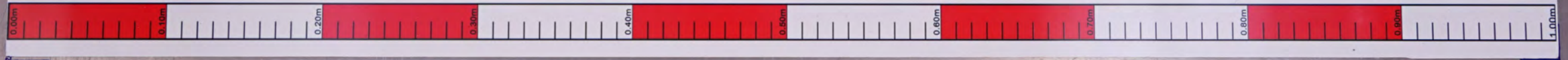


TOP

POSITION REF: BH26 CORE RUN: PUSH 1 DEPTH TOP: 0.00 (m)

DATE: 01/06/2022 BOX REF: DEPTH BASE: 1.00 (m)

BASE



NO RECOVERY

Plate 4.836

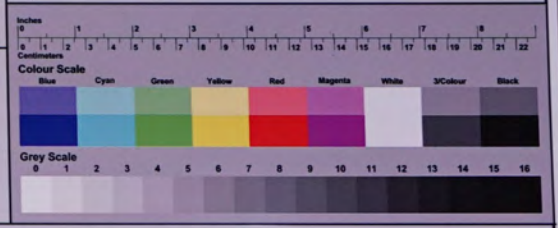
FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES



TOP

POSITION REF: BH26 CORE RUN: PUSH 2 DEPTH TOP: 0.00 (m)

DATE: 01/06/2022 BOX REF: DEPTH BASE: 1.00 (m)

BASE

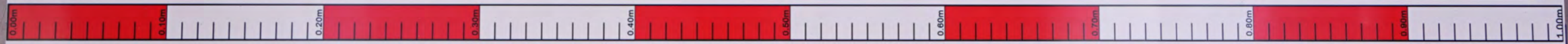


Plate 4.837

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

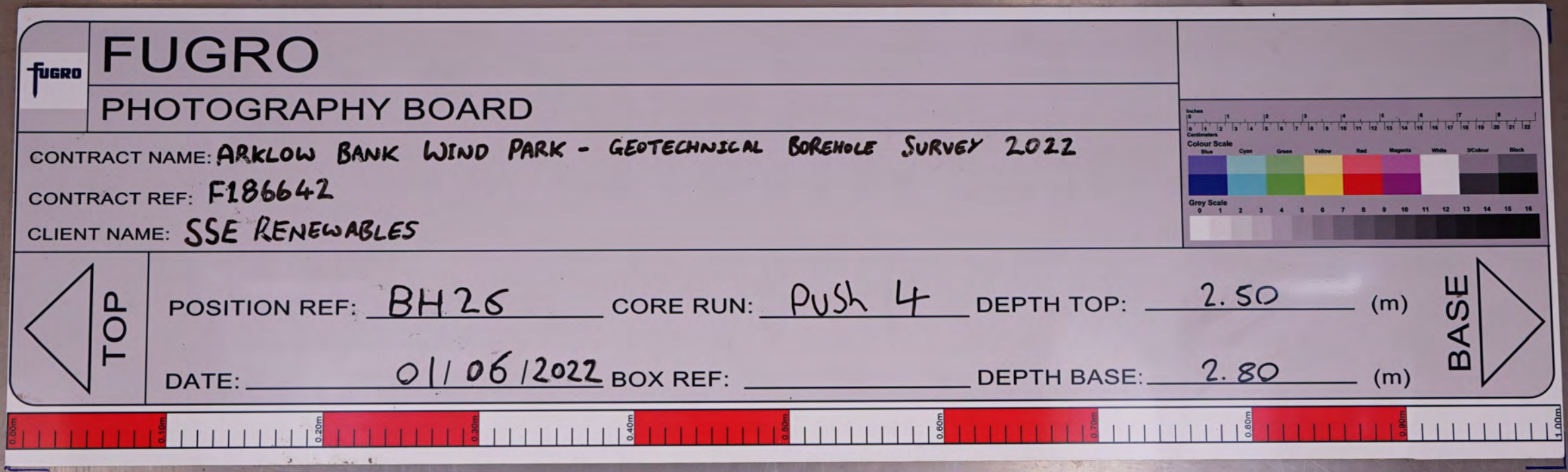
POSITION REF: BH26 CORE RUN: Push 3 DEPTH TOP: 2.00 (m)

DATE: 01/06/2022 BOX REF: DEPTH BASE: 2.50 (m)

BASE

NO RECOVERY

Plate 4.838


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Push 4
DEPTH TOP: 2.50 (m)
DATE: 01/06/2022
BOX REF:
DEPTH BASE: 2.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

NO RECOVERY

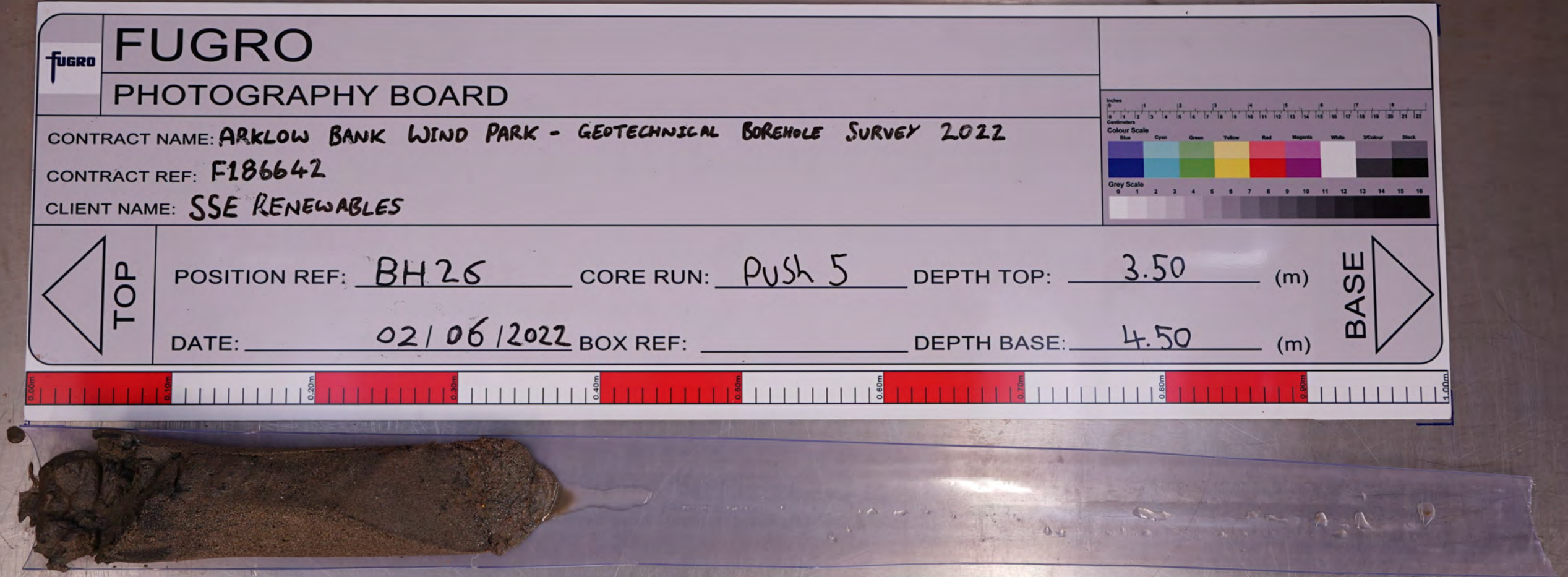

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Push 5
DEPTH TOP: 3.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.840

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: Push 5 DEPTH TOP: 3.50 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 4.50 (m)

BASE



Plate 4.841

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: Push 6 DEPTH TOP: 5.00 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 6.00 (m)

BASE



Plate 4.842

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: Push 6 DEPTH TOP: 5.00 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 6.00 (m)

BASE



Plate 4.843

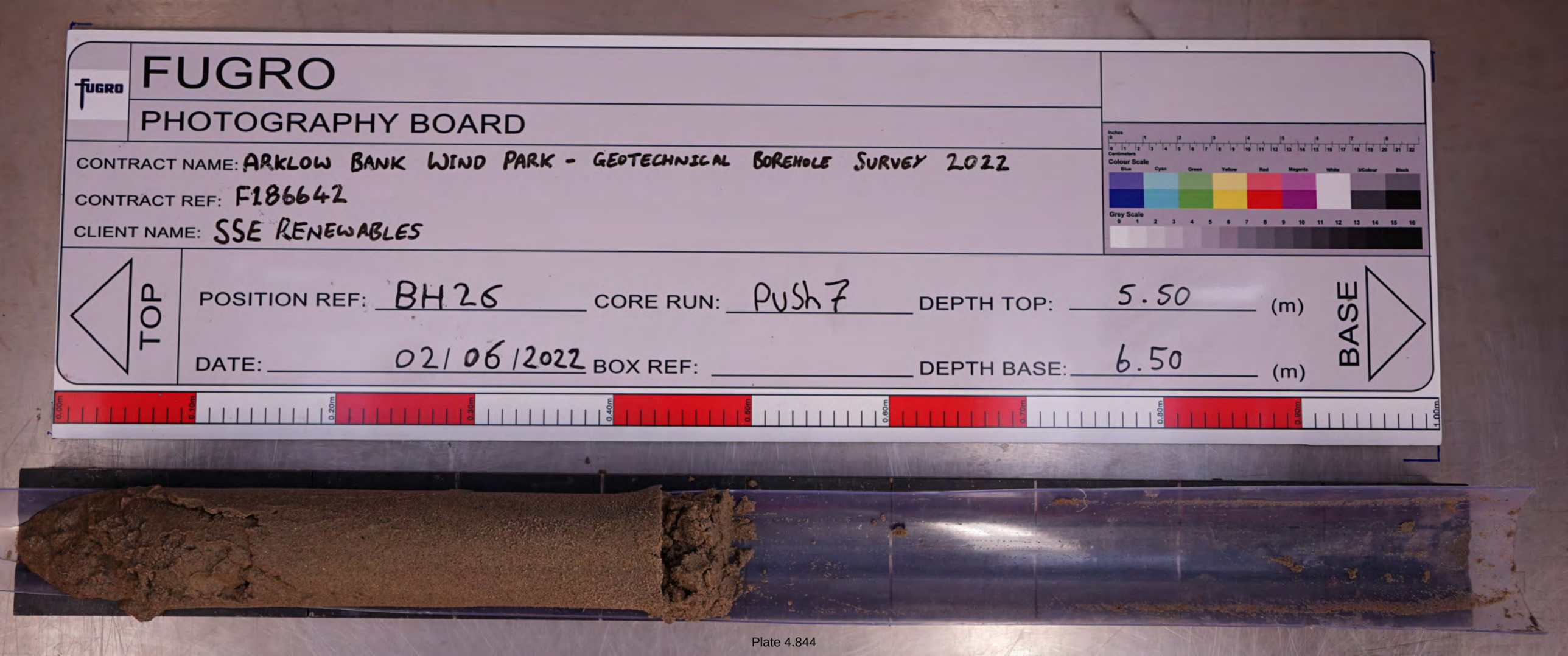
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH7
DEPTH TOP: 5.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 6.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.844


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Push7
DEPTH TOP: 5.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 6.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.845

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 9 DEPTH TOP: 9.50 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 10.50 (m)

BASE



Plate 4.846

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 9 DEPTH TOP: 9.50 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 10.50 (m)

BASE



Plate 4.847

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 10 DEPTH TOP: 11.00 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 12.00 (m)

BASE



Plate 4.848


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 10
DEPTH TOP: 11.00 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 12.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.849

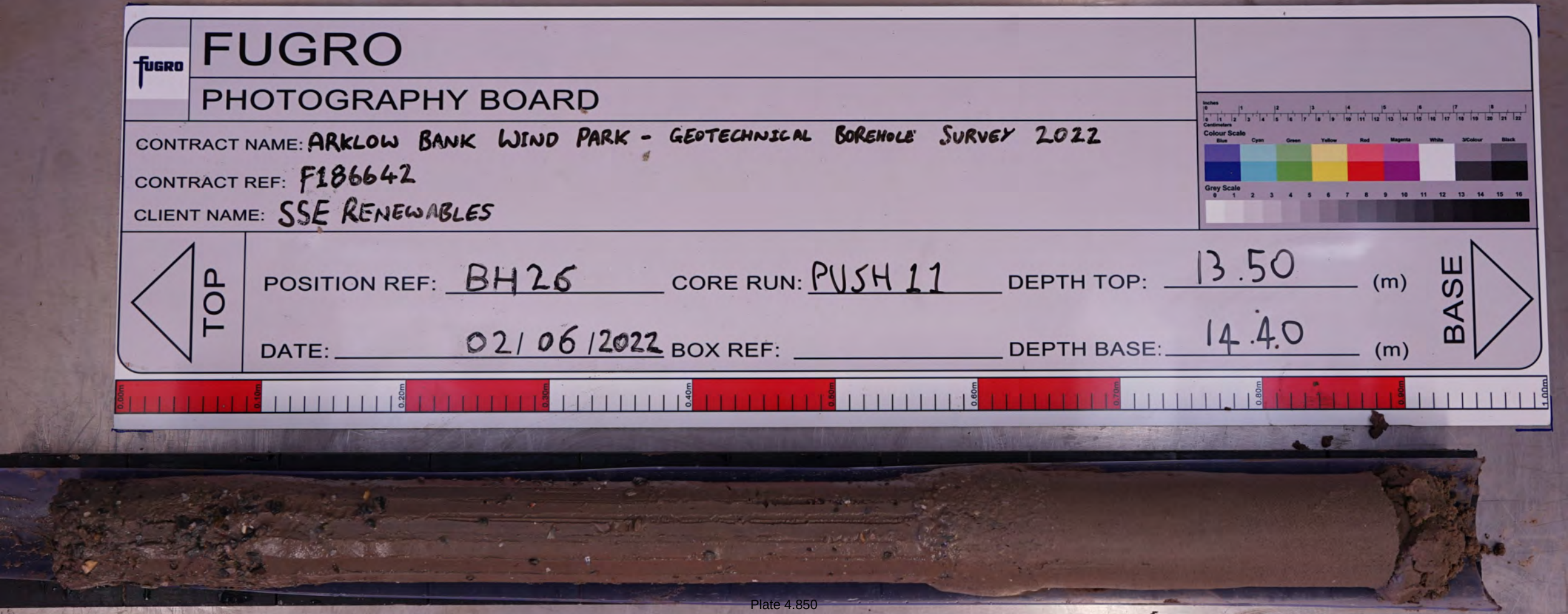

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 11
DEPTH TOP: 13.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 14.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.850

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 11 DEPTH TOP: 13.50 (m)

DATE: 02/06/2022 BOX REF: DEPTH BASE: 14.40 (m)

BASE

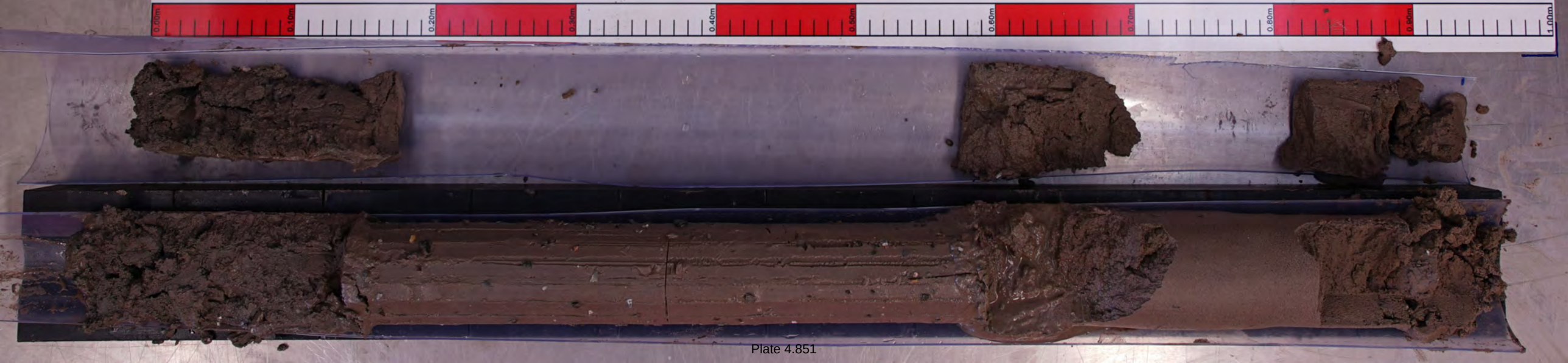


Plate 4.851

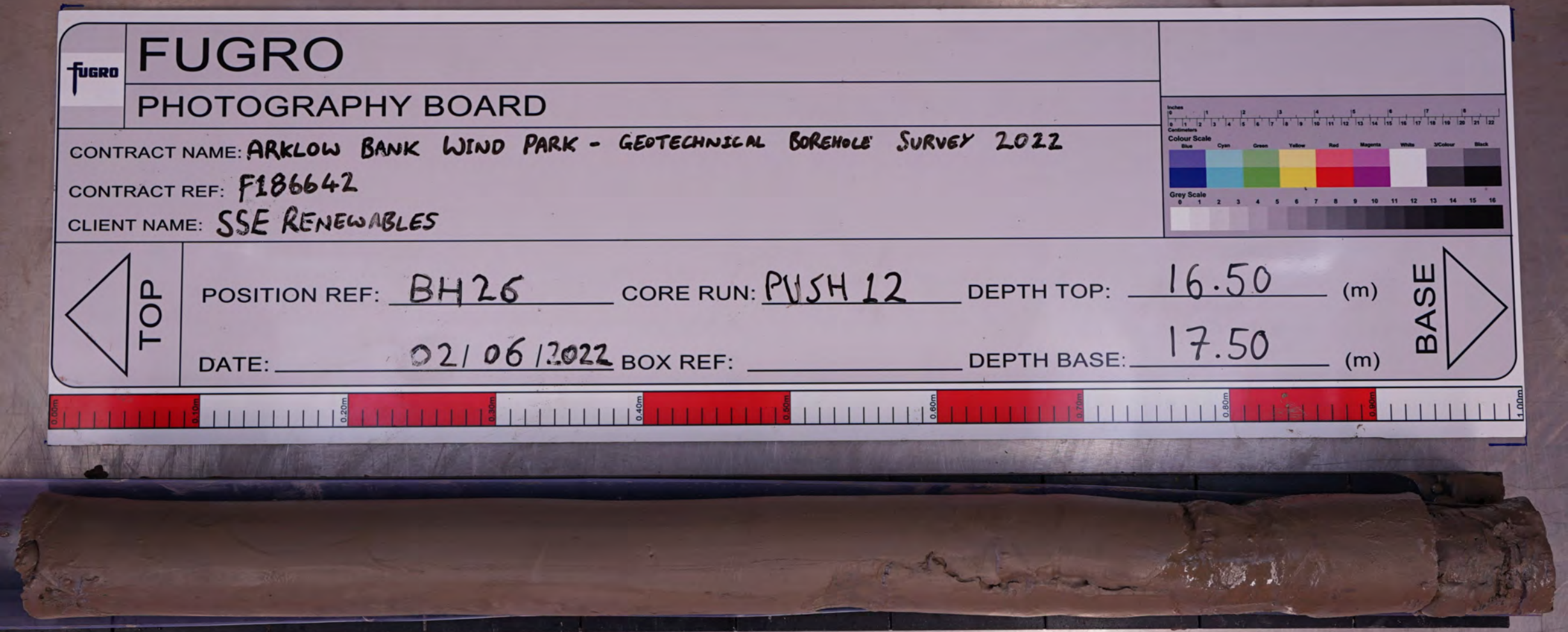

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 12
DEPTH TOP: 16.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.852

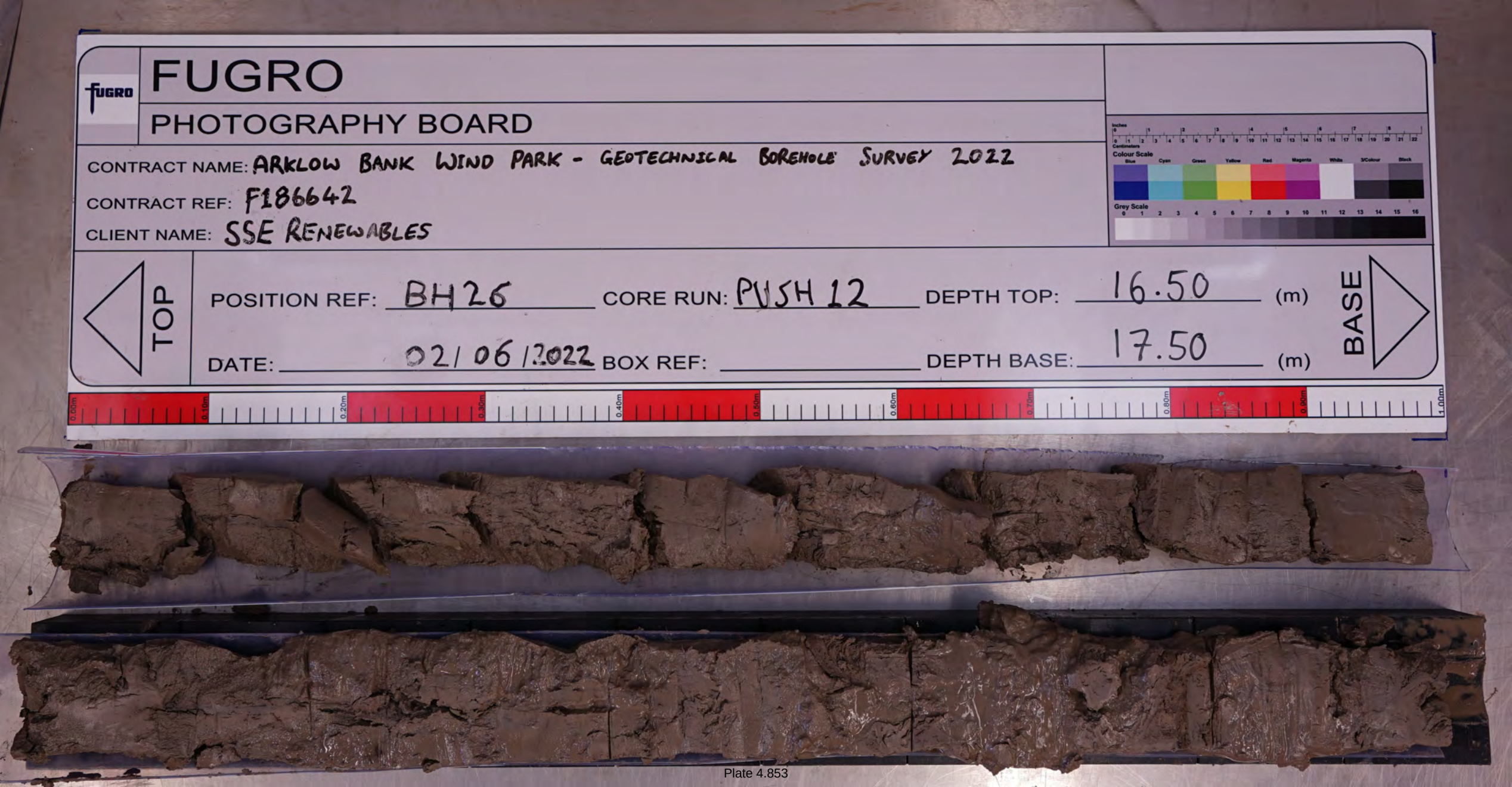

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 12
DEPTH TOP: 16.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 17.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.853

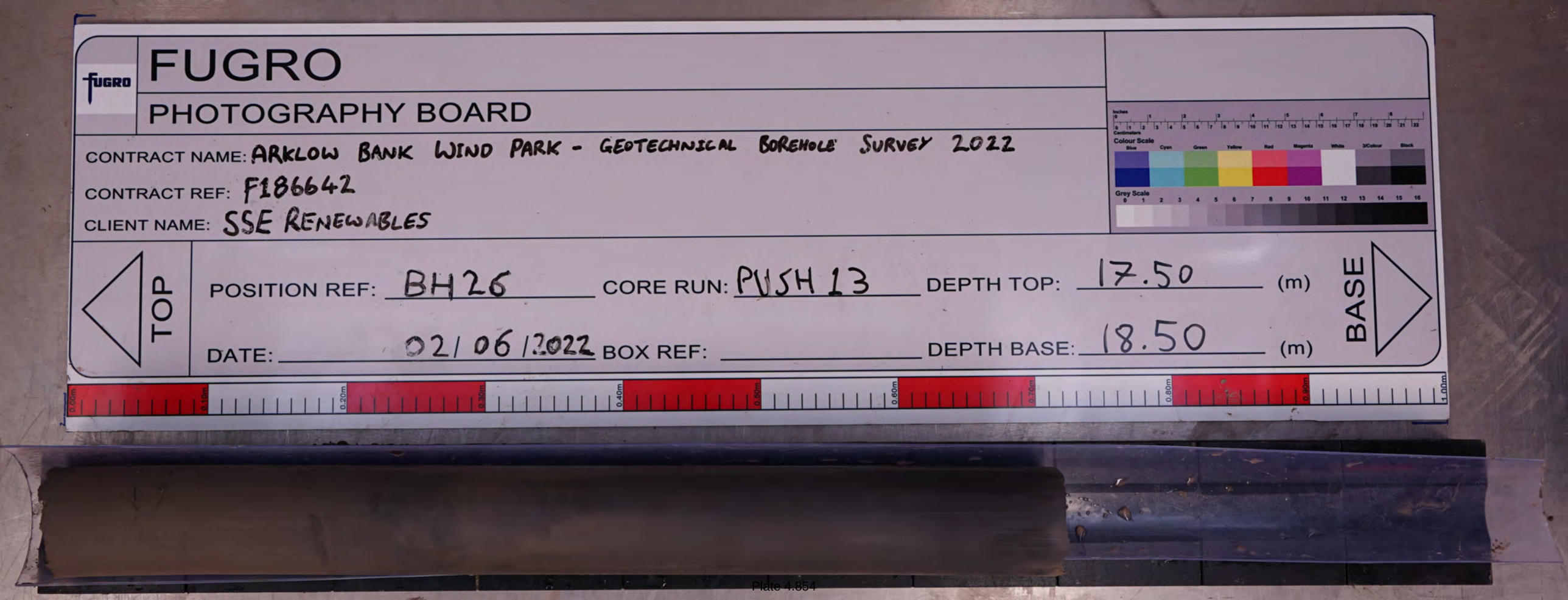
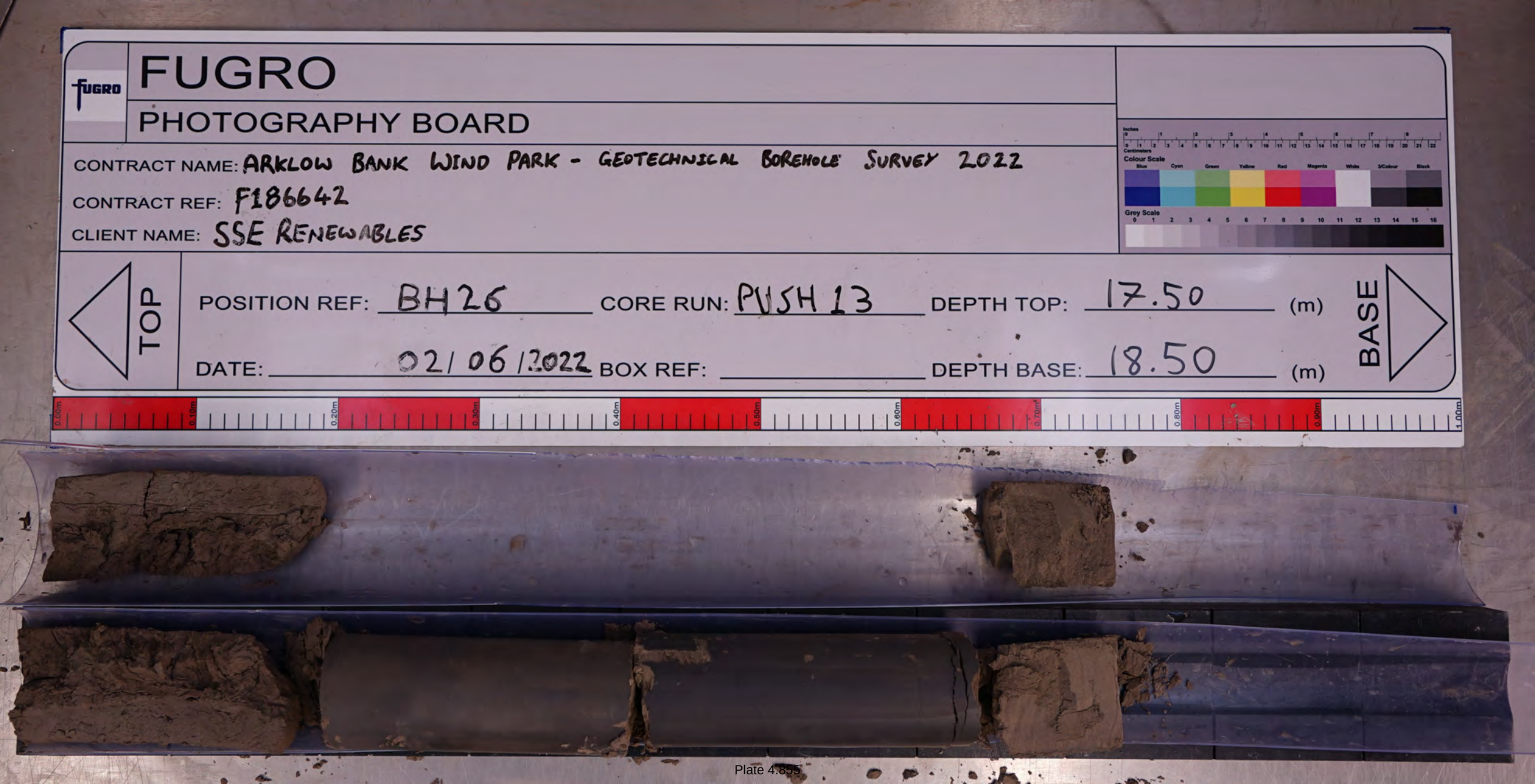
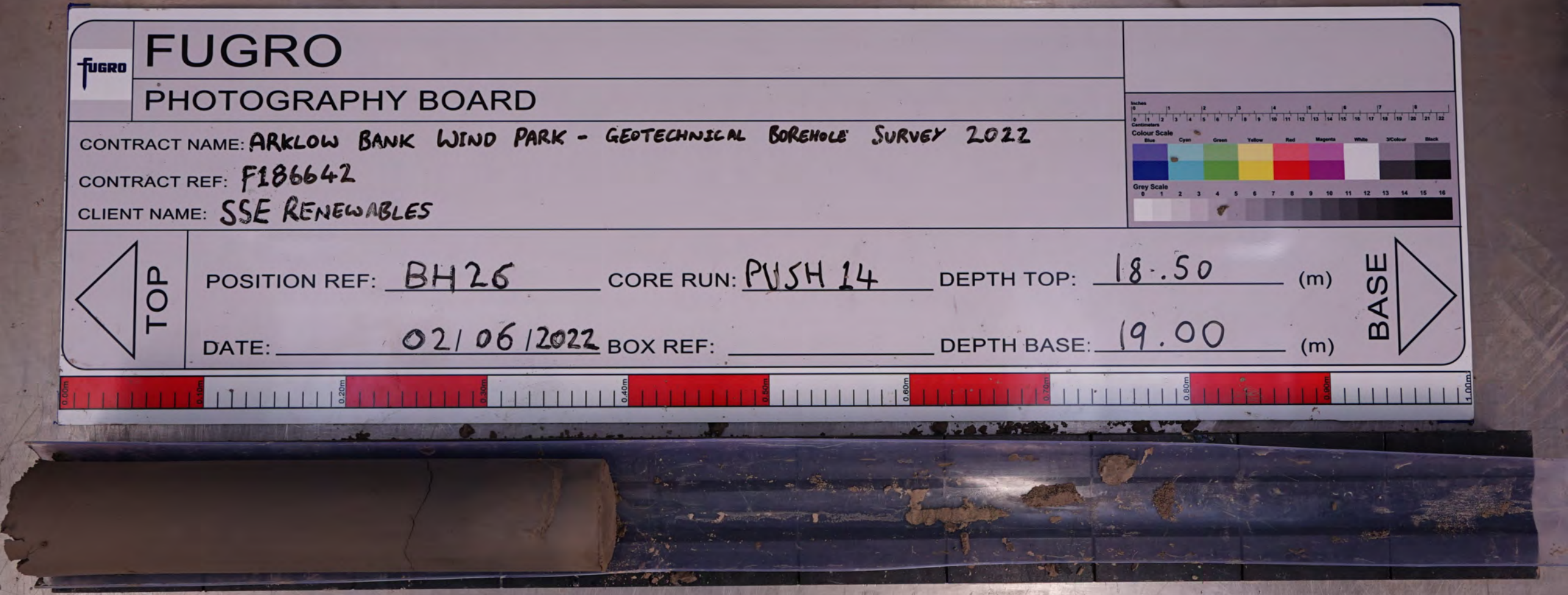

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 13
DEPTH TOP: 17.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 18.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.854


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 13
DEPTH TOP: 17.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 18.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 14
DEPTH TOP: 18.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 19.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.856

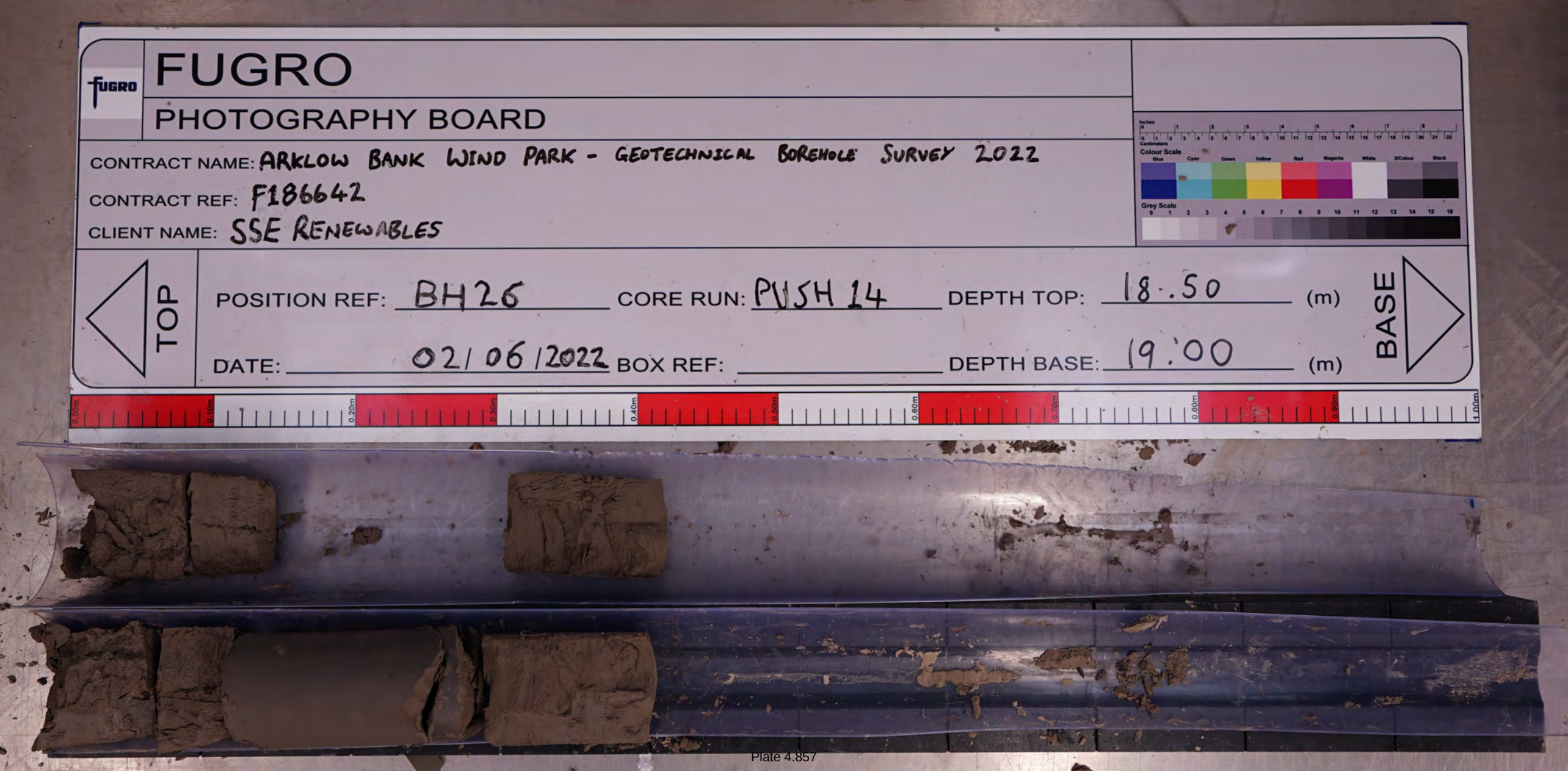

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 14
DEPTH TOP: 18.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 19.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.05m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.857

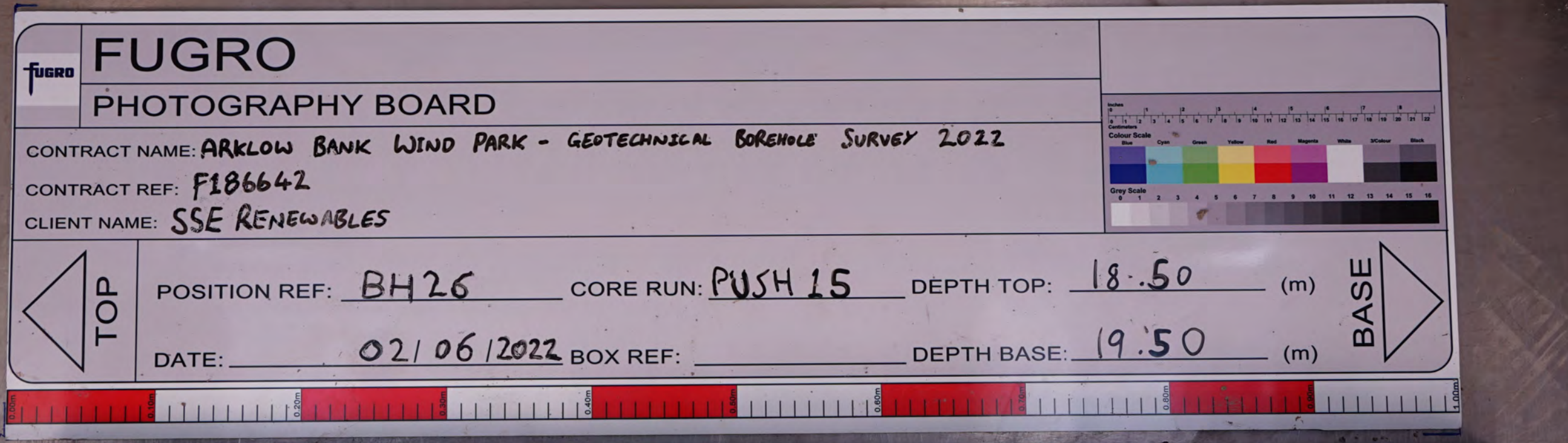

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 15
DEPTH TOP: 18.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 19.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.858

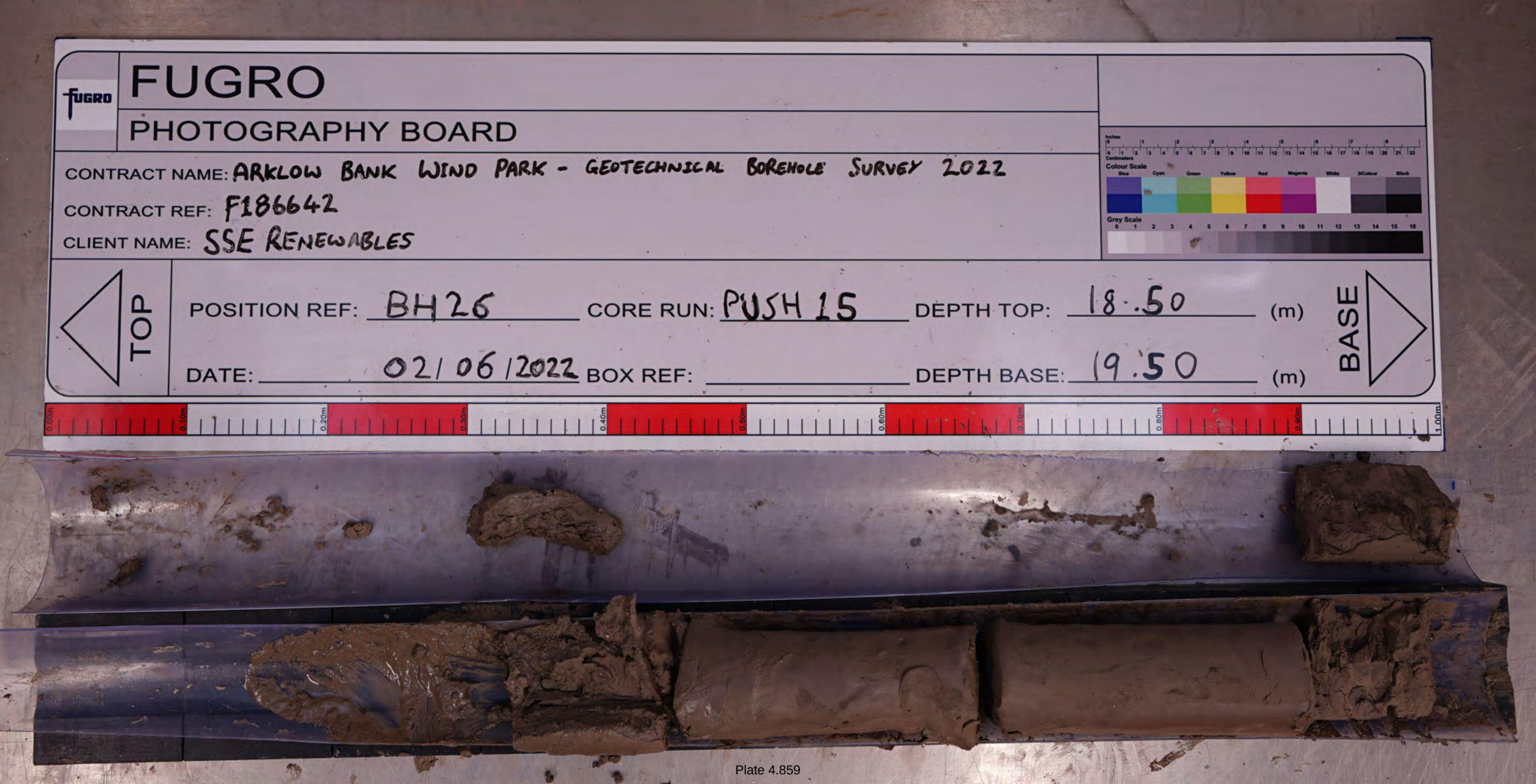

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 15
DEPTH TOP: 18.50 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 19.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.859

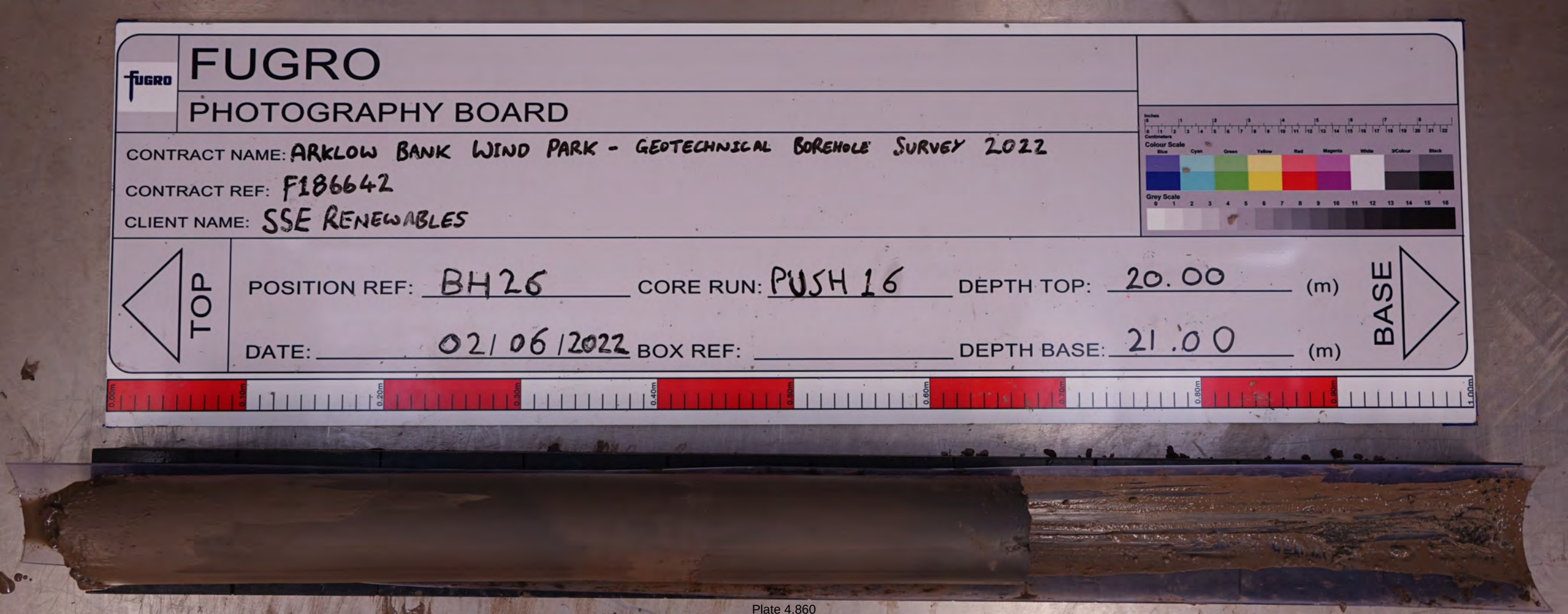

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 16
DEPTH TOP: 20.00 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 21.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.860

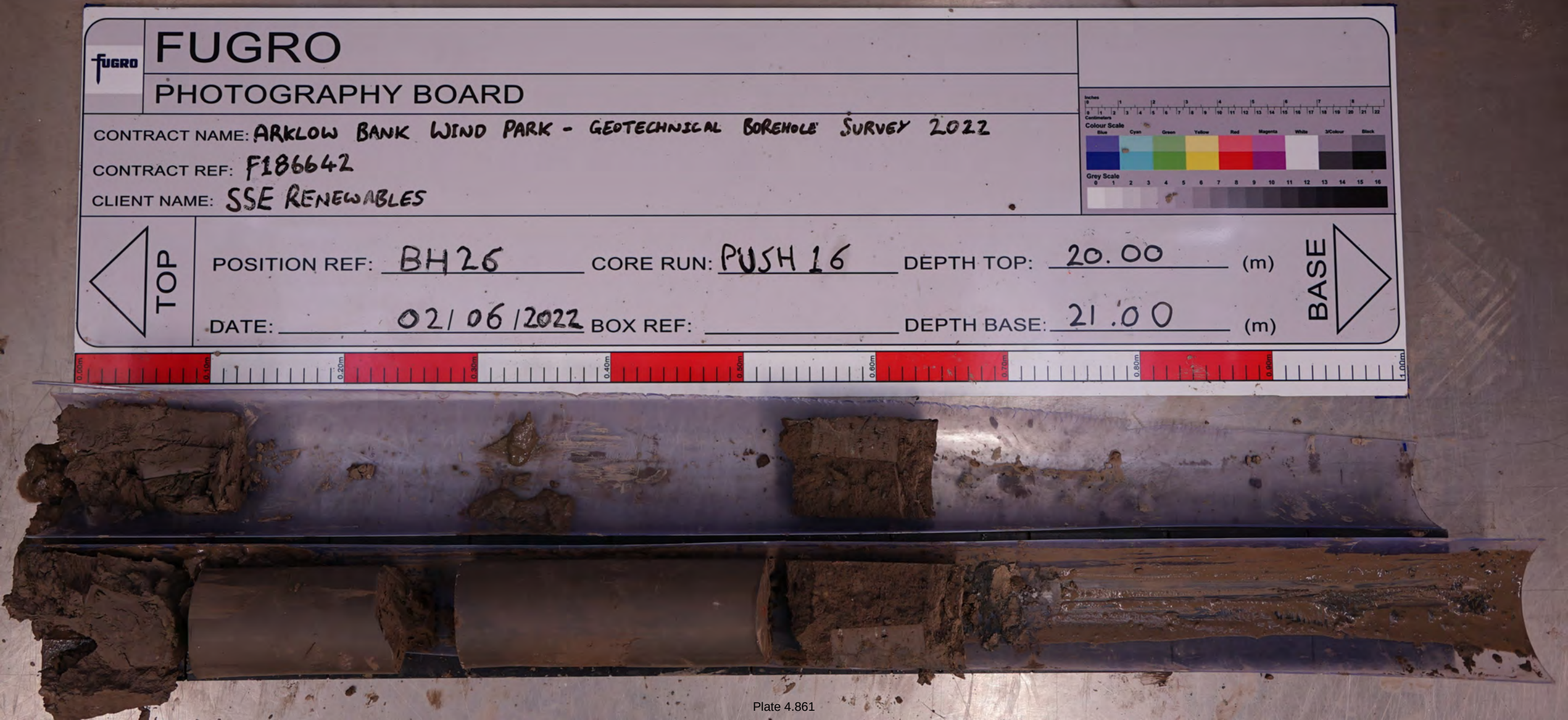

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 16
DEPTH TOP: 20.00 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 21.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.861

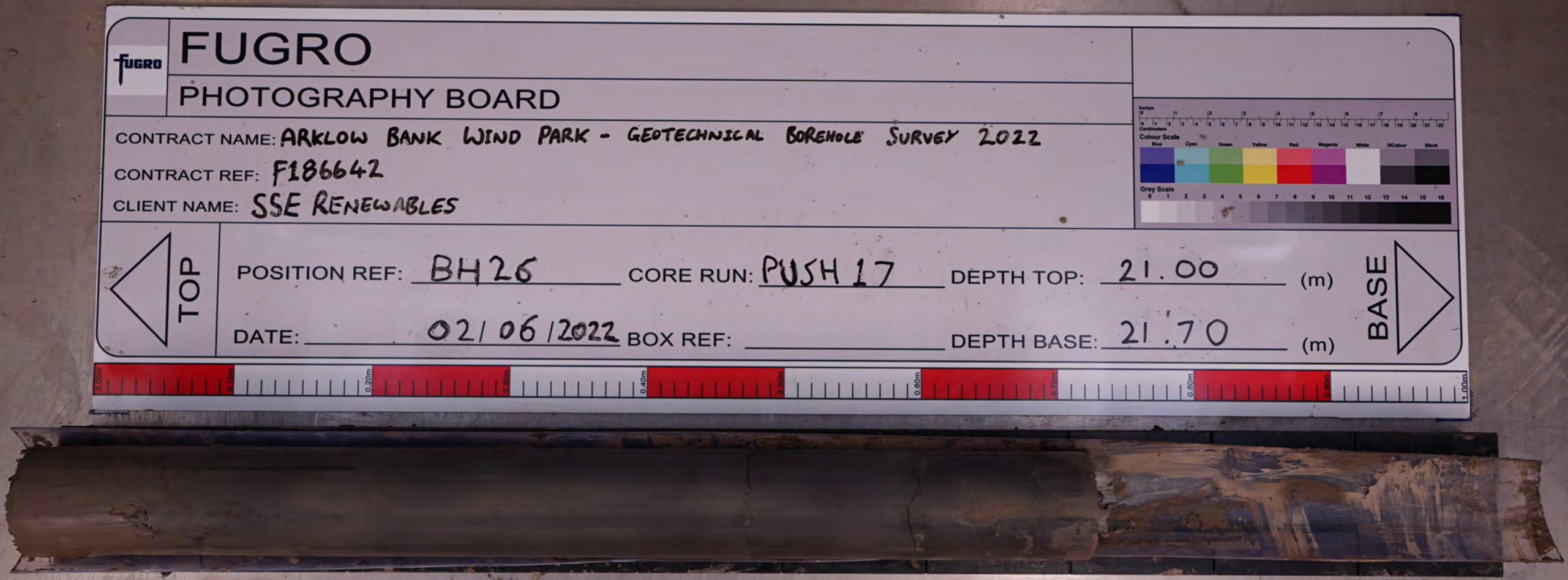
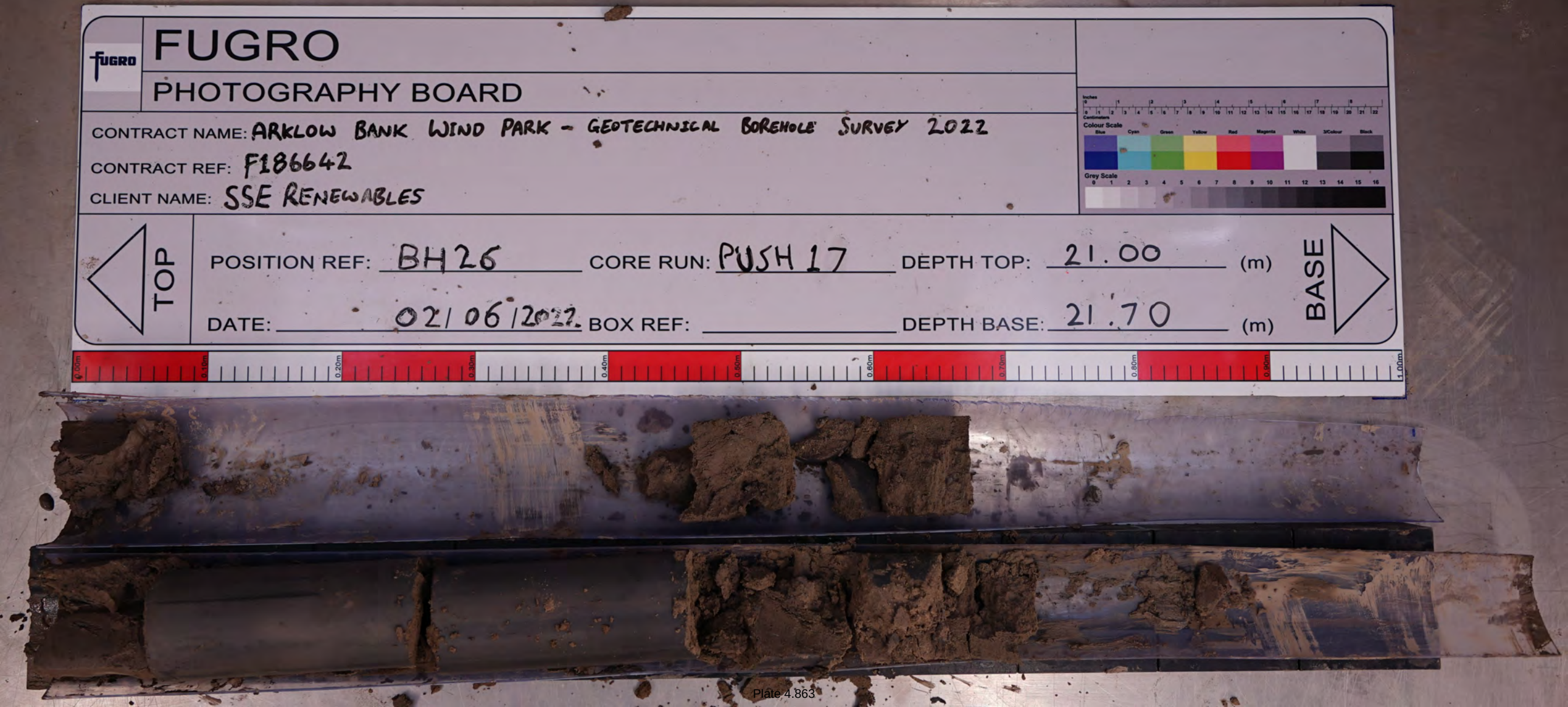

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 17
DEPTH TOP: 21.00 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 21.70 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.862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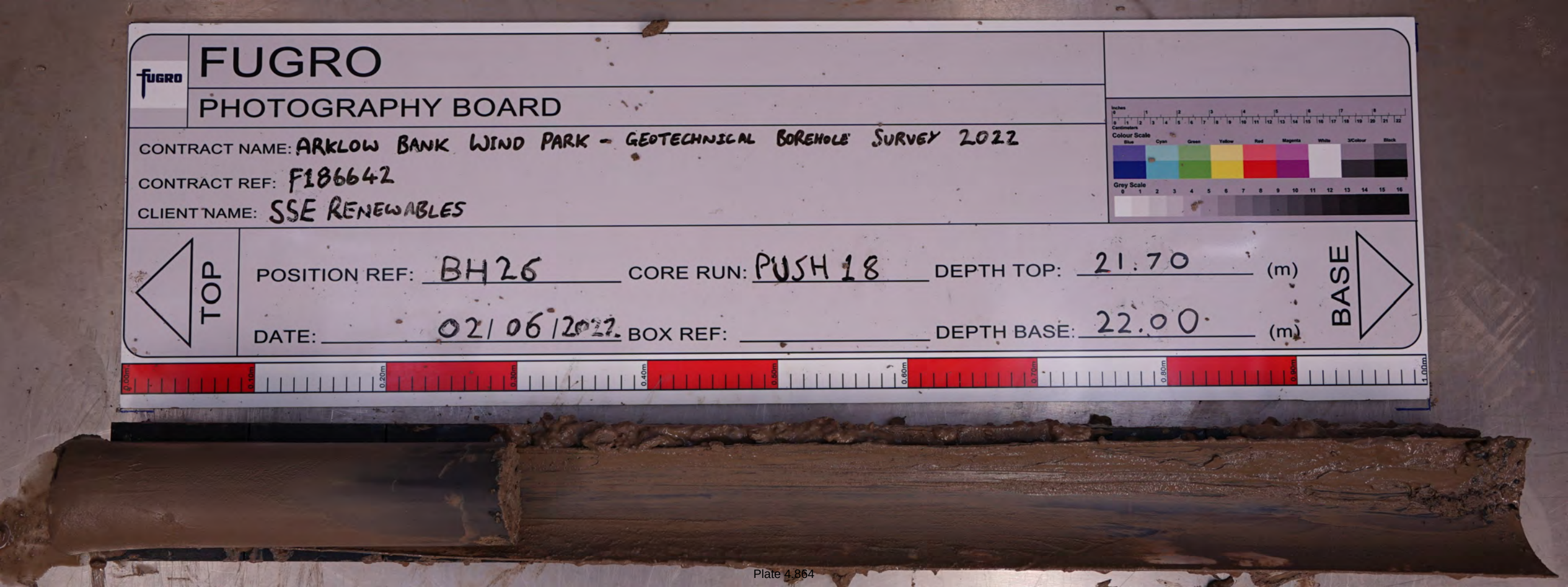
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 17
DEPTH TOP: 21.00 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 21.70 (m)
BASE
Colour Scale
Grey Scale

Plate 4.863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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 18
DEPTH TOP: 21.70 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.864

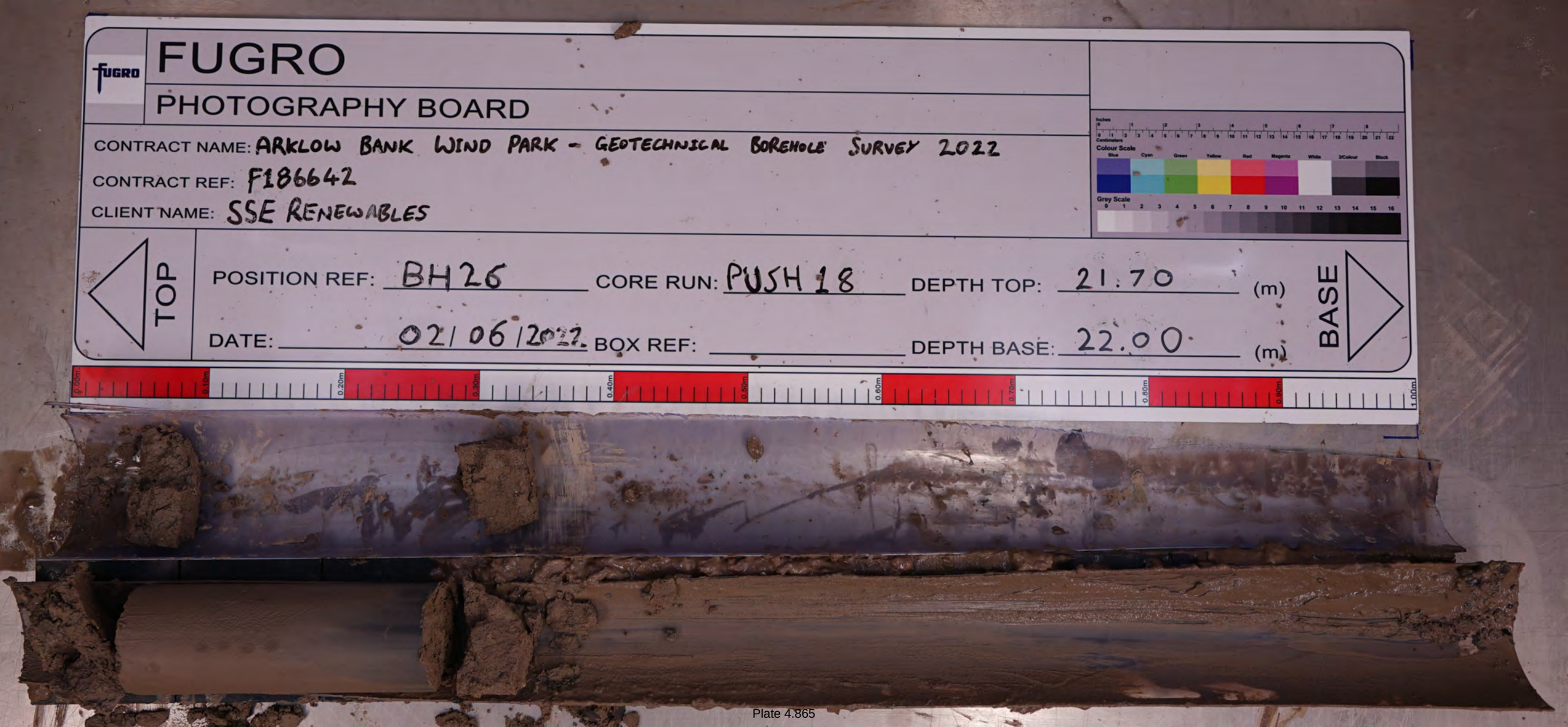
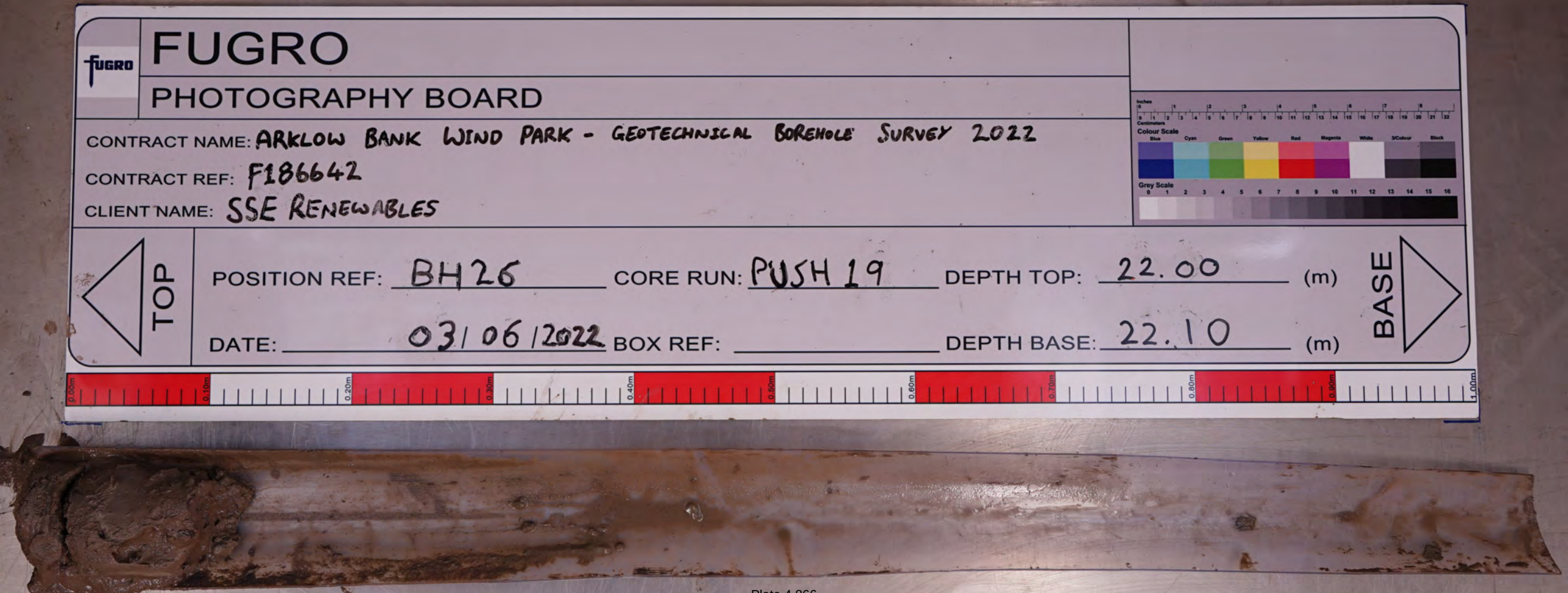

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 18
DEPTH TOP: 21.70 (m)
DATE: 02/06/2022
BOX REF:
DEPTH BASE: 22.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.865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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 19
DEPTH TOP: 22.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 22.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.866

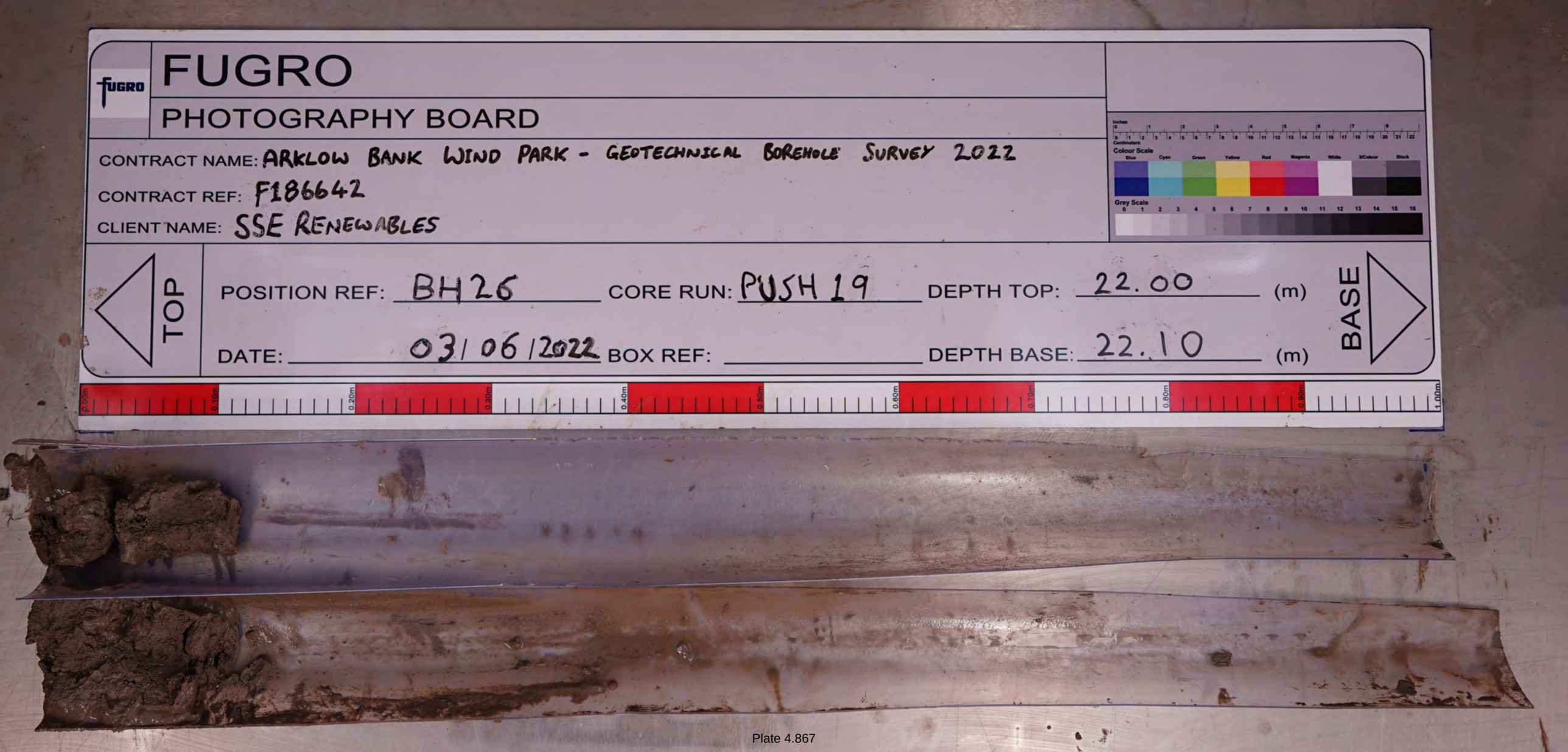
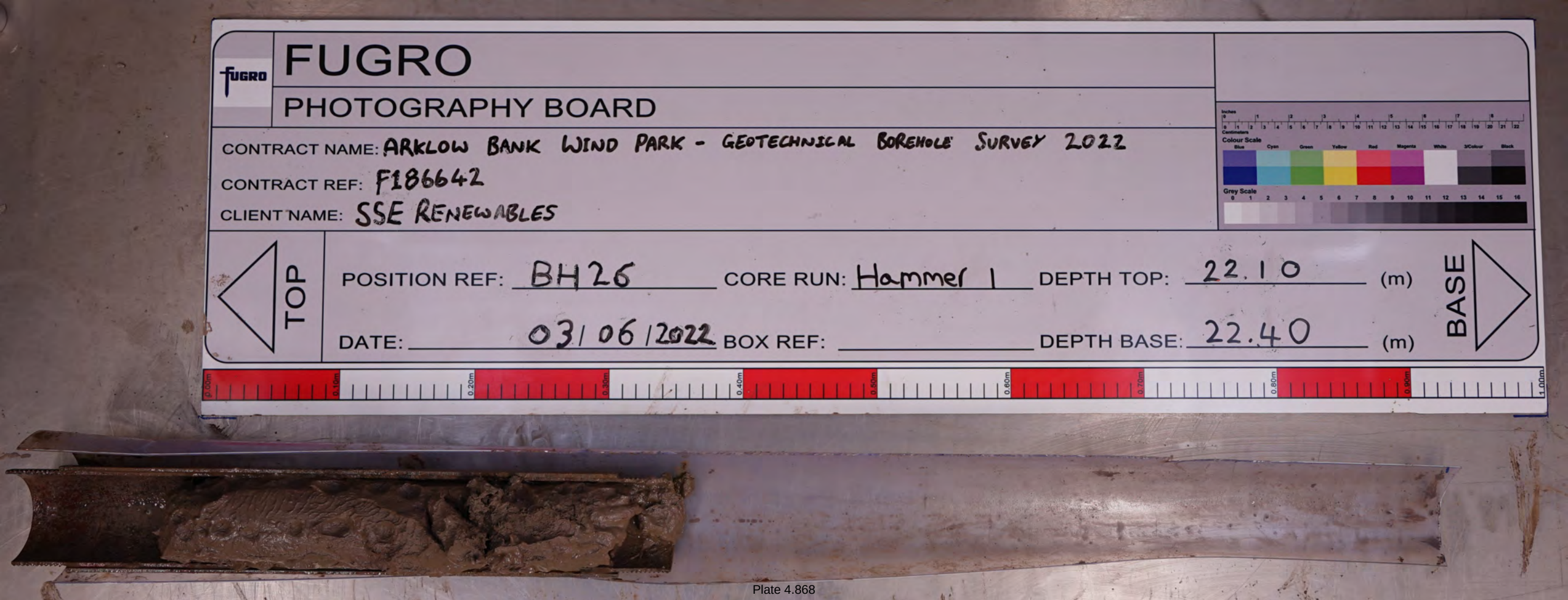

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 19
DEPTH TOP: 22.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 22.10 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.867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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Hammer 1
DEPTH TOP: 22.10 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 22.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.868


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Hammer 1
DEPTH TOP: 22.10 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 22.40 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.869

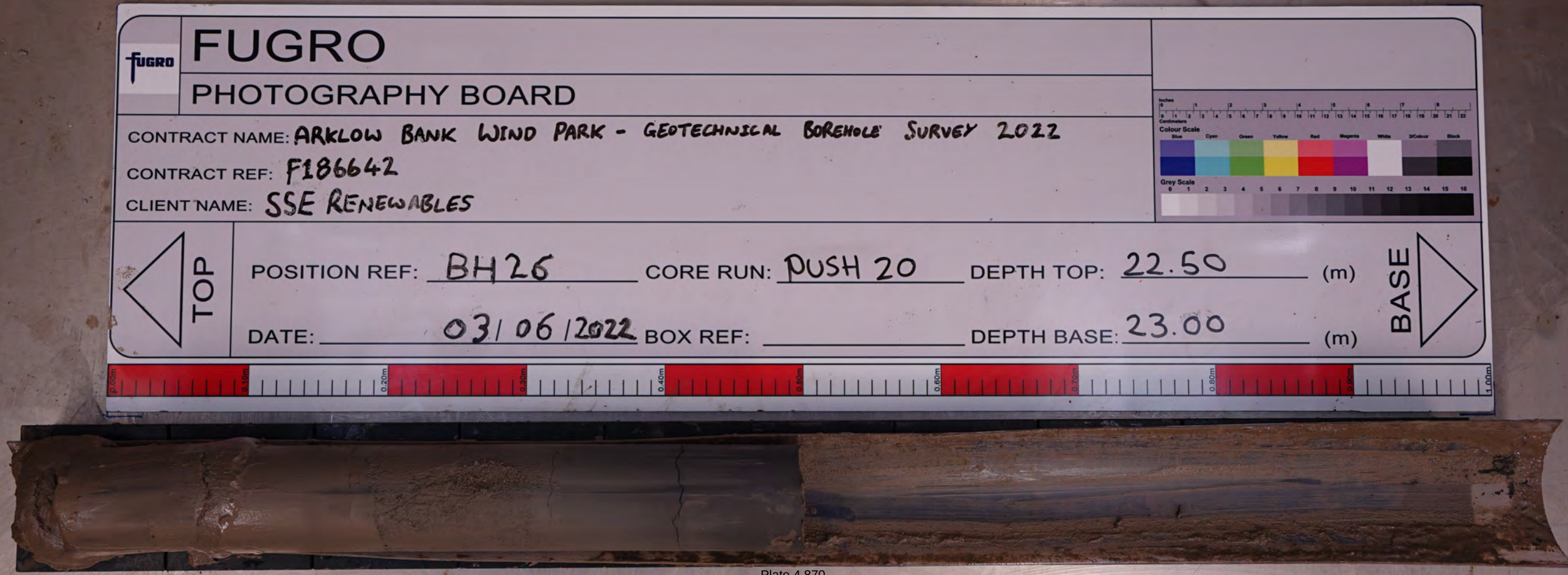
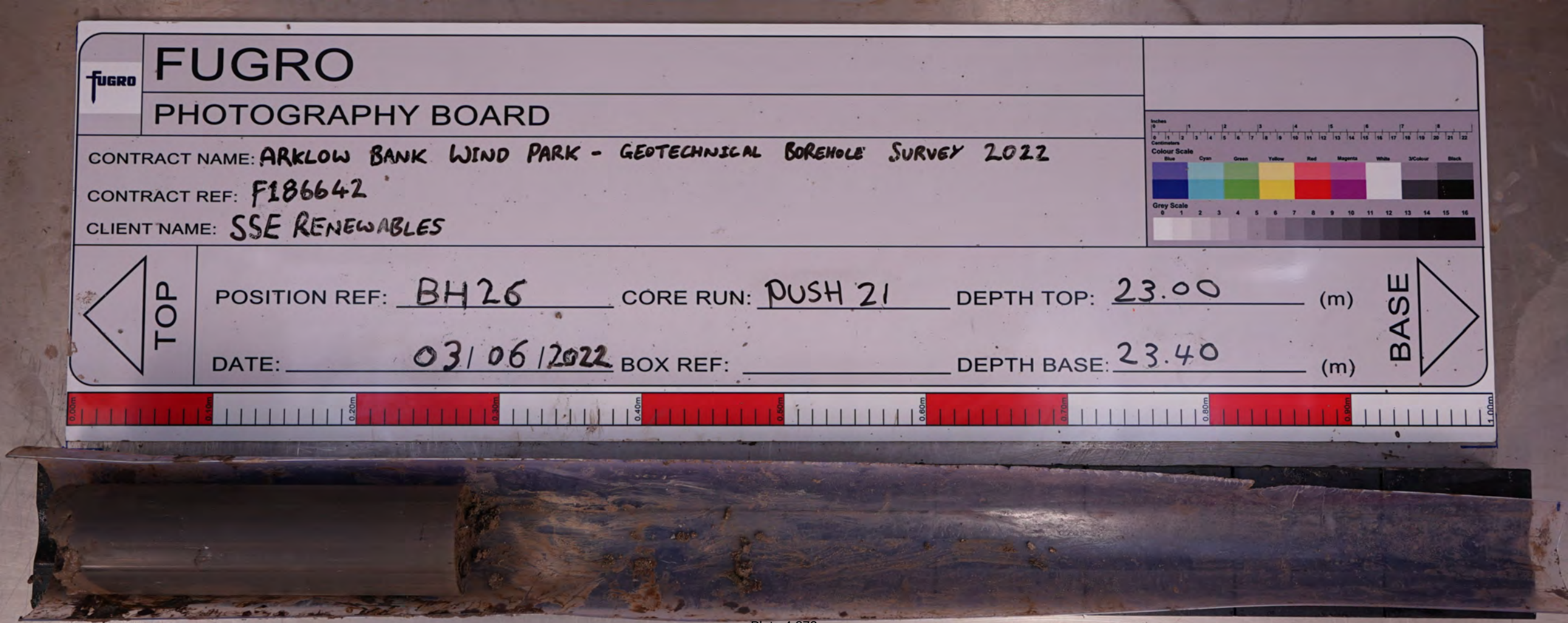

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 20
DEPTH TOP: 22.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 23.00 (m)
BASE

Plate 4.870


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 20
DEPTH TOP: 22.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 23.00 (m)
BASE

Plate 4.871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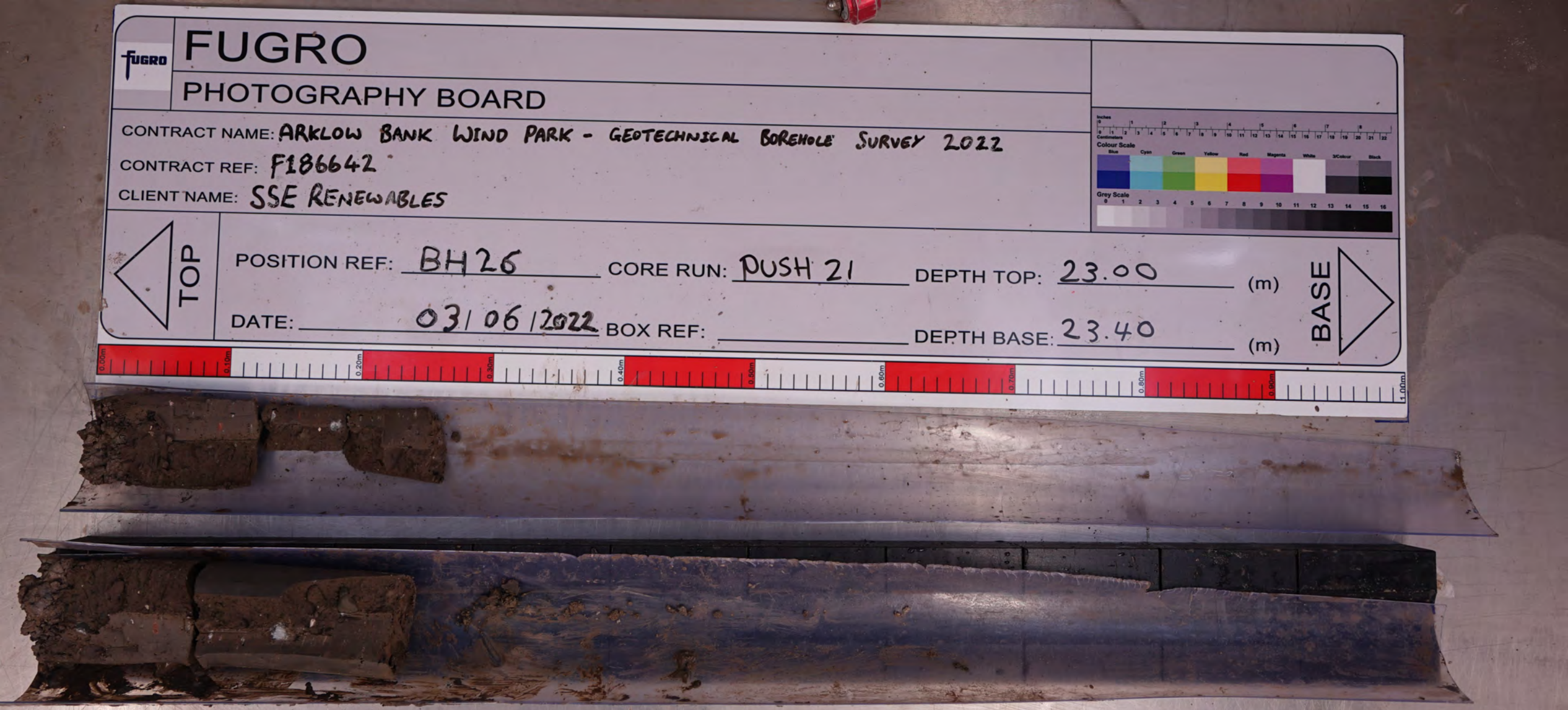
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 21
DEPTH TOP: 23.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 23.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.872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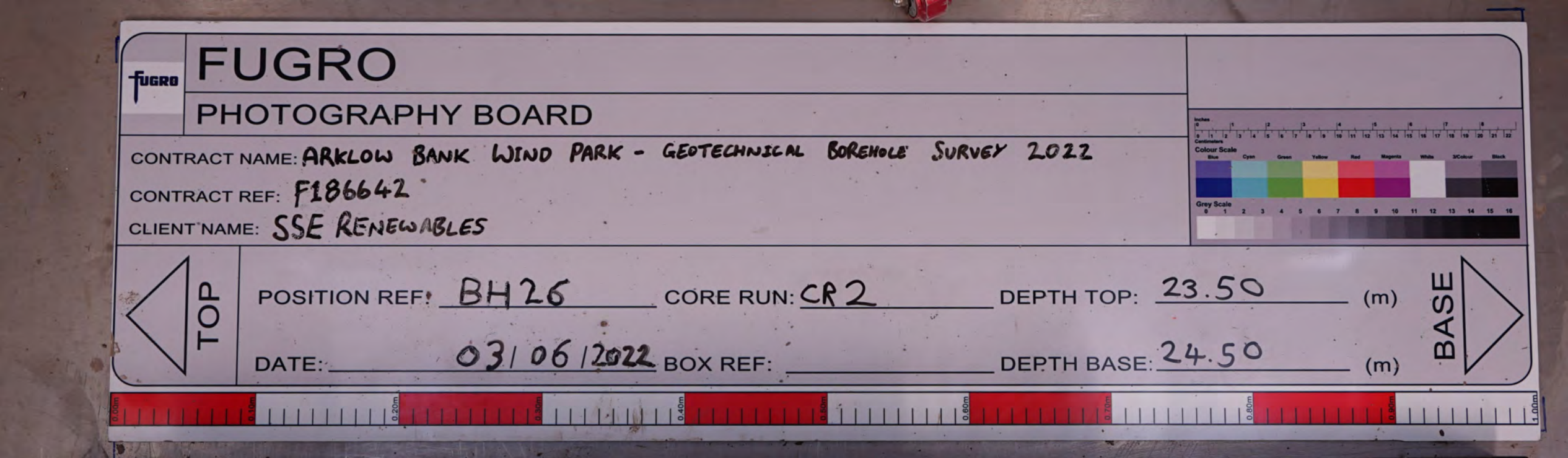
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 21
DEPTH TOP: 23.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 23.40 (m)
BASE
Colour Scale
Grey Scale

Plate 4.873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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR2
DEPTH TOP: 23.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.874


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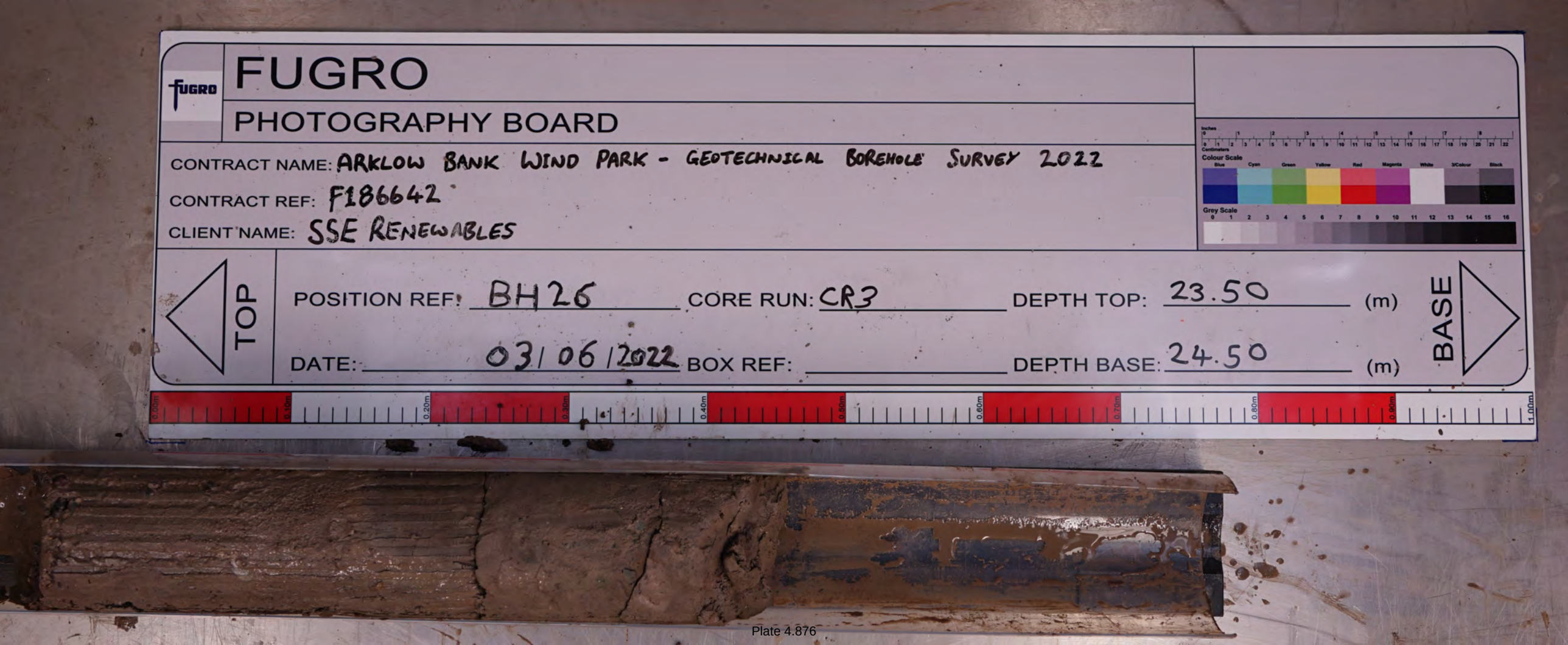
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR2
DEPTH TOP: 23.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.875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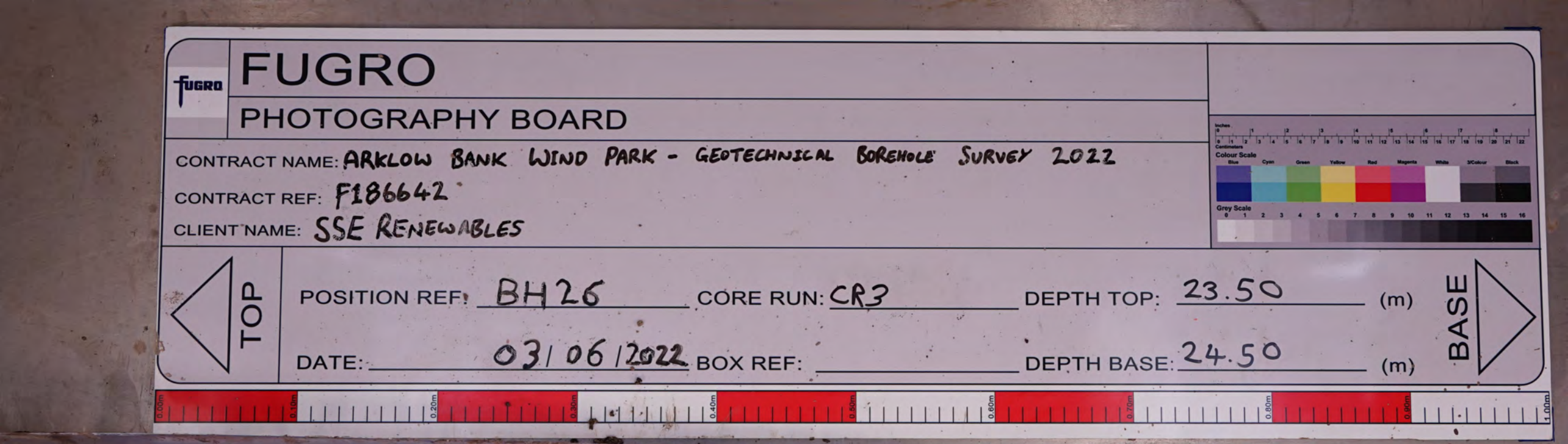
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR3
DEPTH TOP: 23.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.876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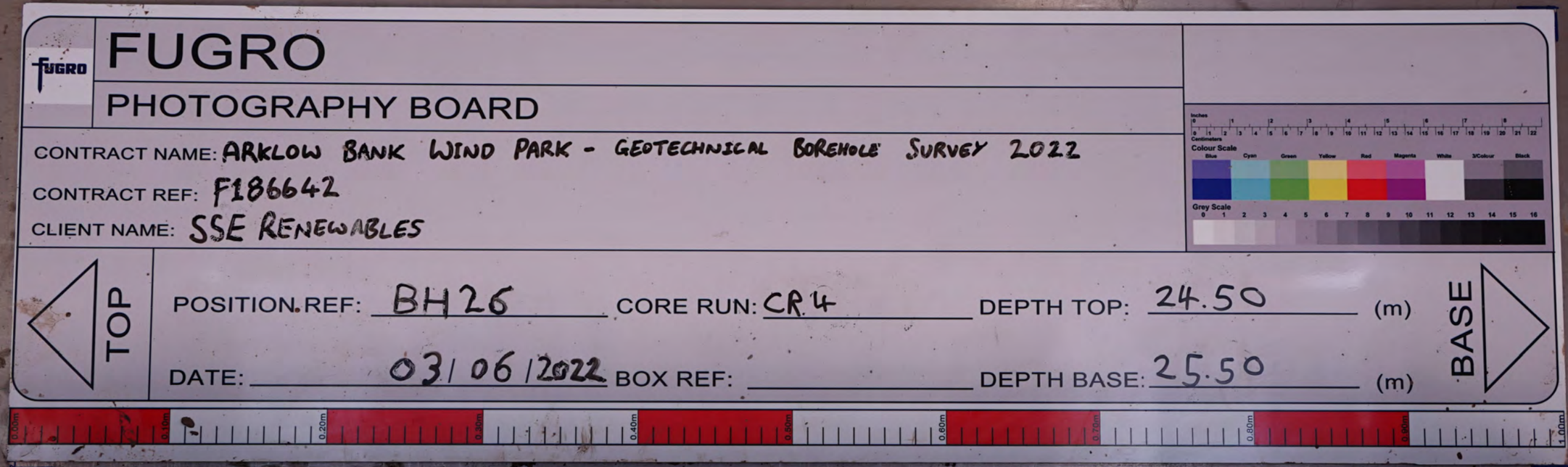
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR3
DEPTH TOP: 23.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.877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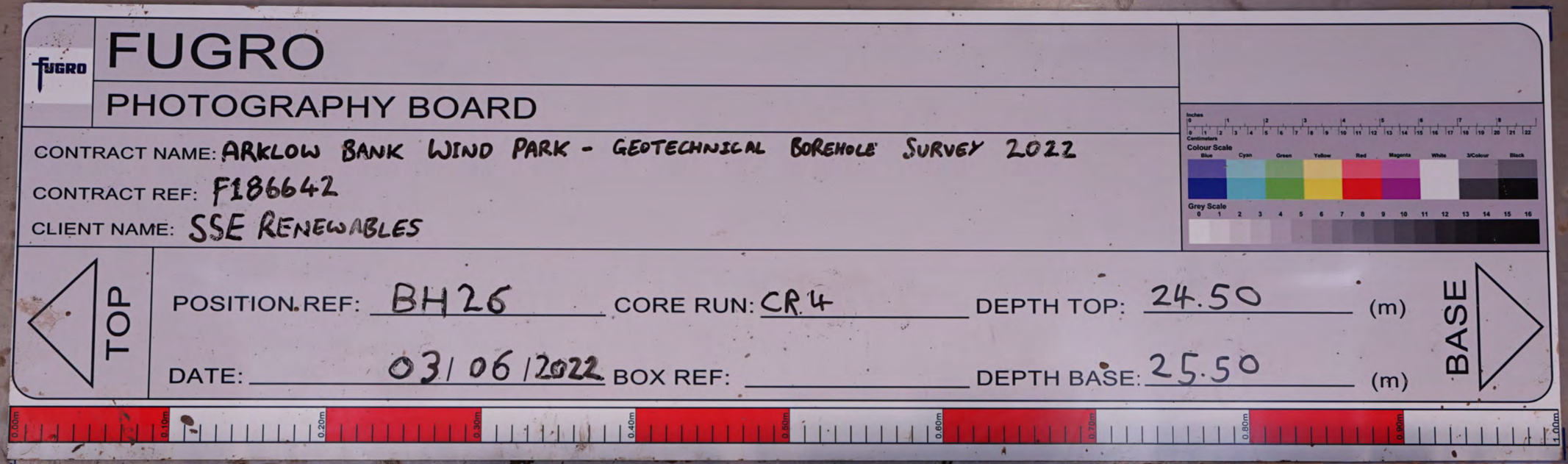
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR4
DEPTH TOP: 24.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.878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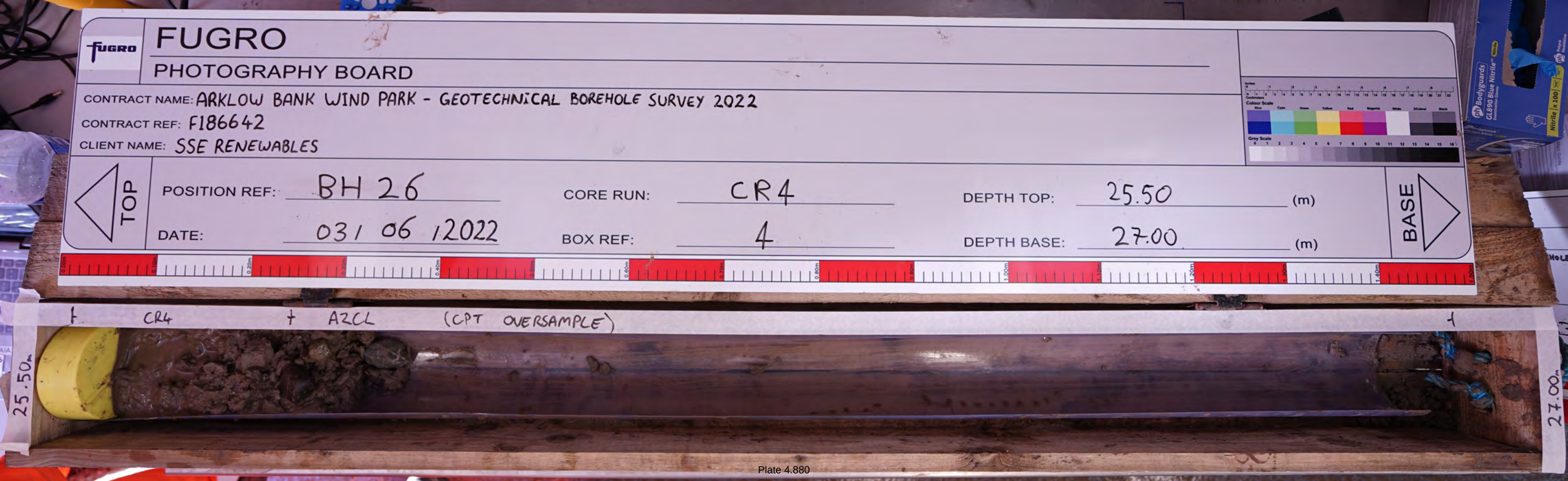
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR4
DEPTH TOP: 24.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.879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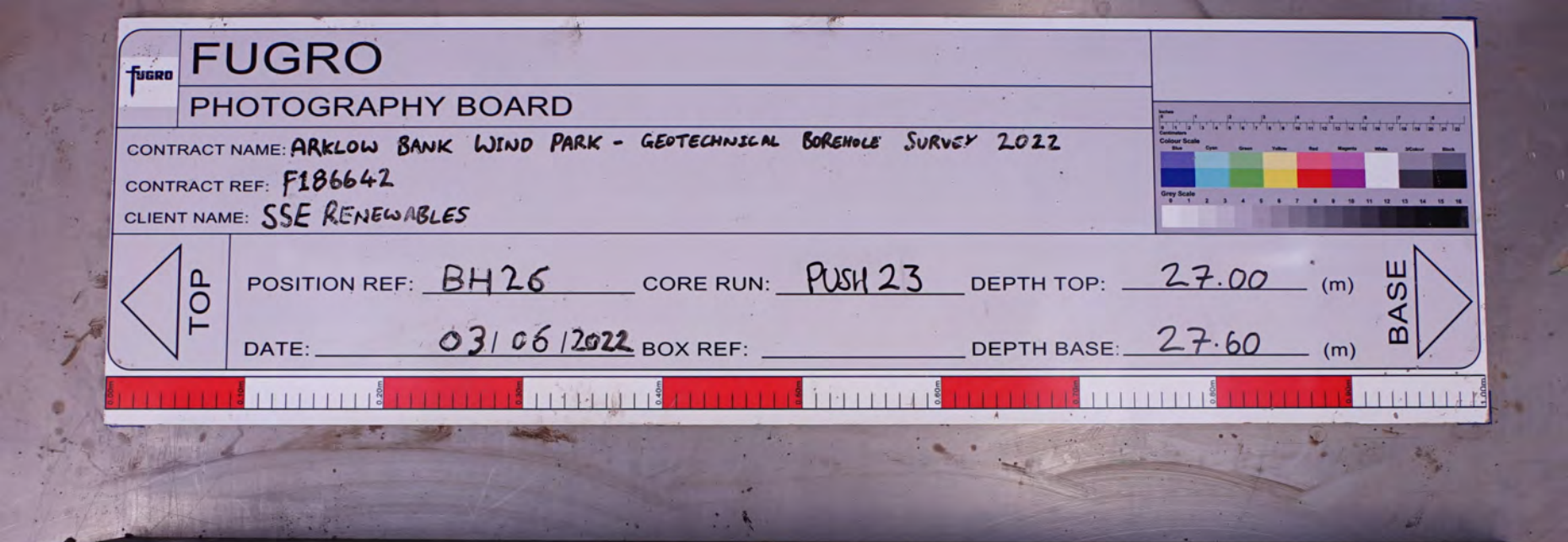
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 26
CORE RUN: CR4
DEPTH TOP: 25.50 (m)
DATE: 031 06 12022
BOX REF: 4
DEPTH BASE: 27.00 (m)
BASE
CR4 A2CL (CPT OVERSAMPLE)
25.50m
27.00m

Plate 4.880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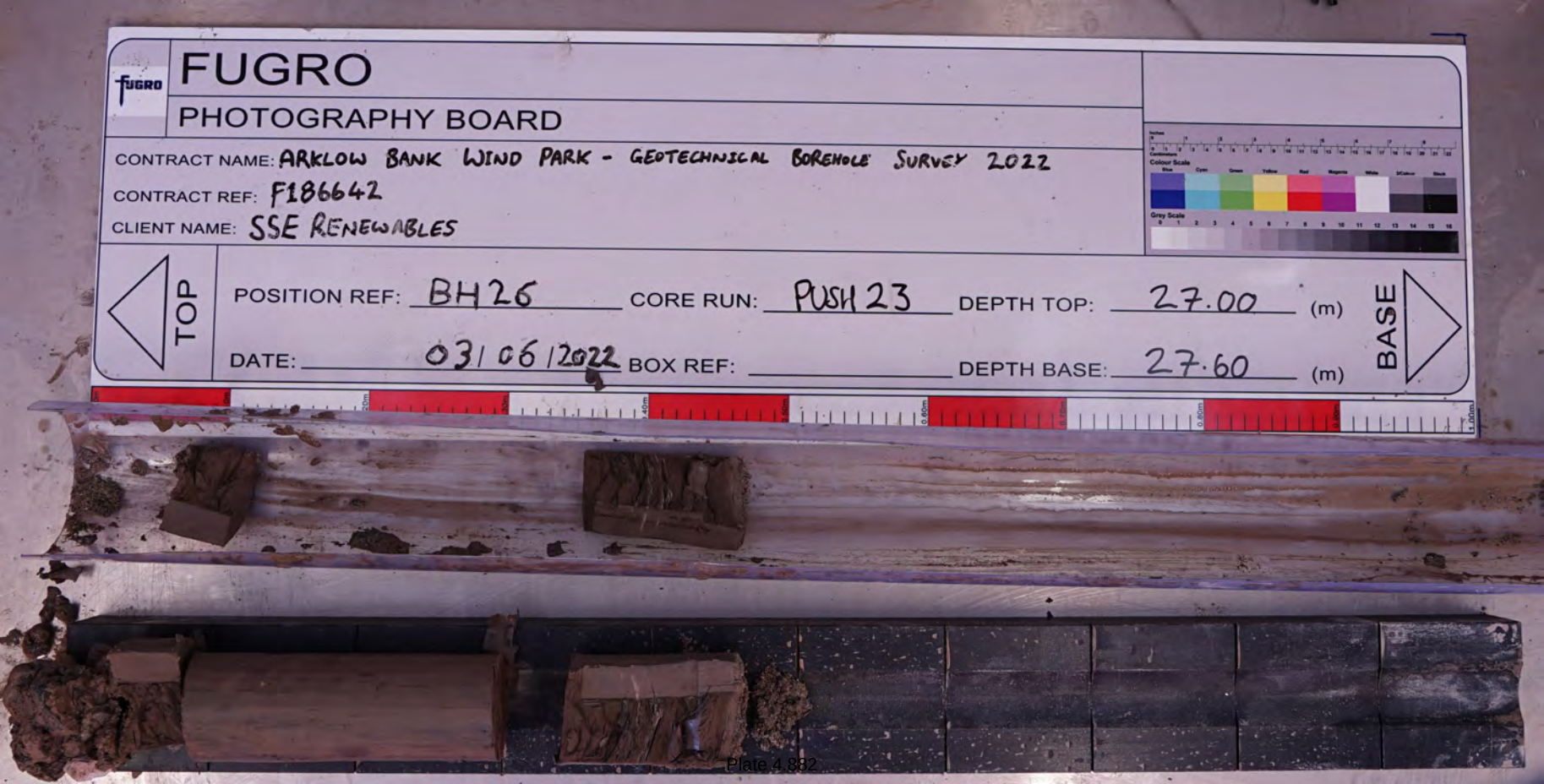
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 23
DEPTH TOP: 27.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 27.60 (m)
BASE

Plate 4.881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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 23
DEPTH TOP: 27.00 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 27.60 (m)
BASE

Plate 4.882

PROJECT No
BORE HOLE
SAMPLE
DEPTH (m)

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

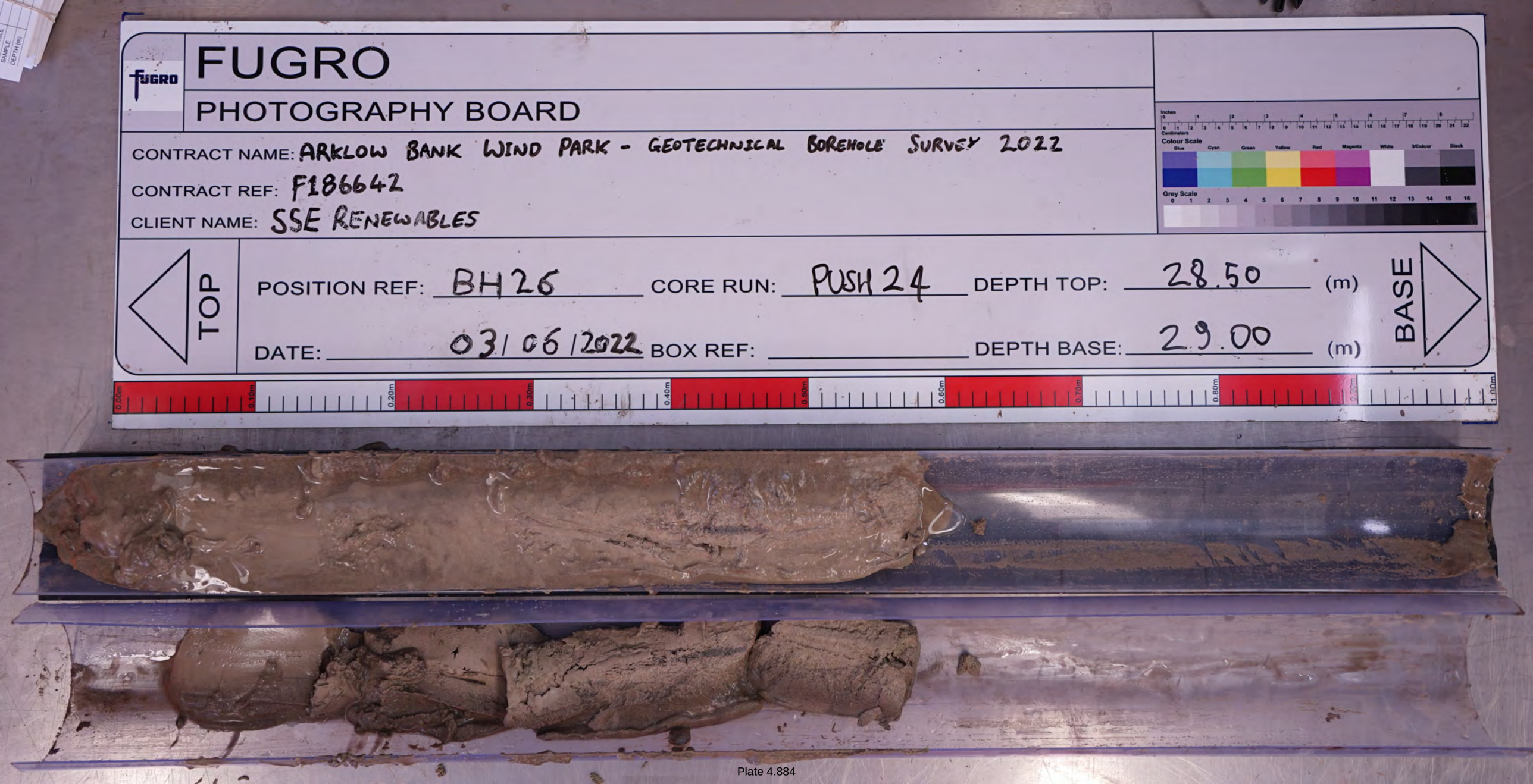
POSITION REF: BH26 CORE RUN: PUSH 24 DEPTH TOP: 28.50 (m)

DATE: 03/06/2022 BOX REF: DEPTH BASE: 29.00 (m)

BASE



Plate 4.883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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 24
DEPTH TOP: 28.50 (m)
DATE: 03/06/2022
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.884

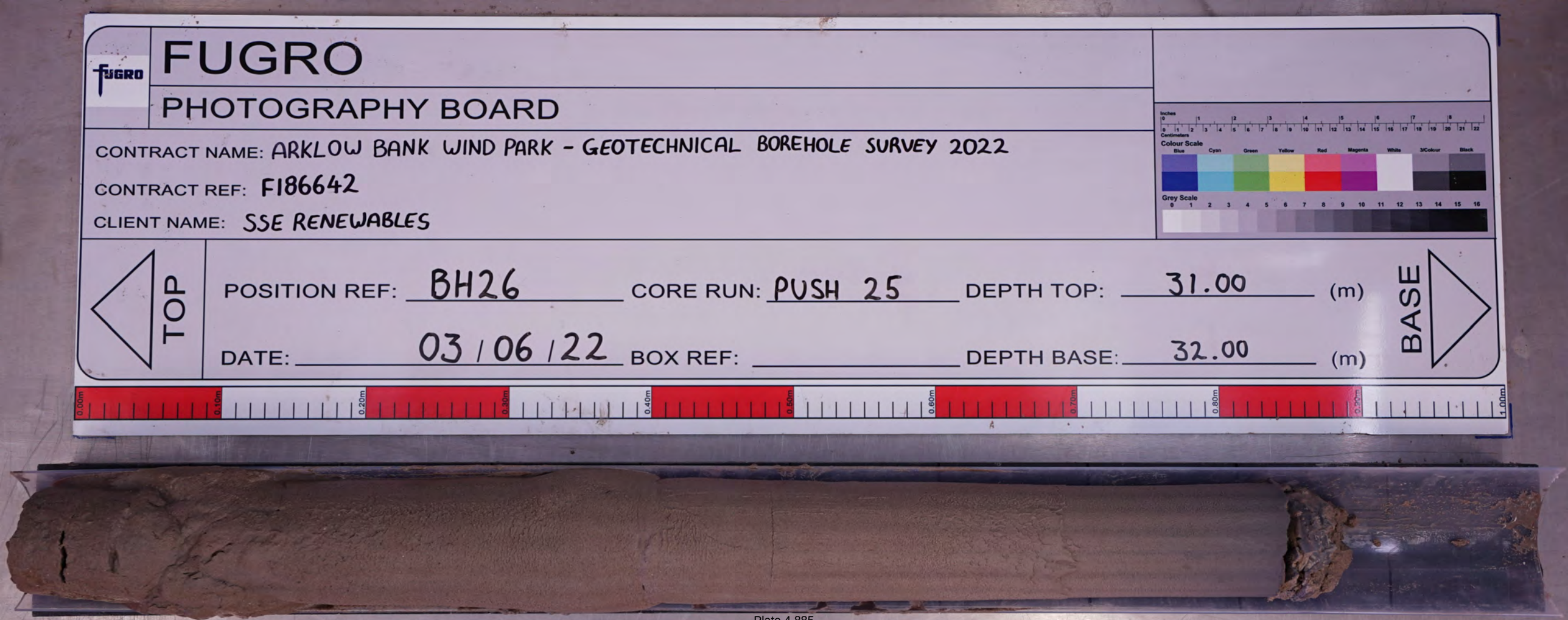

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 25
DEPTH TOP: 31.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 32.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.885

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

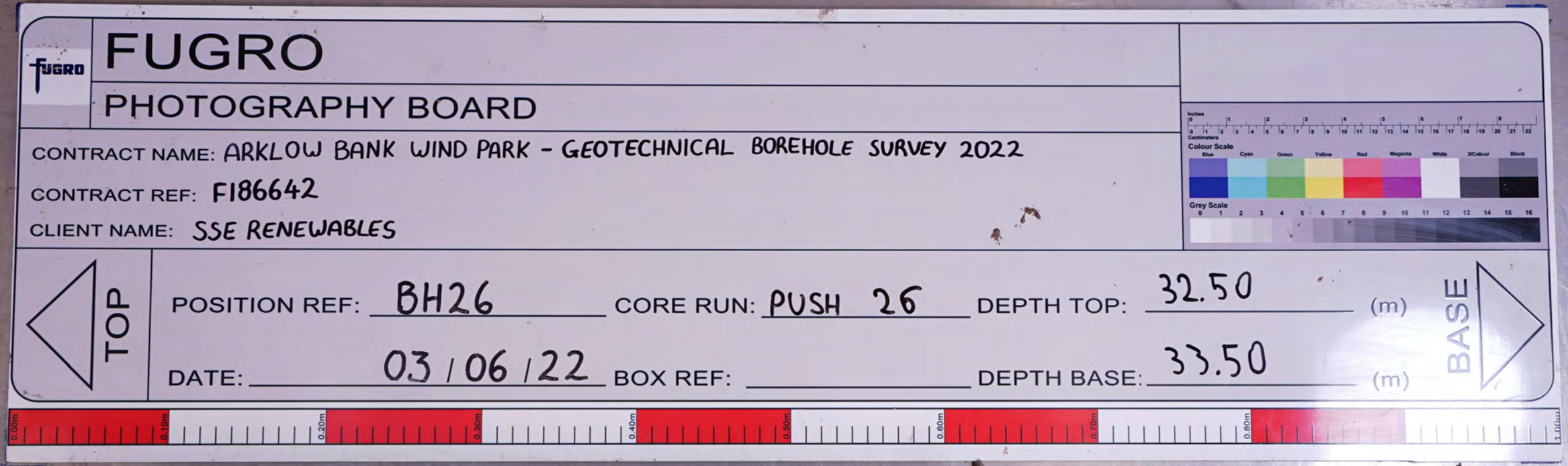
POSITION REF: BH26 CORE RUN: PUSH 25 DEPTH TOP: 31.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 32.00 (m)

BASE



Plate 4.886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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 26
DEPTH TOP: 32.50 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 33.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 1.00m

Plate 4.887

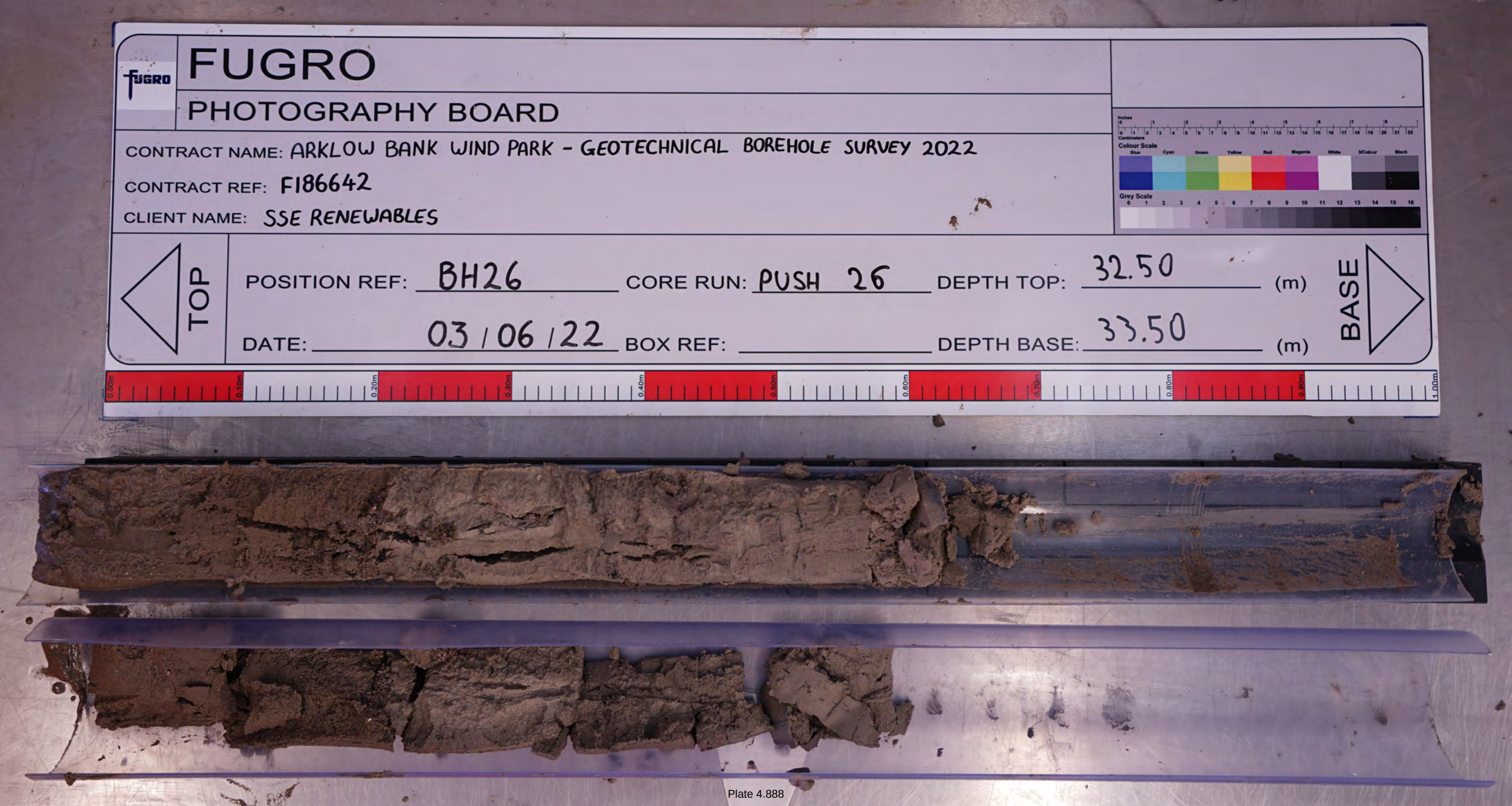
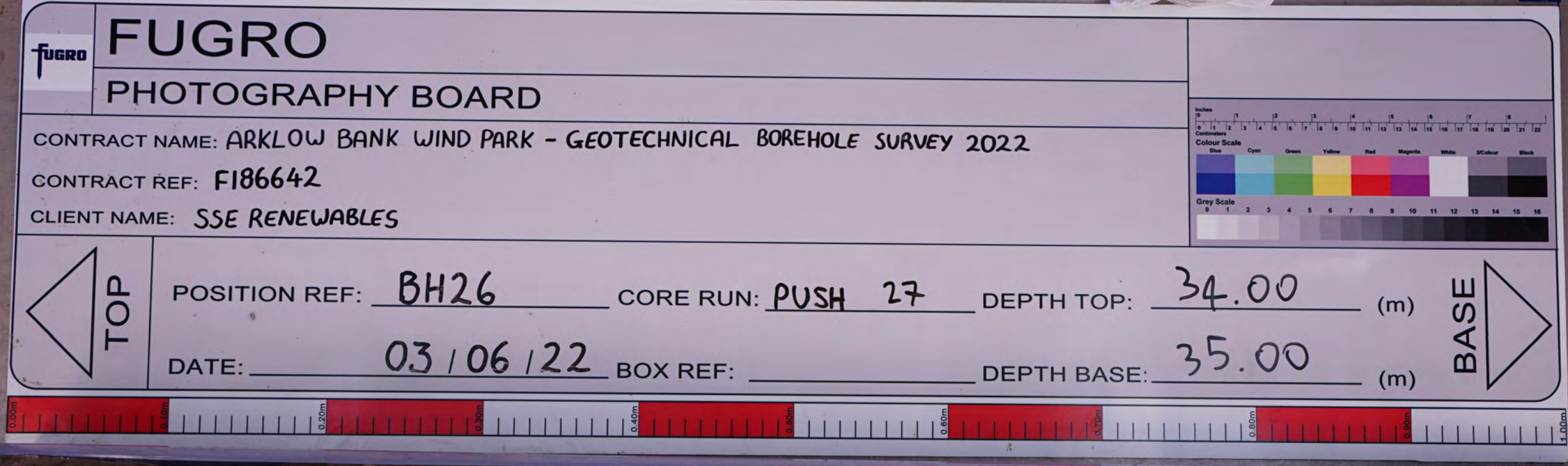

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 26
DEPTH TOP: 32.50 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 33.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.888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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 27
DEPTH TOP: 34.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 35.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.889

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: FI86642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 27 DEPTH TOP: 34.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 35.00 (m)

BASE

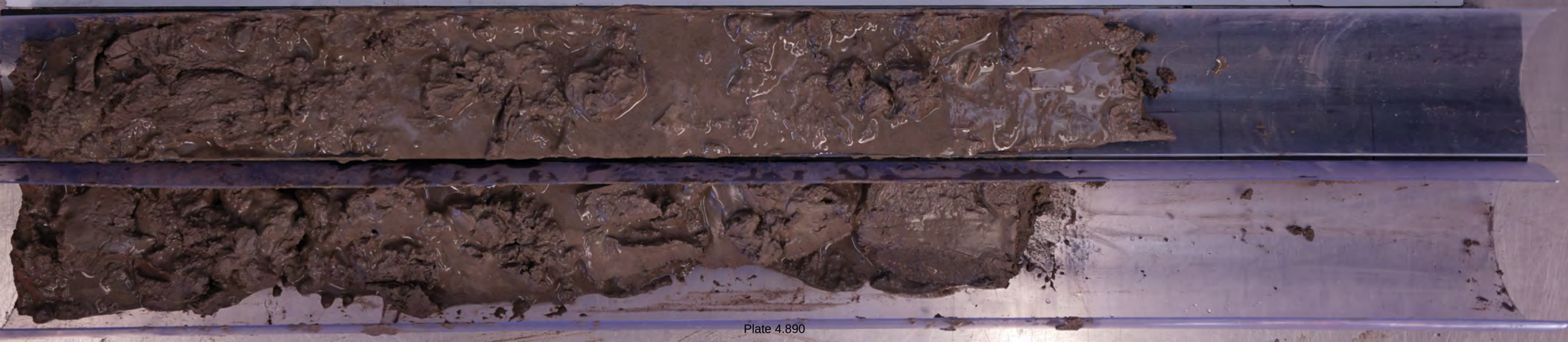

Plate 4.890

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

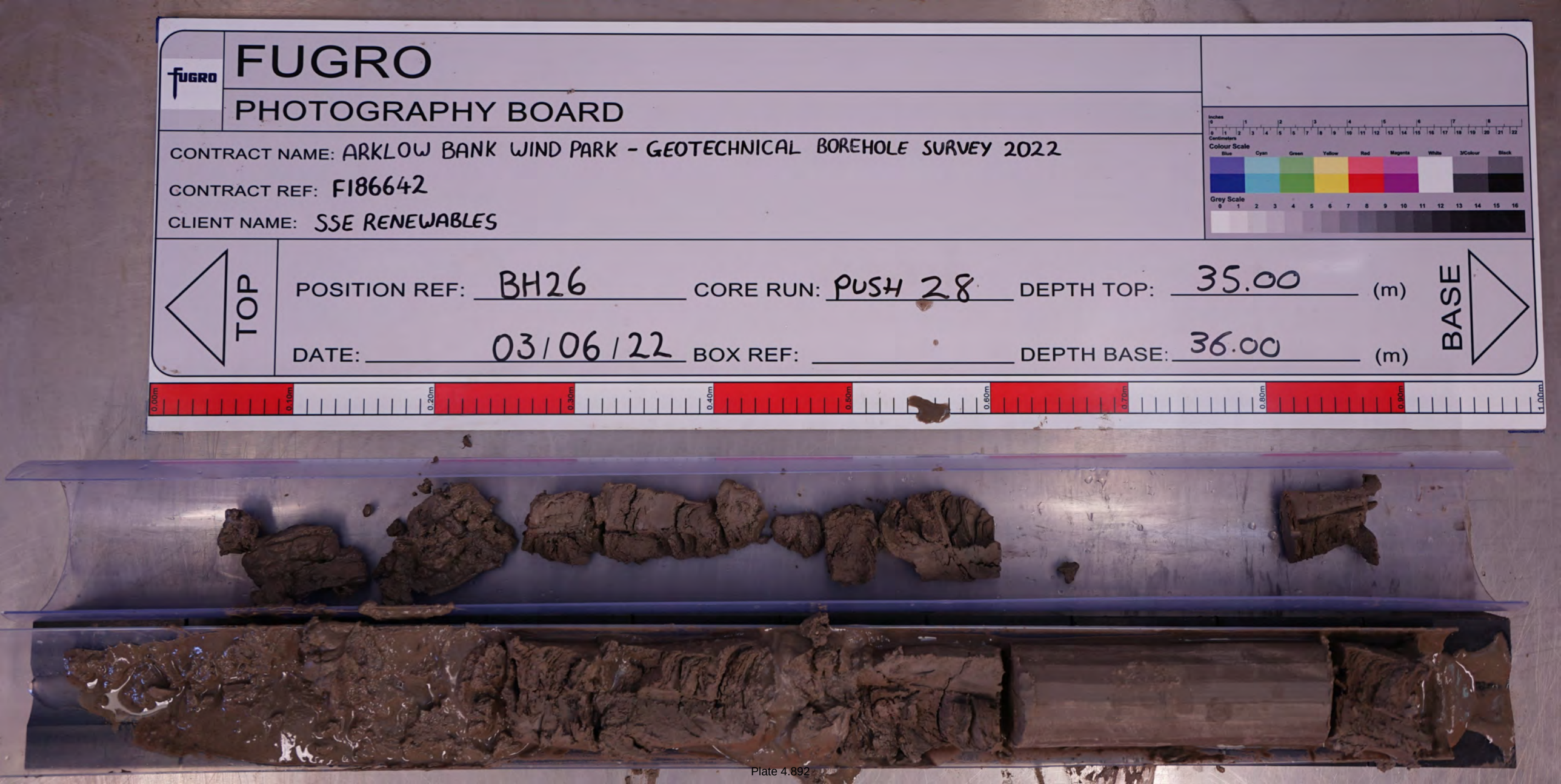
POSITION REF: BH26 CORE RUN: PUSH 28 DEPTH TOP: 35.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 36.00 (m)

BASE



Plate 4.891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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 28
DEPTH TOP: 35.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 36.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.892

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

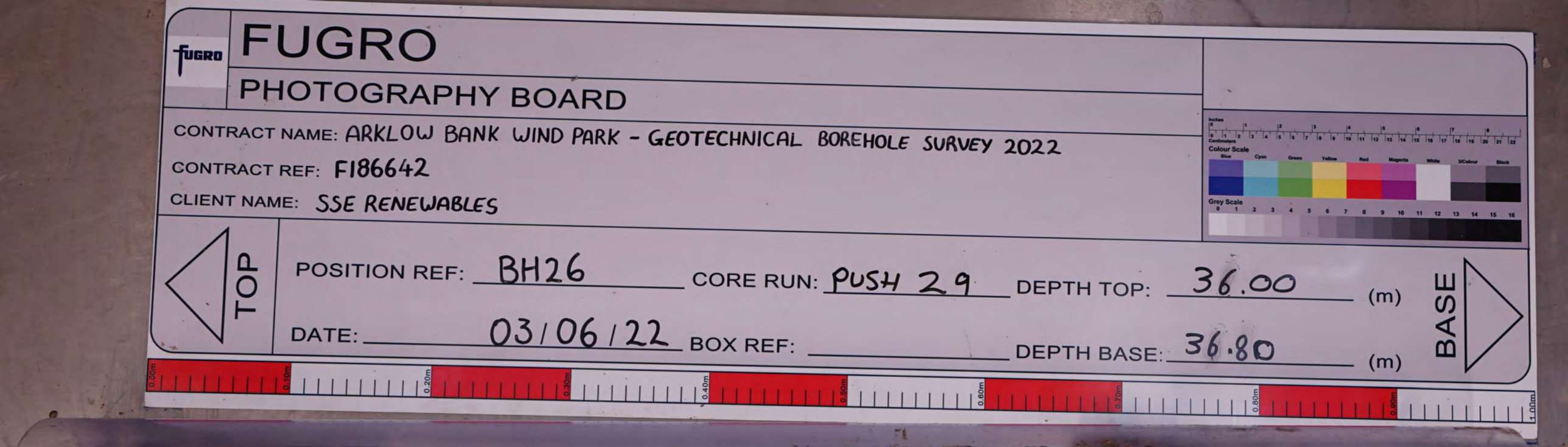
POSITION REF: BH26 CORE RUN: PUSH 29 DEPTH TOP: 36.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 36.80 (m)

BASE



Plate 4.893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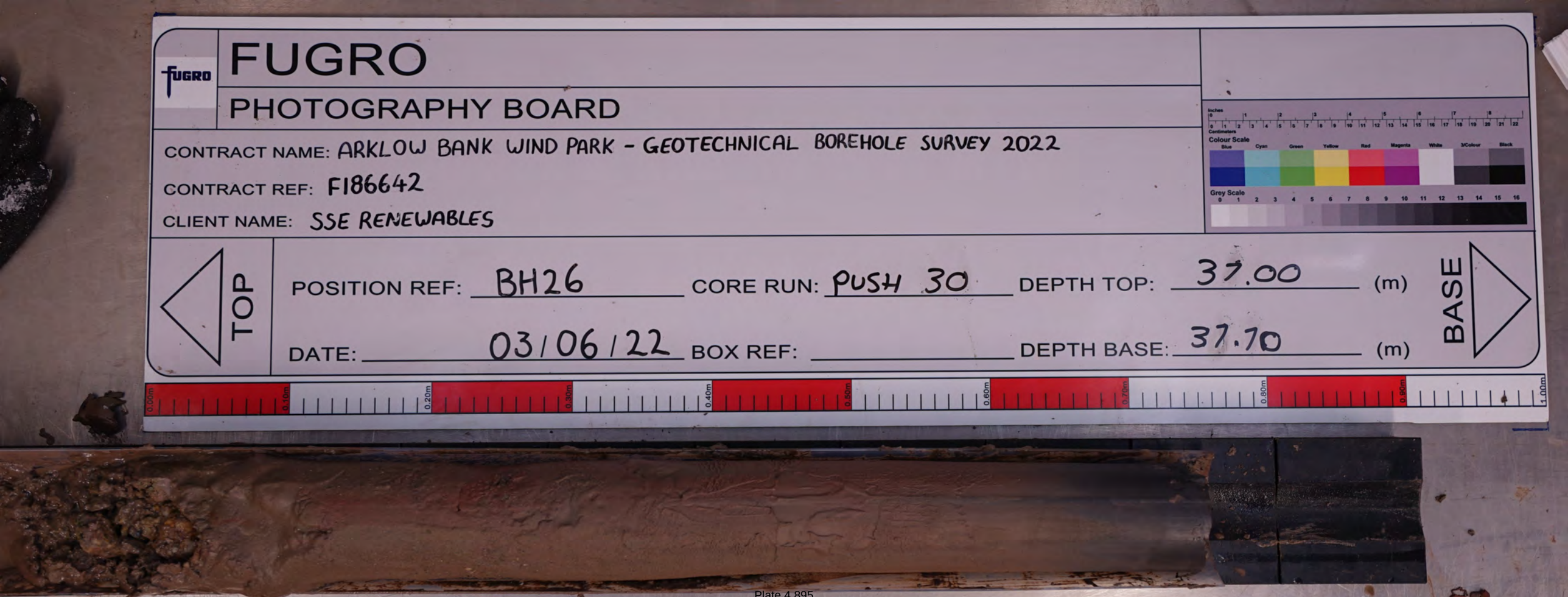
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 29
DEPTH TOP: 36.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 36.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.894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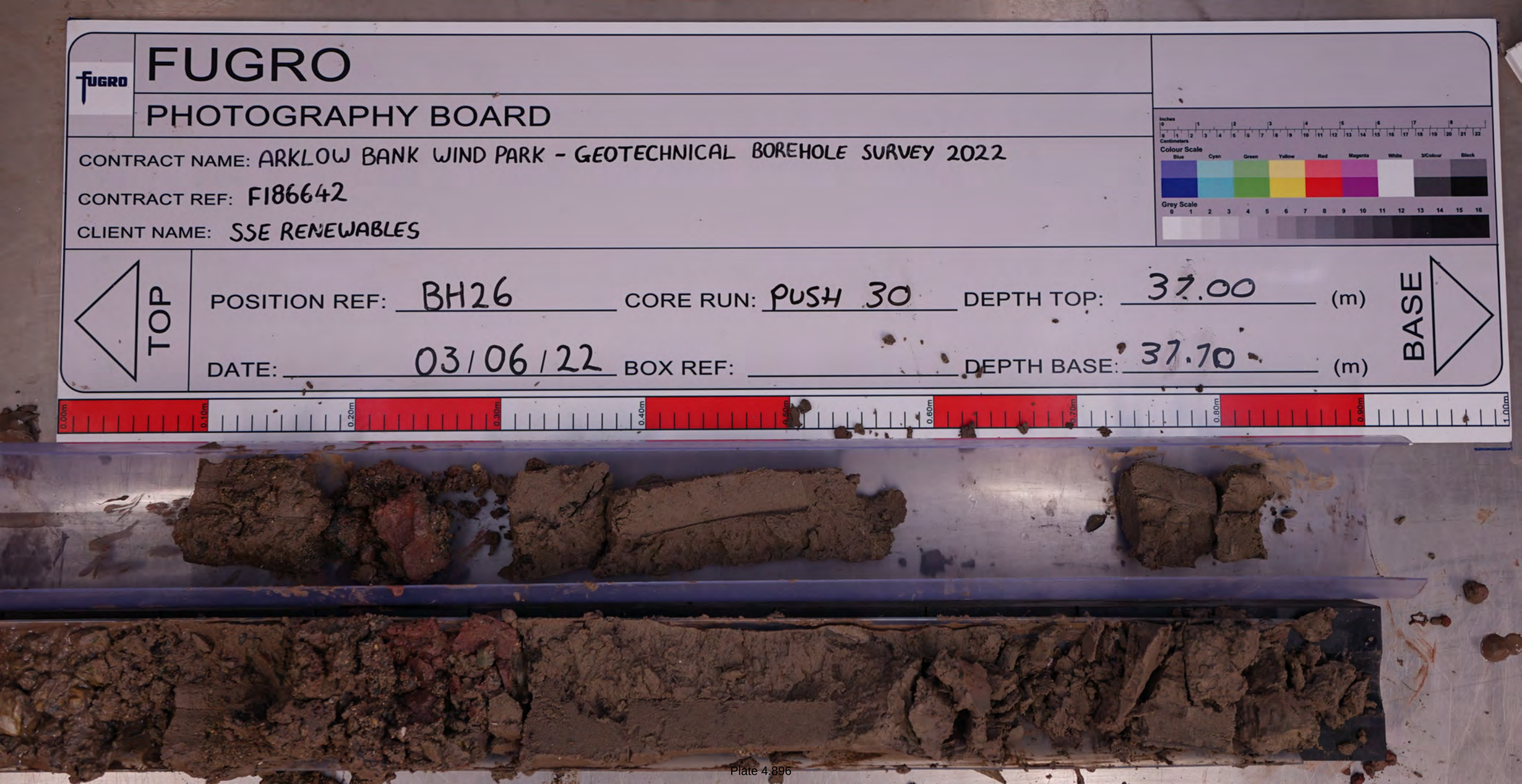
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 30
DEPTH TOP: 37.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 37.70 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.895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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: PUSH 30
DEPTH TOP: 37.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 37.70 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.896

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

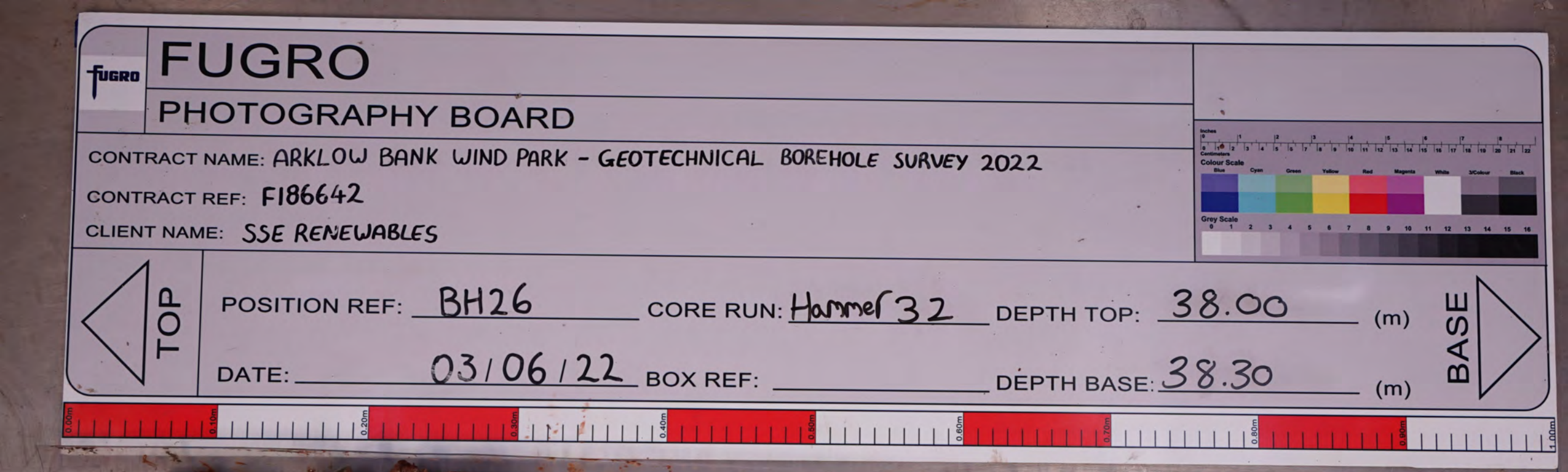
POSITION REF: BH26 CORE RUN: Hammer 32 DEPTH TOP: 38.00 (m)

DATE: 03/06/22 BOX REF: _____ DEPTH BASE: 38.30 (m)

BASE



Plate 4.897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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: Hammer 32
DEPTH TOP: 38.00 (m)
DATE: 03/06/22
BOX REF:
DEPTH BASE: 38.30 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.898

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 31 DEPTH TOP: 38.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 38.30 (m)

BASE



Plate 4.899

FUGRO

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: PUSH 31 DEPTH TOP: 38.00 (m)

DATE: 03/06/22 BOX REF: DEPTH BASE: 38.30 (m)

BASE



Plate 4.900

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: CR5 DEPTH TOP: 38.30 (m)

DATE: 04/06/22 BOX REF: DEPTH BASE: 39.50 (m)

BASE

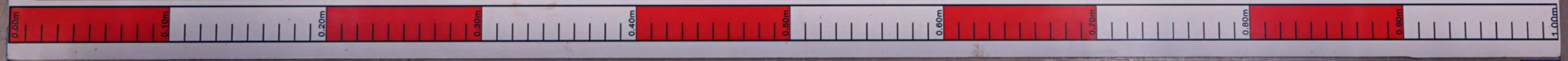
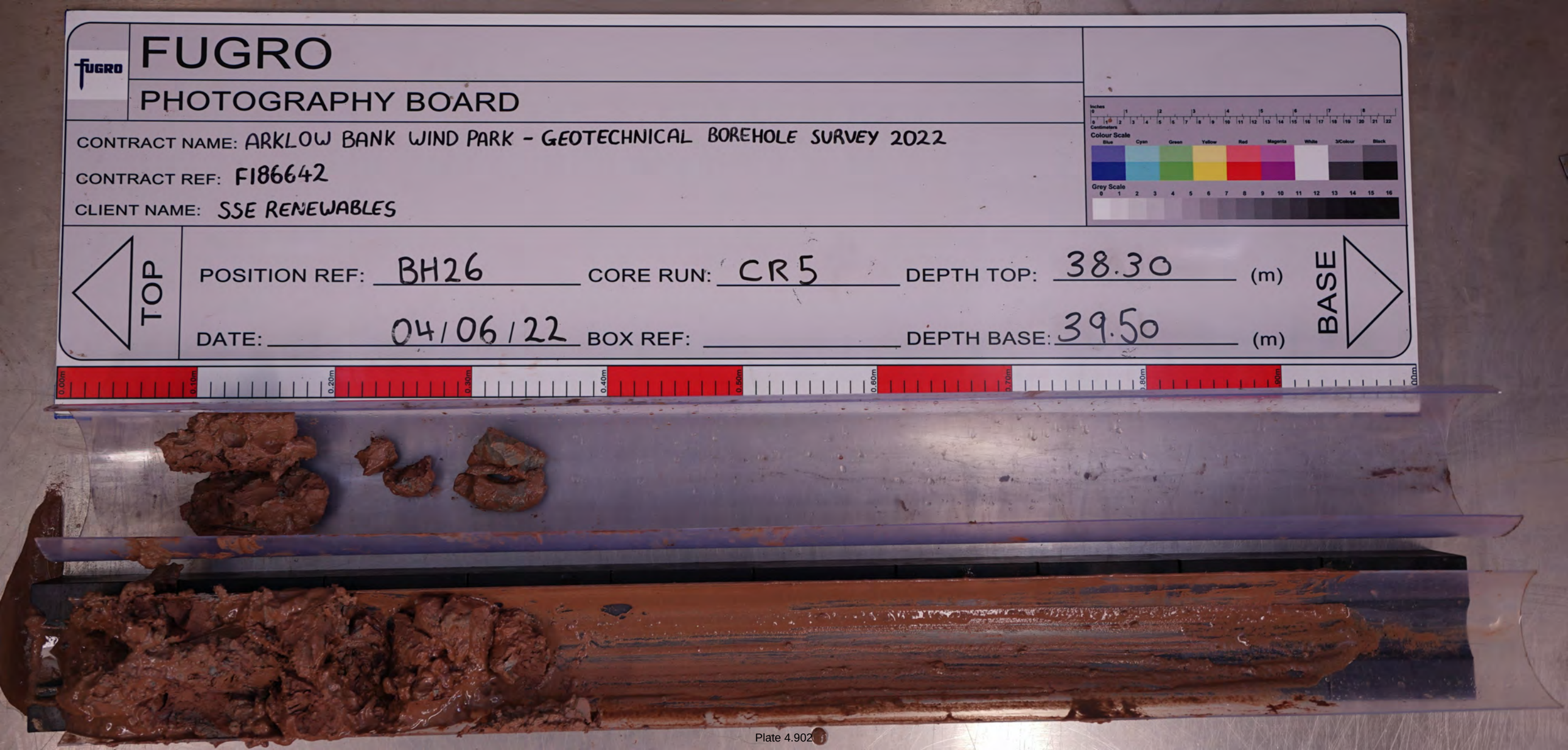




Plate 4.901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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR5
DEPTH TOP: 38.30 (m)
DATE: 04/06/22
BOX REF:
DEPTH BASE: 39.50 (m)
BASE

Plate 4.902


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 26
CORE RUN: CR6
DEPTH TOP: 39.50 (m)
DATE: 04/06/2022
BOX REF: 6
DEPTH BASE: 40.50 (m)
BASE
T
CR6
39.50m
40.50m

Plate 4.903

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 26

DATE: 04/05/2022

CORE RUN: CR7

BOX REF: 7

DEPTH TOP: 40.50 (m)

DEPTH BASE: 41.60 (m)

BASE

(41.40m) + (A2CL) 1

40.5m

41.6m

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 26

DATE: 04/05/2022

CORE RUN: CR7-8

BOX REF: 8

DEPTH TOP: 41.50 (m)

DEPTH BASE: 42.80 (m)

BASE

+ CR7 +41.50m

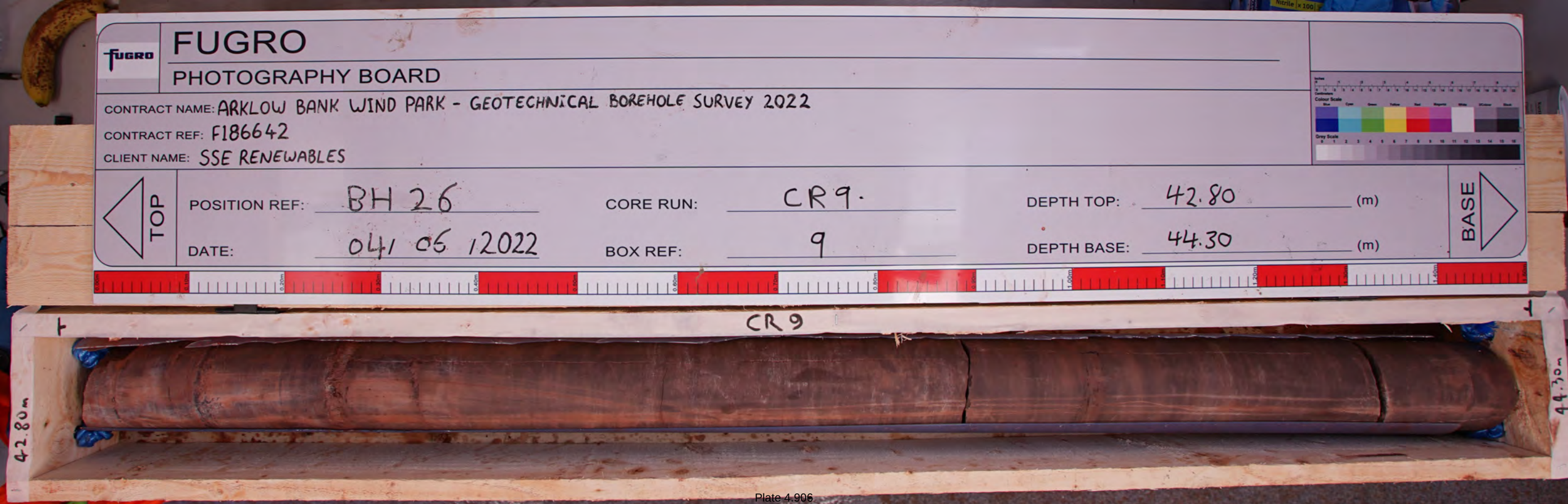
CR8

41.40m

42.80m

0.10m of CR7 Picked up in CR8

Plate 4.905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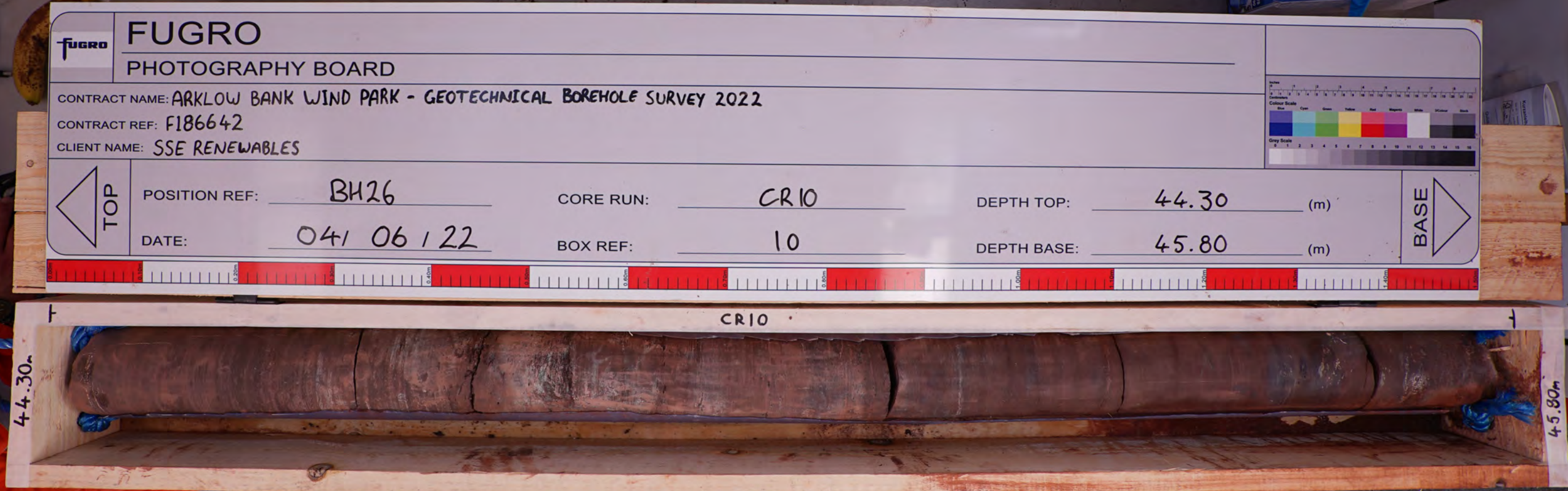
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 26
CORE RUN: CR9.
DEPTH TOP: 42.80 (m)
DATE: 04/05/2022
BOX REF: 9
DEPTH BASE: 44.30 (m)
BASE
CR9
42.80m
44.30m

Plate 4.906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PHOTOGRAPHY BOARD
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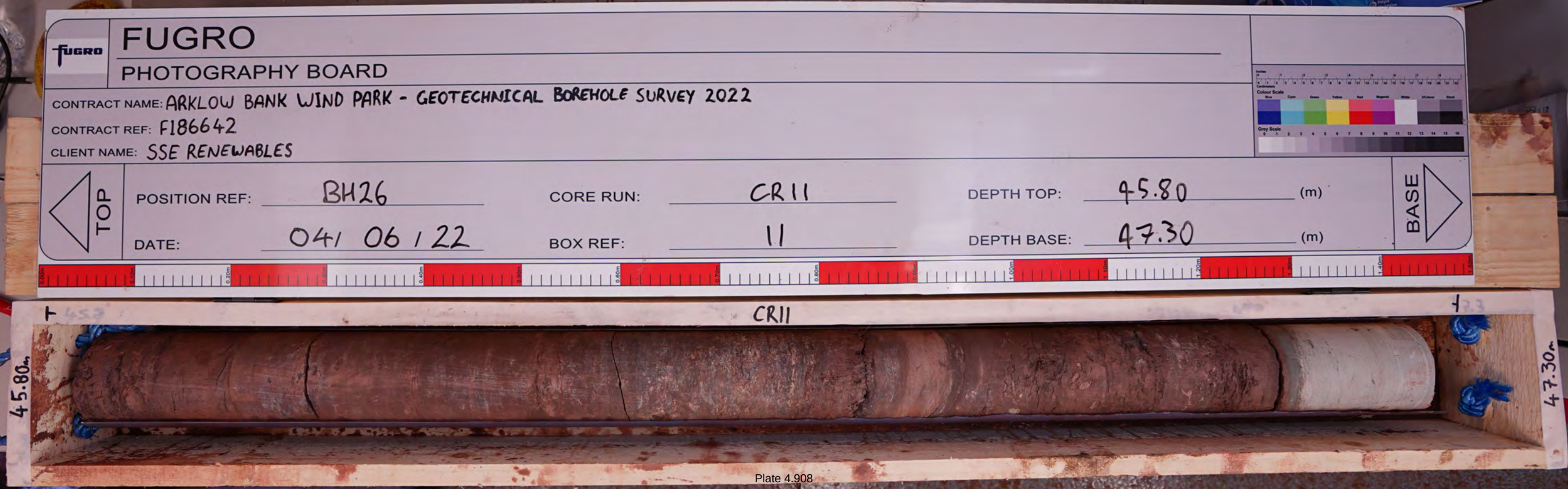
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR10
DEPTH TOP: 44.30 (m)
DATE: 04/06/22
BOX REF: 10
DEPTH BASE: 45.80 (m)
BASE
CR10
44.30m
45.80m

Plate 4.907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PHOTOGRAPHY BOARD
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR11
DEPTH TOP: 45.80 (m)
DATE: 04/06/22
BOX REF: 11
DEPTH BASE: 47.30 (m)
BASE
CR11
45.80m
47.30m

Plate 4.908

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26

DATE: 04/06/22

CORE RUN: CR12

BOX REF: 12

DEPTH TOP: 47.30 (m)

DEPTH BASE: 48.80 (m)

BASE



Plate 4.909

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH26 CORE RUN: CR13 DEPTH TOP: 48.80 (m)

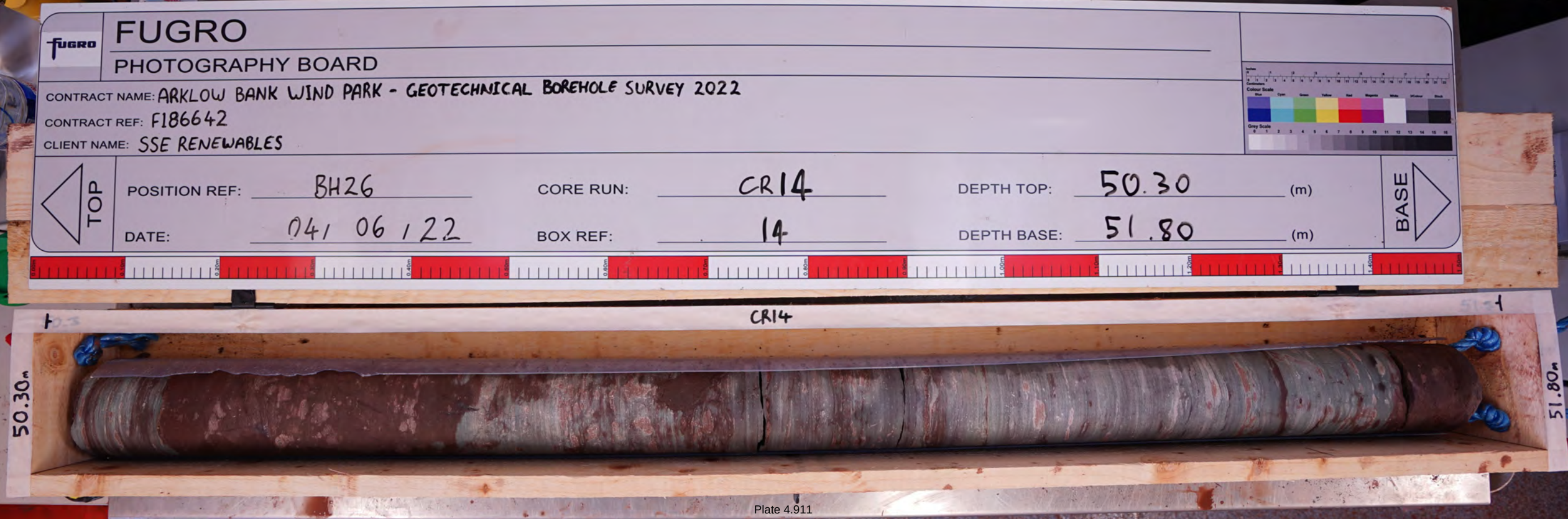
DATE: 04/06/22 BOX REF: 13 DEPTH BASE: 50.30 (m)

BASE

CR13

48.80

50.30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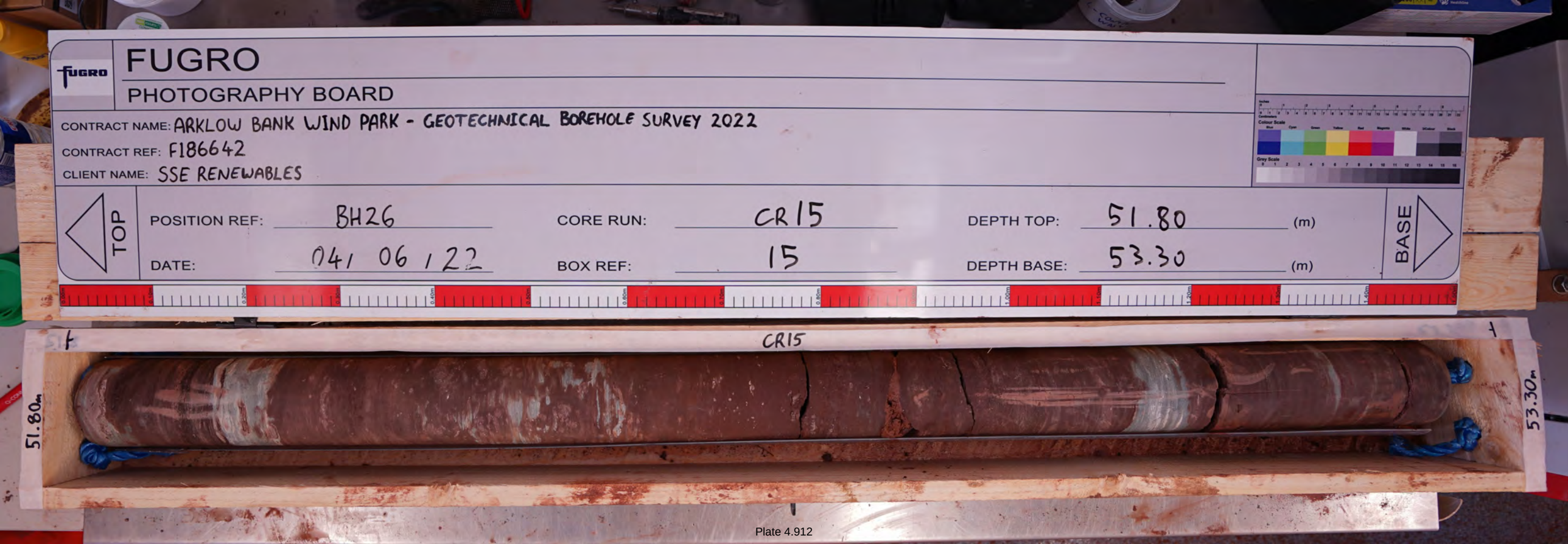
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR14
DEPTH TOP: 50.30 (m)
DATE: 04/06/22
BOX REF: 14
DEPTH BASE: 51.80 (m)
BASE
CR14
50.30m
51.80m

Plate 4.911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PHOTOGRAPHY BOARD
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR15
DEPTH TOP: 51.80 (m)
DATE: 04/06/22
BOX REF: 15
DEPTH BASE: 53.30 (m)
BASE
CR15
51.80m
53.30m

Plate 4.912


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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR16
DEPTH TOP: 53.30 (m)
DATE: 04/06/22
BOX REF: 16
DEPTH BASE: 54.80 (m)
BASE
CR16
53.30m
54.80m

Plate 4.913


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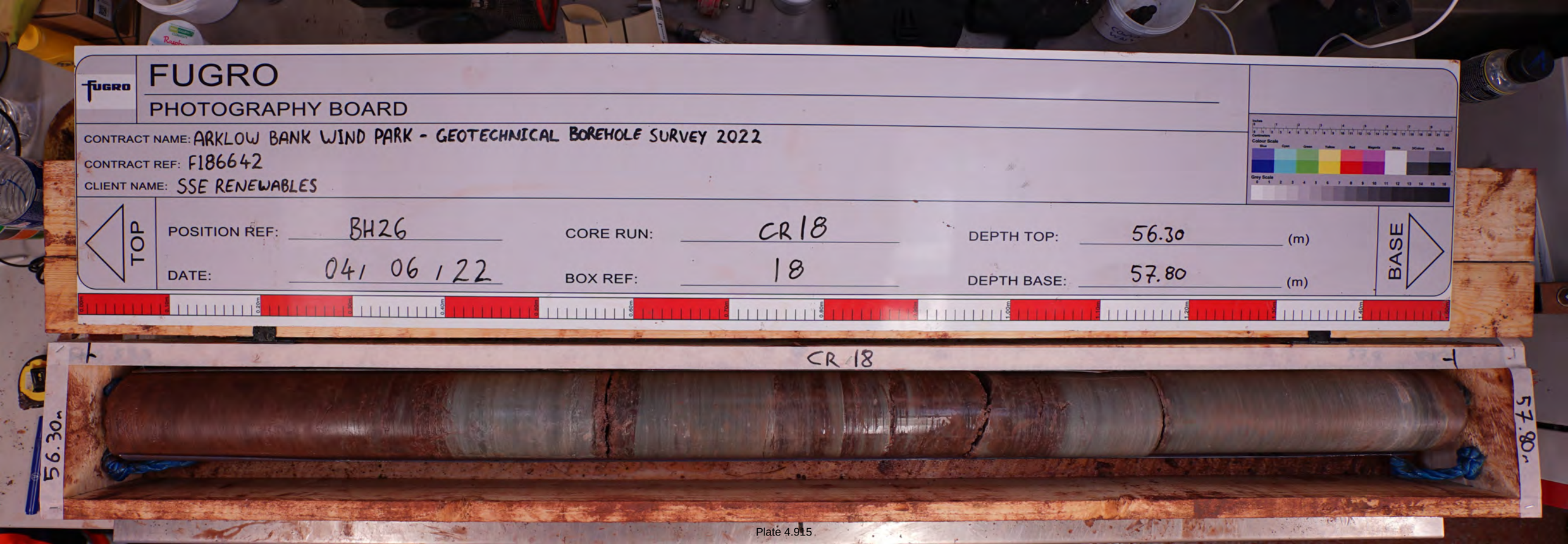
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR17
DEPTH TOP: 54.80 (m)
DATE: 04/06/22
BOX REF: 17
DEPTH BASE: 56.30 (m)
BASE
CR17
54.80m
56.30m

Plate 4.914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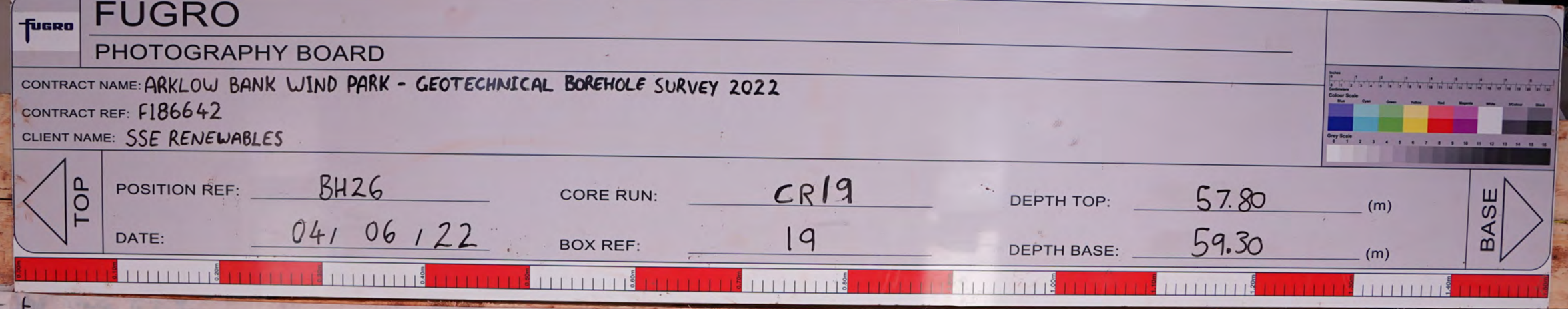
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR18
DEPTH TOP: 56.30 (m)
DATE: 04/06/22
BOX REF: 18
DEPTH BASE: 57.80 (m)
BASE
CR 18
56.30m
57.80m

Plate 4.915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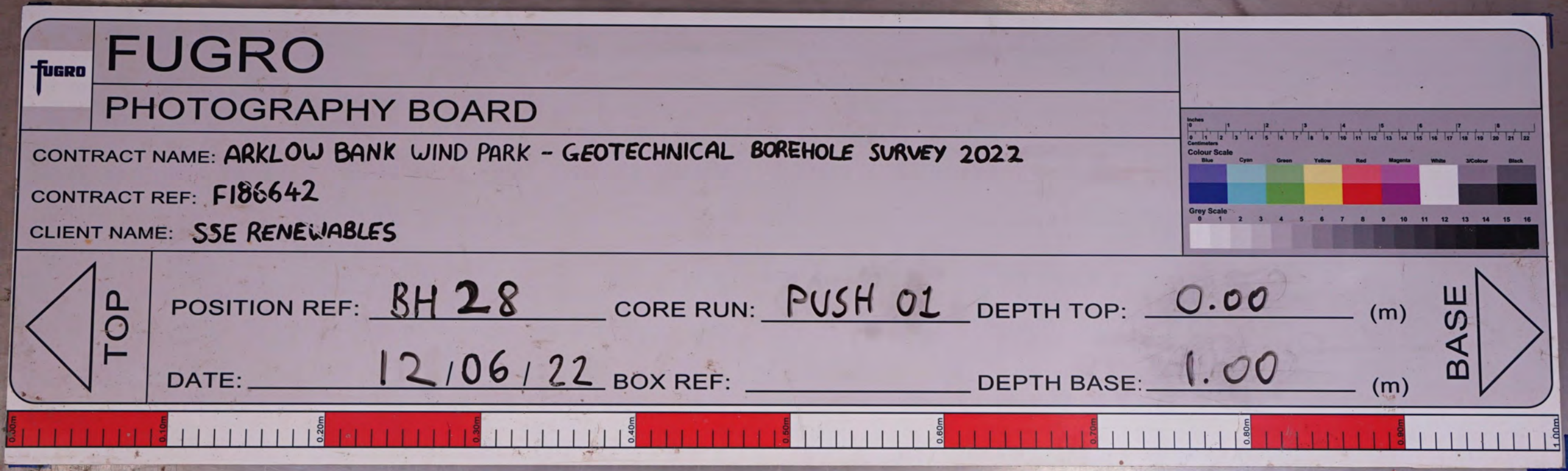
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH26
CORE RUN: CR19
DEPTH TOP: 57.80 (m)
DATE: 04/06/22
BOX REF: 19
DEPTH BASE: 59.30 (m)
BASE
CR19
57.80m
59.30m

Plate 4.916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PHOTOGRAPHY BOARD
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CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 01
DEPTH TOP: 0.00 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 1.00 (m)
BASE
NO RECOVERY

Plate 4.917

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 02 DEPTH TOP: 1.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 1.40 (m)

BASE

NO RECOVERY

Plate 4.918

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 03 DEPTH TOP: 1.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 1.45 (m)

BASE



Plate 4.919

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 05 DEPTH TOP: 2.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 2.45 (m)

BASE



Plate 4.920

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 05 DEPTH TOP: 2.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 2.45 (m)

BASE

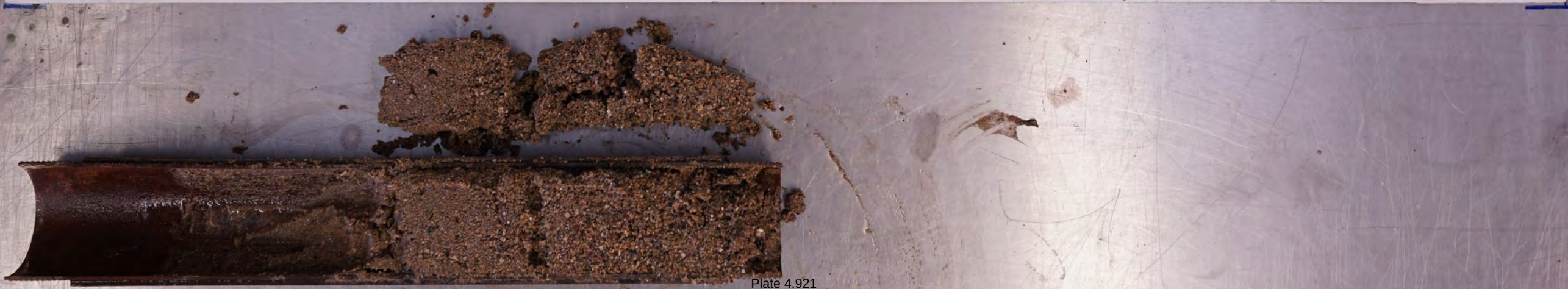

Plate 4.921

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 04 DEPTH TOP: 2.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 3.00 (m)

BASE

NO RECOVERY

Plate 4.922

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 06 DEPTH TOP: 2.50 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 2.95 (m)

BASE



Plate 4.923

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 06 DEPTH TOP: 2.50 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 2.95 (m)

BASE



Plate 4.924

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 07 DEPTH TOP: 2.50 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 3.00 (m)

BASE



Plate 4.925

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

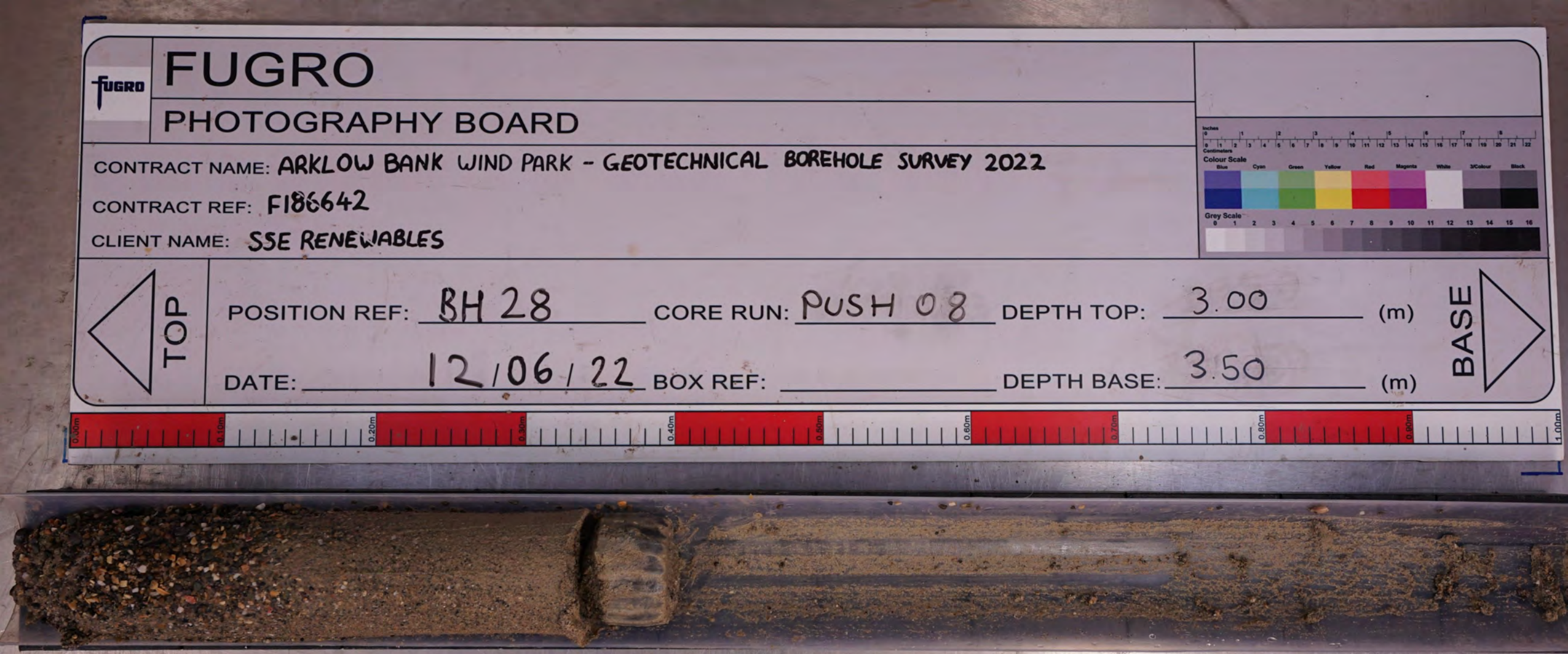
POSITION REF: BH 28 CORE RUN: PUSH 07 DEPTH TOP: 2.50 (m)

DATE: 12/06/22 BOX REF: _____ DEPTH BASE: 3.00 (m)

BASE



Plate 4.926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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 08
DEPTH TOP: 3.00 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 3.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.927

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 08 DEPTH TOP: 3.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 3.50 (m)

BASE



Plate 4.928

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 09 DEPTH TOP: 3.50 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 4.00 (m)

BASE



Plate 4.929

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 09 DEPTH TOP: 3.50 (m)

DATE: 12/06/22 BOX REF: _____ DEPTH BASE: 4.00 (m)

BASE

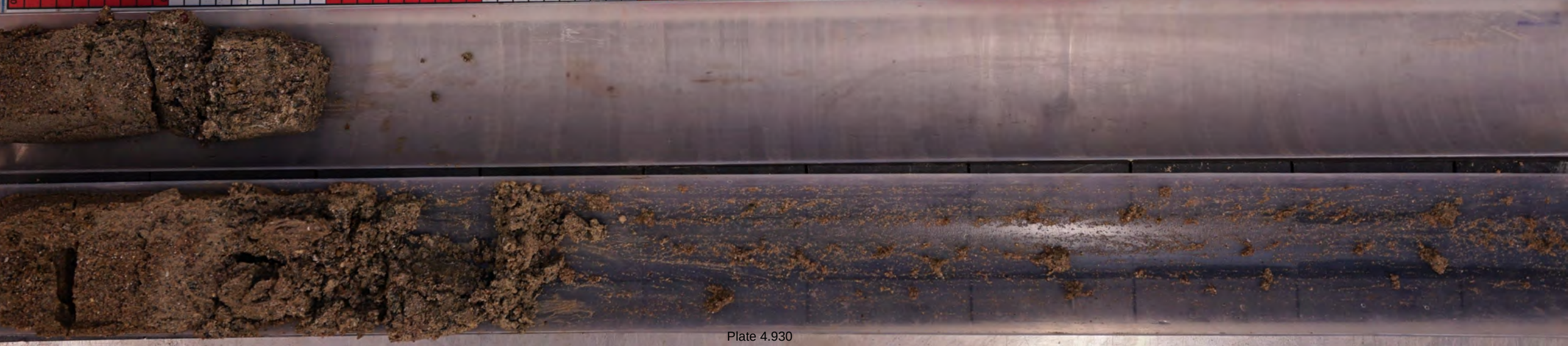

Plate 4.930

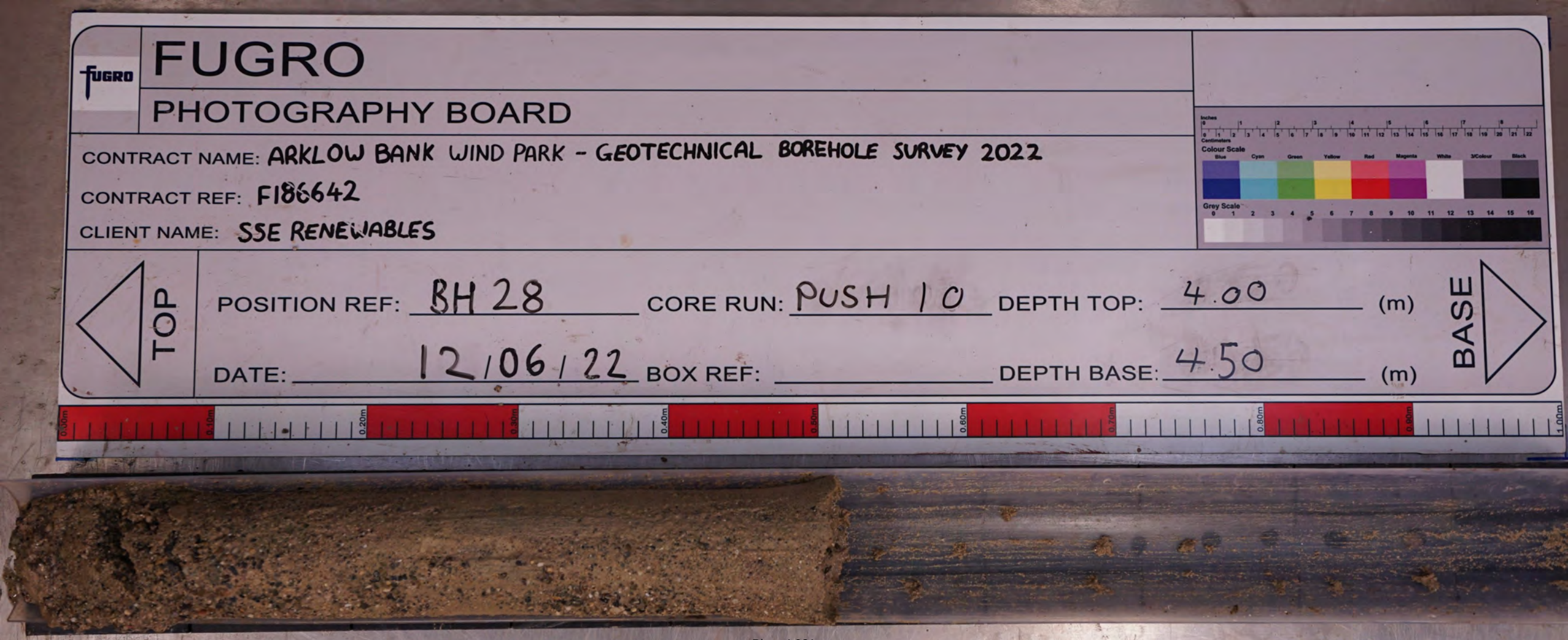
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 10
DEPTH TOP: 4.00 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 4.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.931

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 10 DEPTH TOP: 4.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 4.50 (m)

BASE

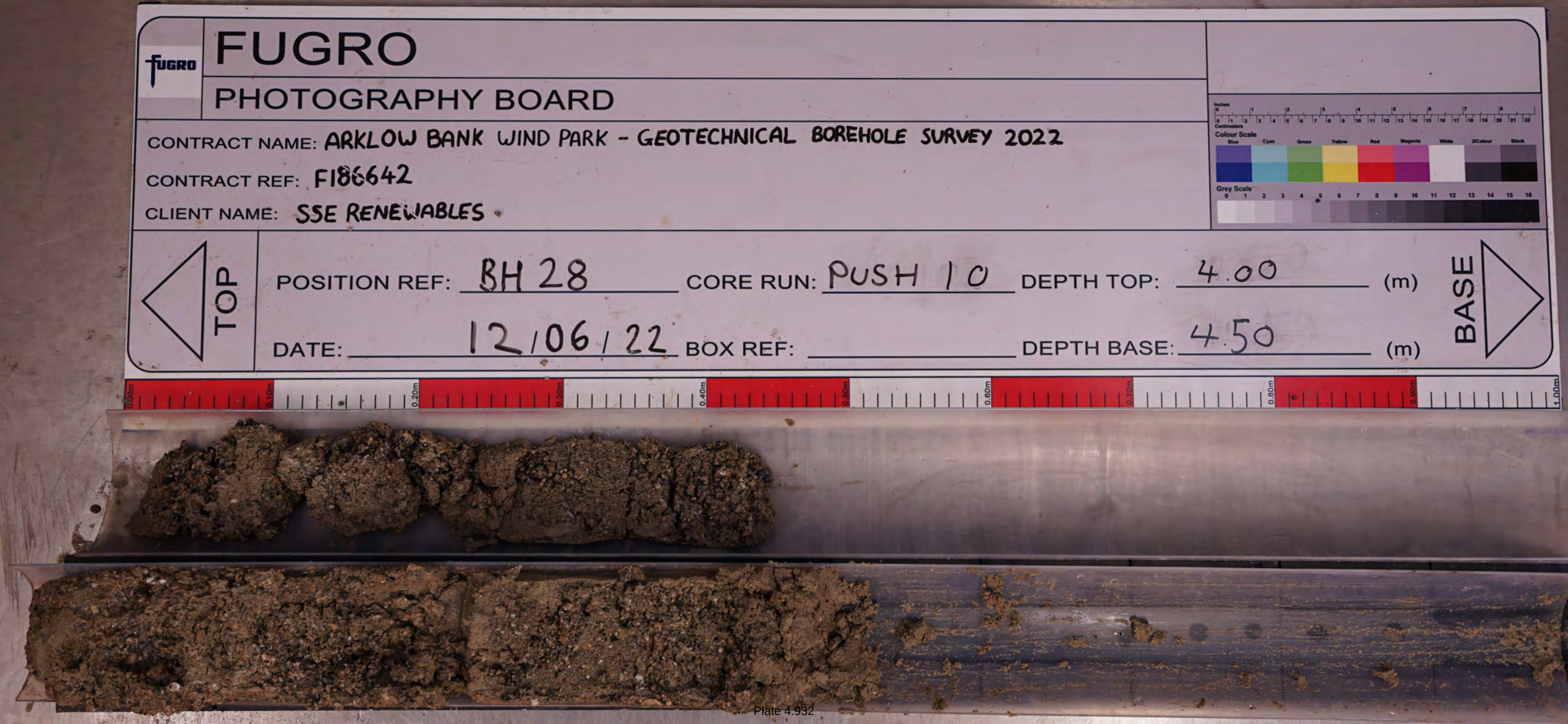

Plate 4.932

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

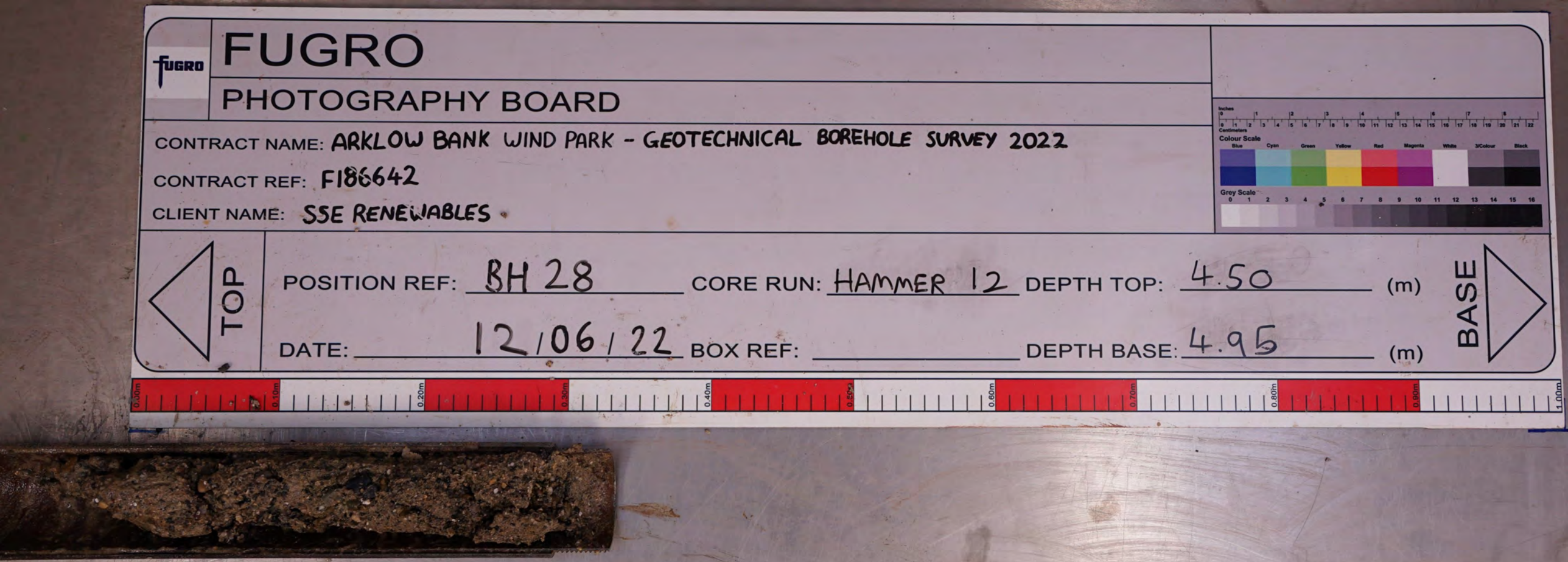
POSITION REF: BH 28 CORE RUN: PUSH 11 DEPTH TOP: 4.50 (m)

DATE: 12/06/22 BOX REF: _____ DEPTH BASE: 4.50 (m)

BASE

NO RECOVERY

Plate 4.933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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 12
DEPTH TOP: 4.50 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 4.95 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.934

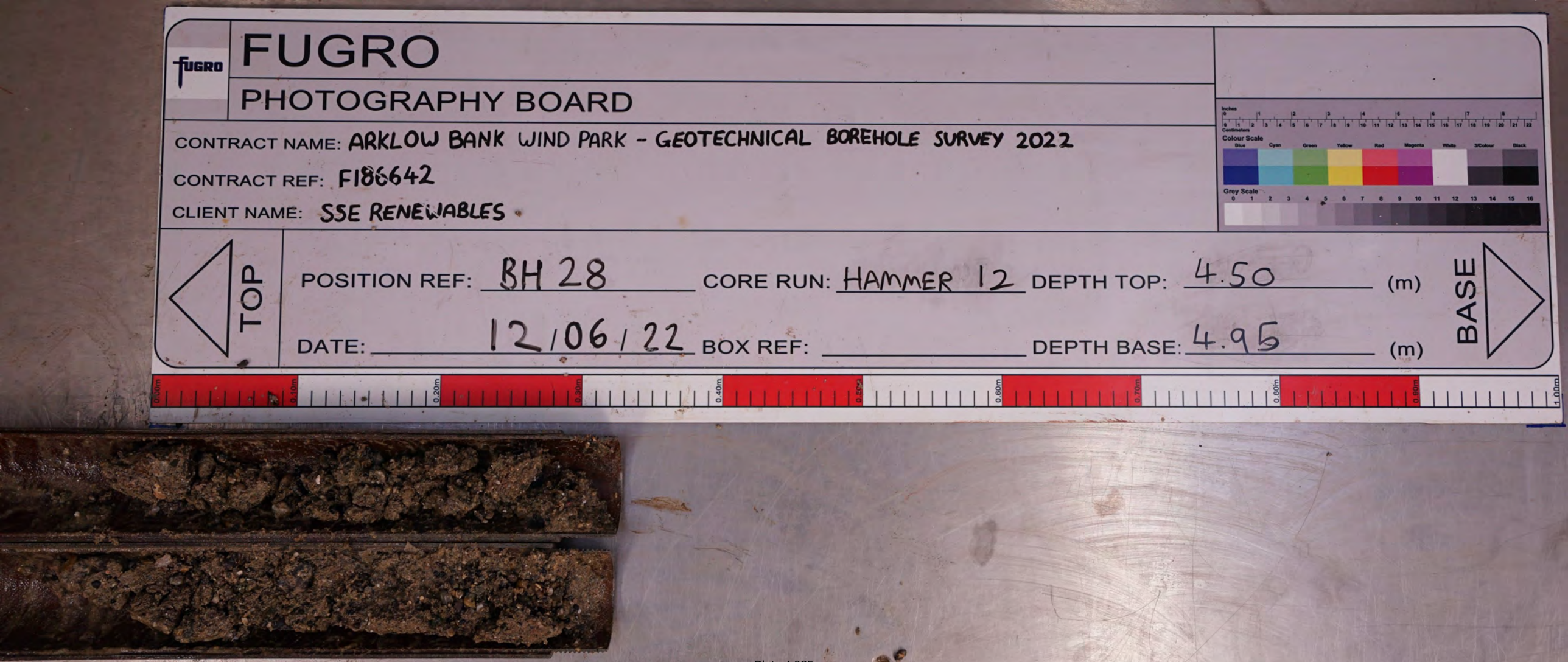
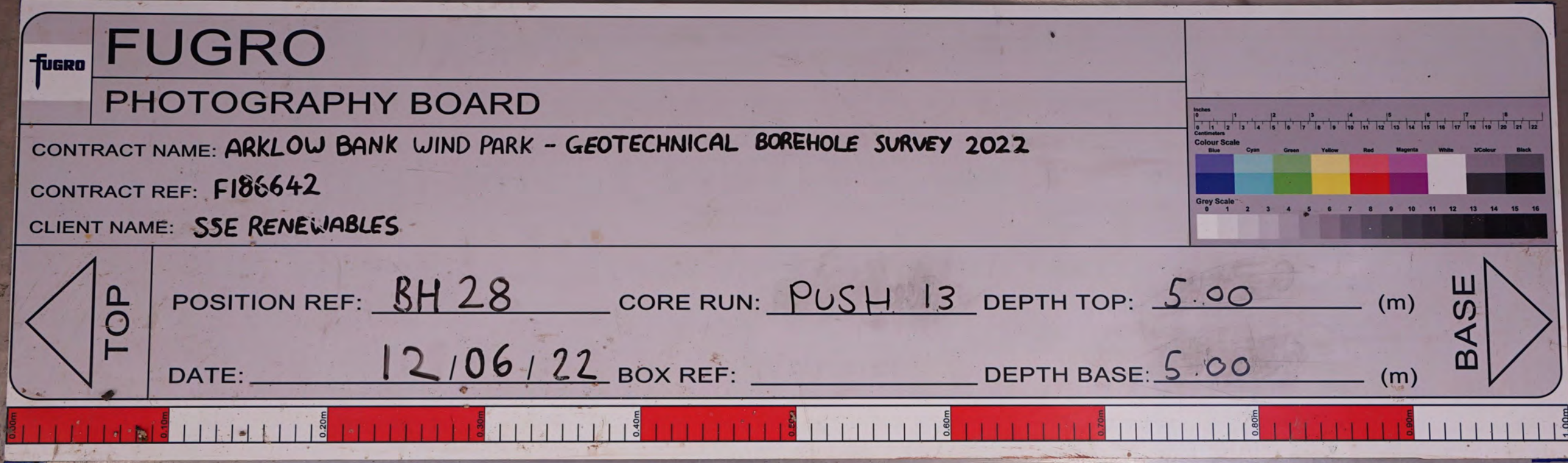

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 12
DEPTH TOP: 4.50 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 4.95 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.935



NO RECOVERY ..

Plate 4.936

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 14 DEPTH TOP: 5.00 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 5.40 (m)

BASE



Plate 4.937


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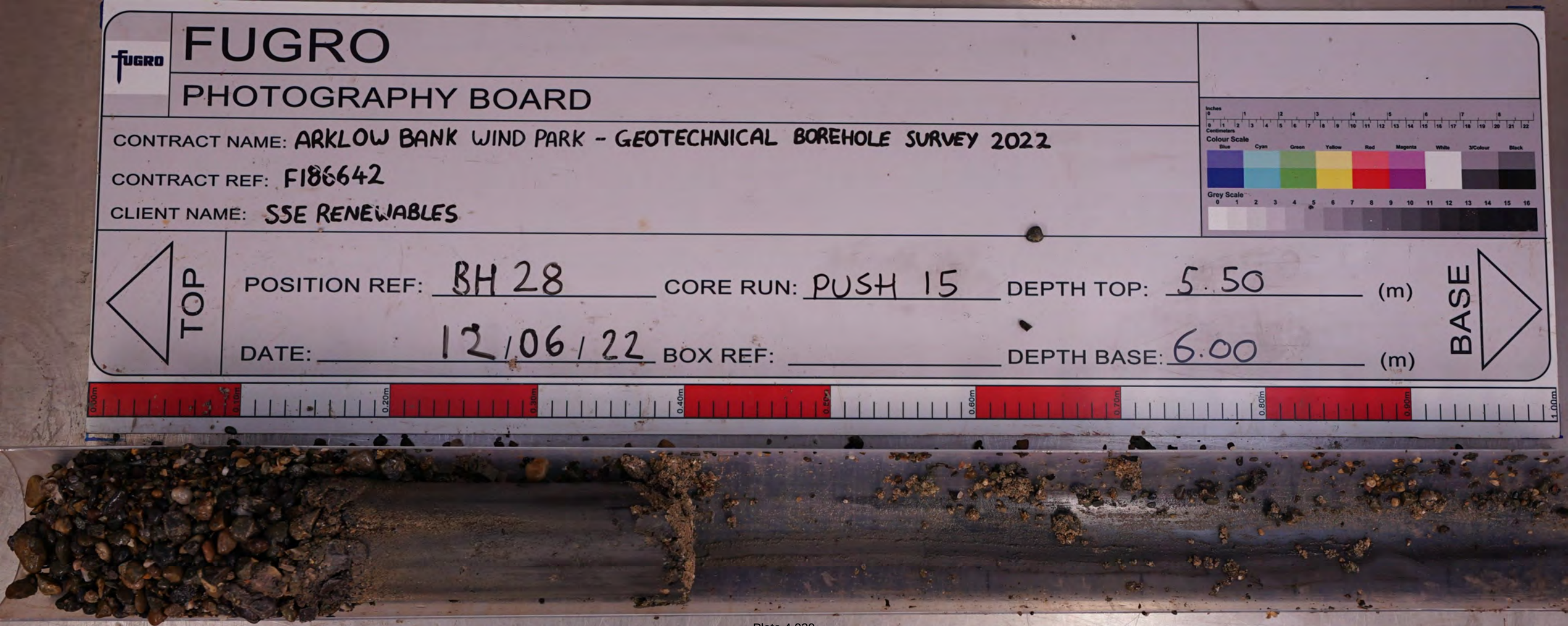
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 14
DEPTH TOP: 5.00 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 5.40 (m)
BASE
Colour Scale
Grey Scale

Plate 4.938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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 15
DEPTH TOP: 5.50 (m)
DATE: 12/06/22
BOX REF:
DEPTH BASE: 6.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.939

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 18 DEPTH TOP: 6.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 6.45 (m)

BASE

NO RECOVERY

Plate 4.940

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 16 DEPTH TOP: 6.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 6.50 (m)

BASE

NO RECOVERY

Plate 4.941

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

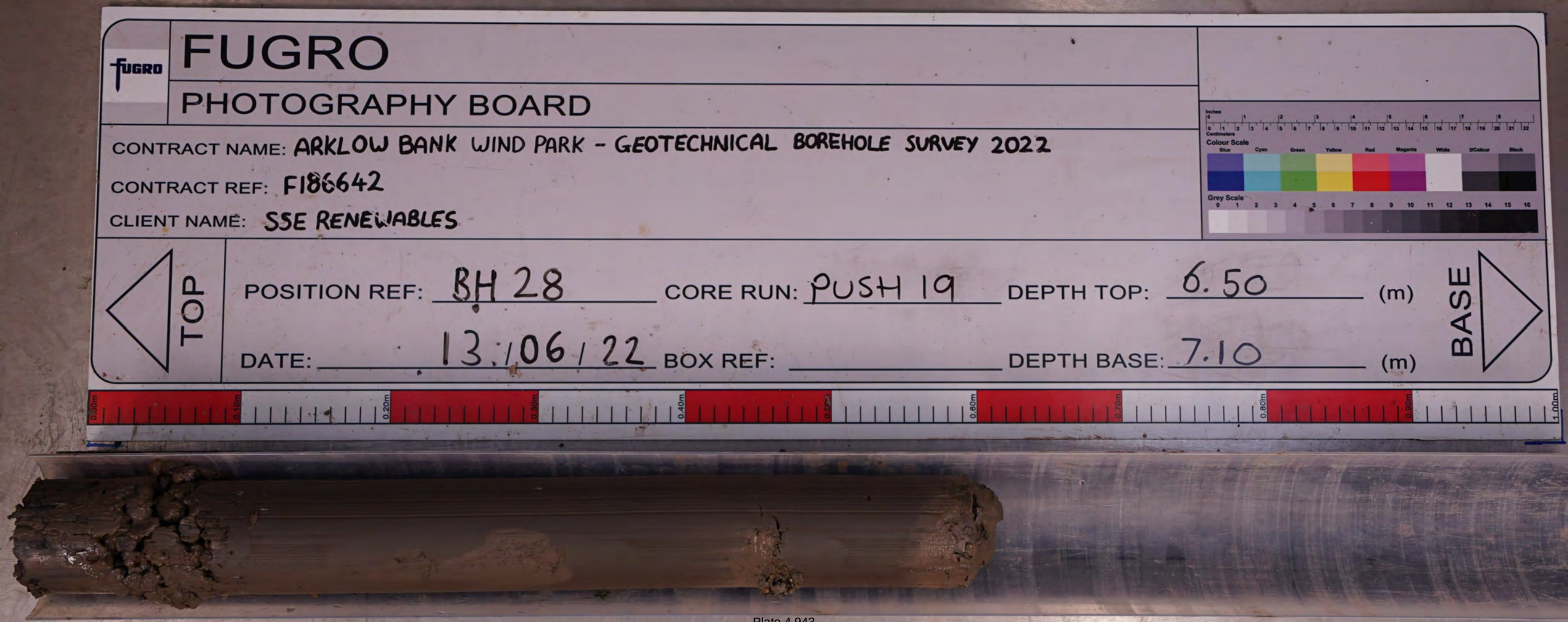
POSITION REF: BH 28 CORE RUN: PUSH 17 DEPTH TOP: 6.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 6.50 (m)

BASE

NO RECOVERY

Plate 4.942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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 19
DEPTH TOP: 6.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 7.10 (m)
BASE

Plate 4.943

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

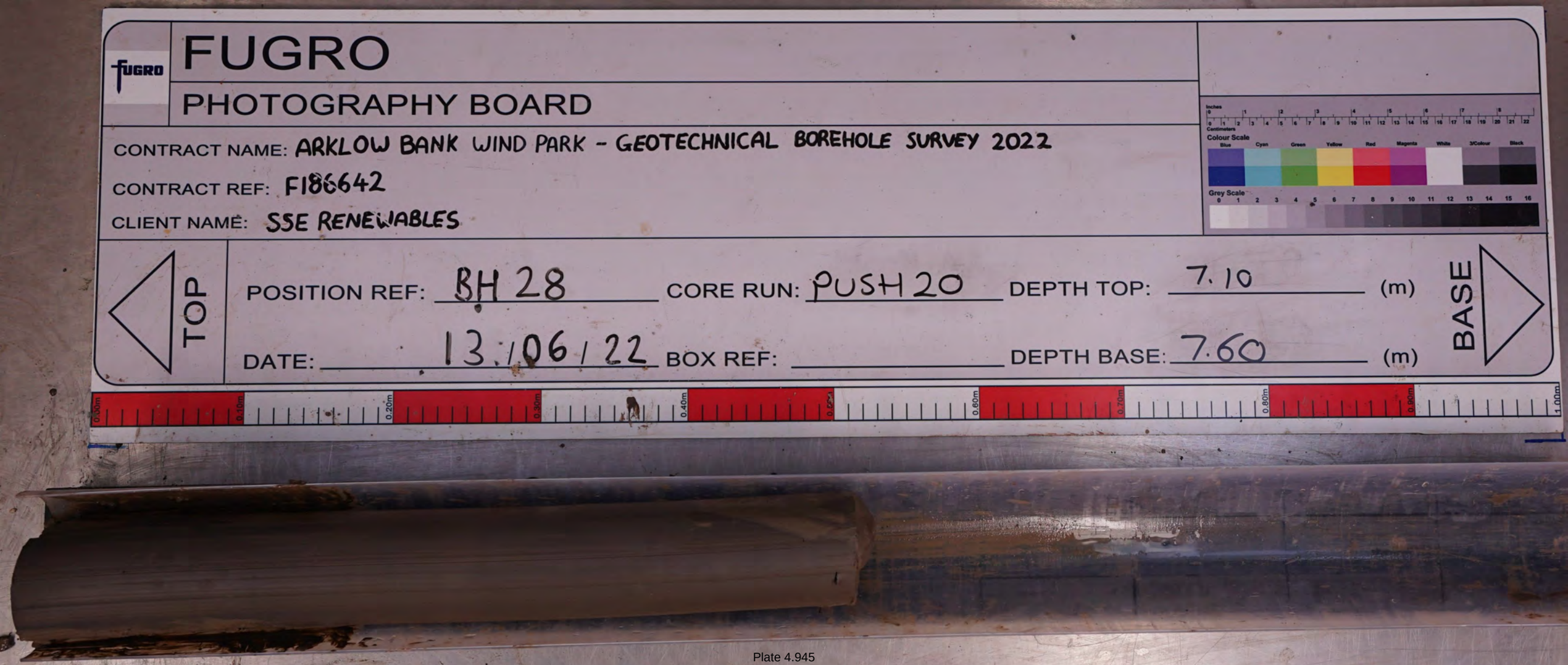
POSITION REF: BH 28 CORE RUN: PUSH 19 DEPTH TOP: 6.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 7.10 (m)

BASE



Plate 4.944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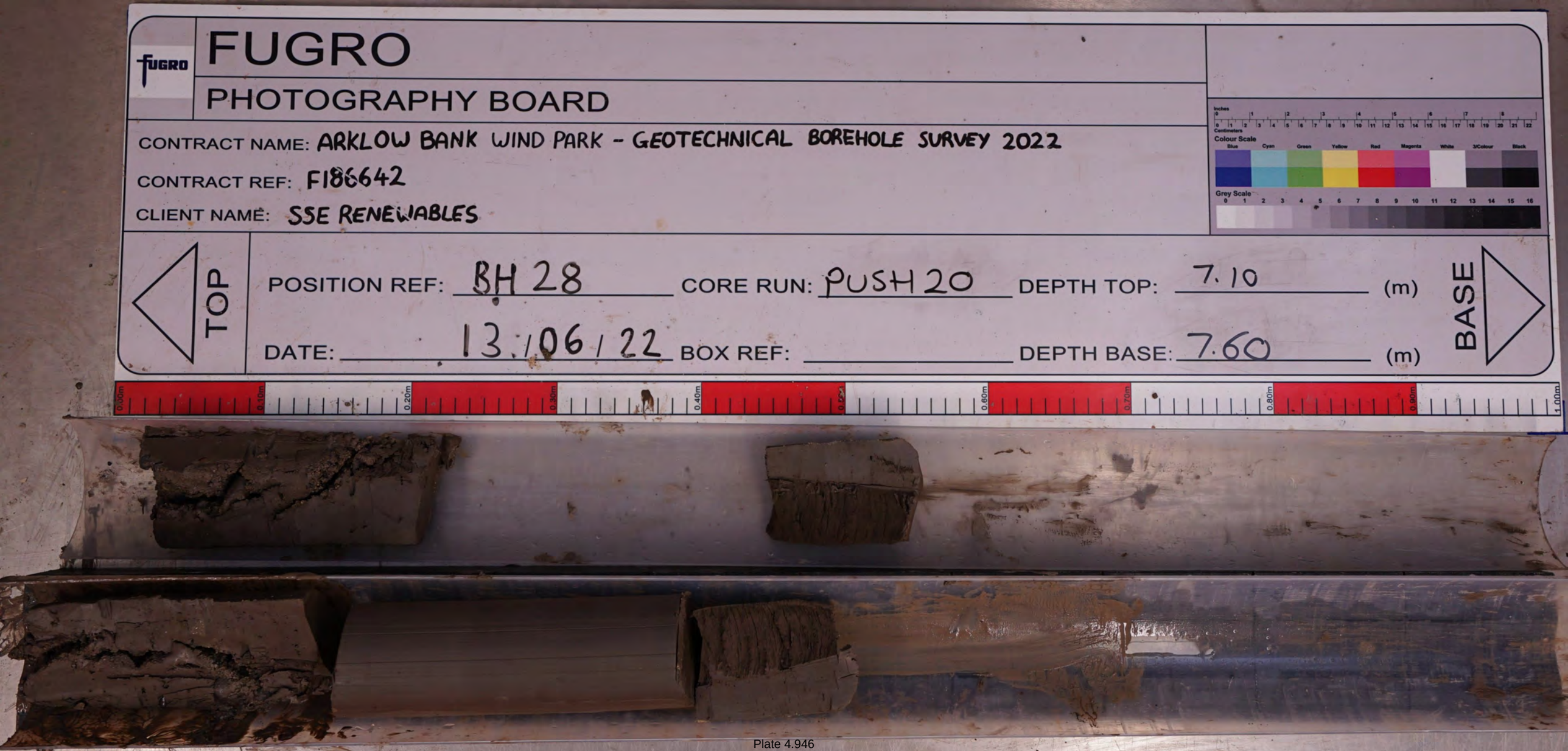
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 20
DEPTH TOP: 7.10 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 7.60 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.945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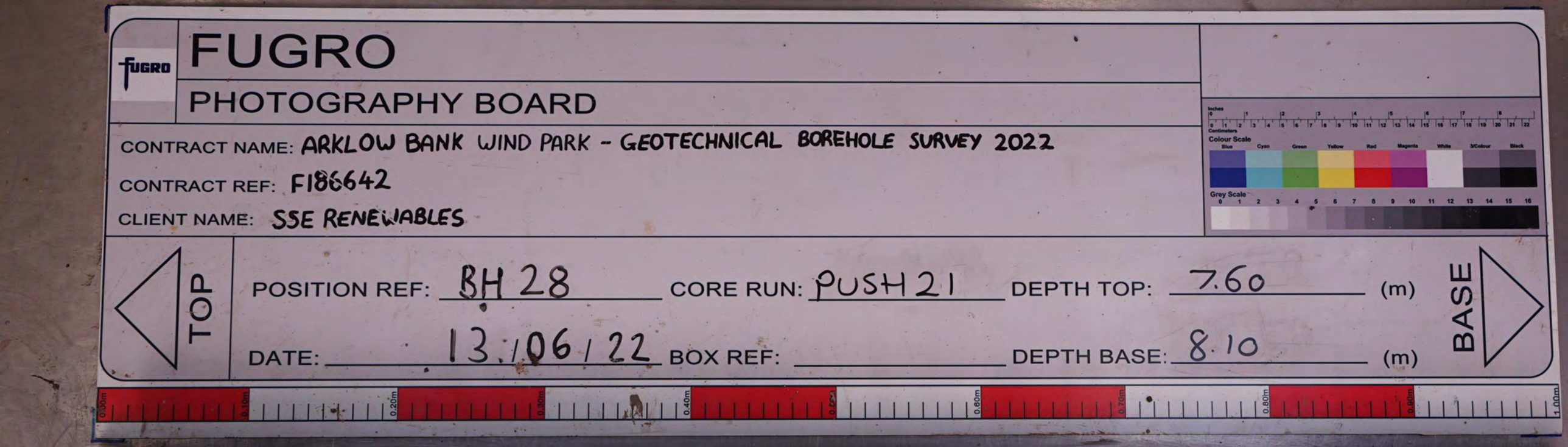
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 20
DEPTH TOP: 7.10 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 7.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.946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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 21
DEPTH TOP: 7.60 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 8.10 (m)
BASE
Colour Scale
Grey Scale

Plate 4.947

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 21 DEPTH TOP: 7.60 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 8.10 (m)

BASE



Plate 4.948

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

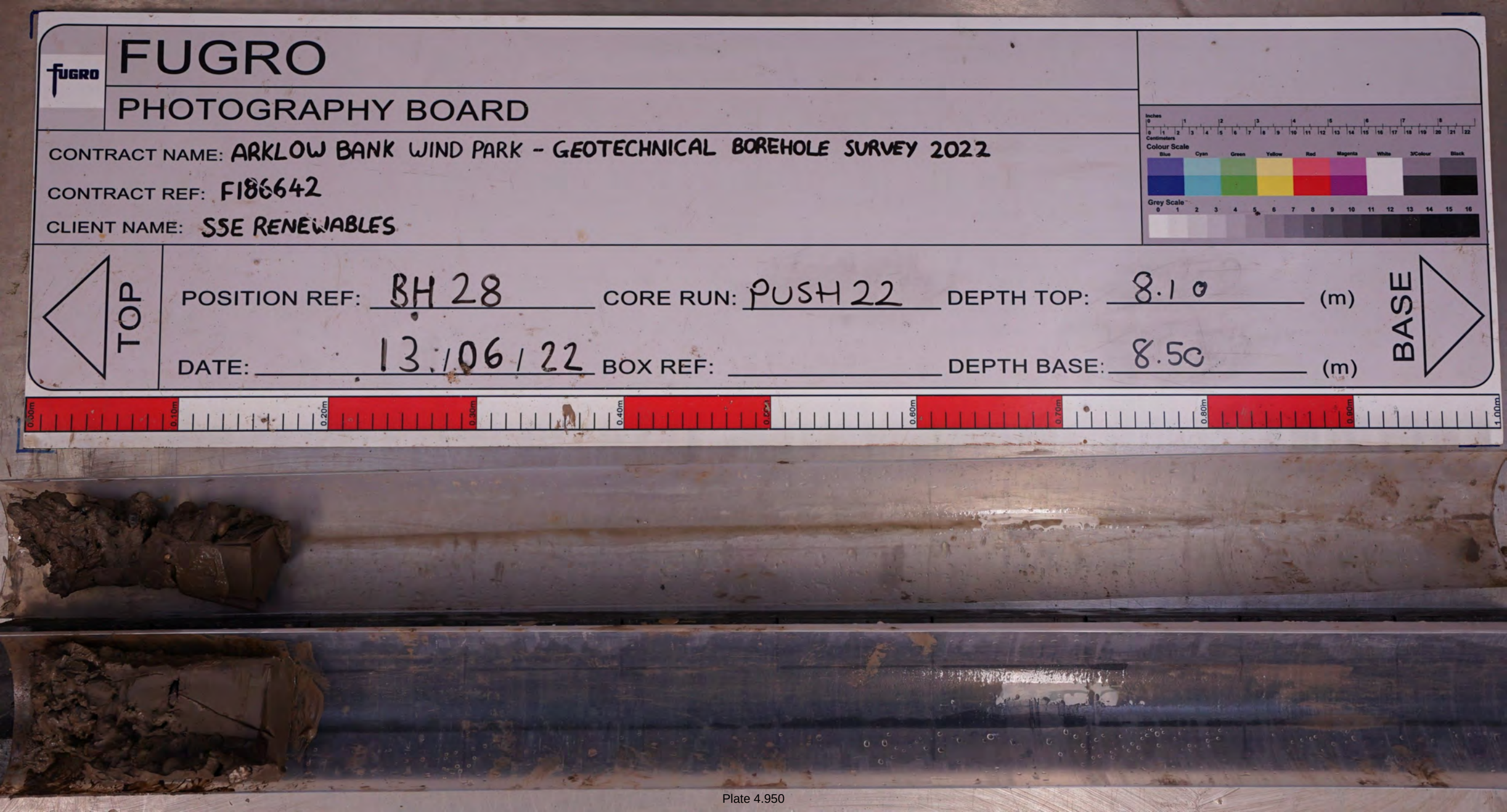
POSITION REF: BH 28 CORE RUN: PUSH 22 DEPTH TOP: 8.10 (m)

DATE: 13/06/22 BOX REF: _____ DEPTH BASE: 8.50 (m)

BASE



Plate 4.949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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 22
DEPTH TOP: 8.10 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 8.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.950

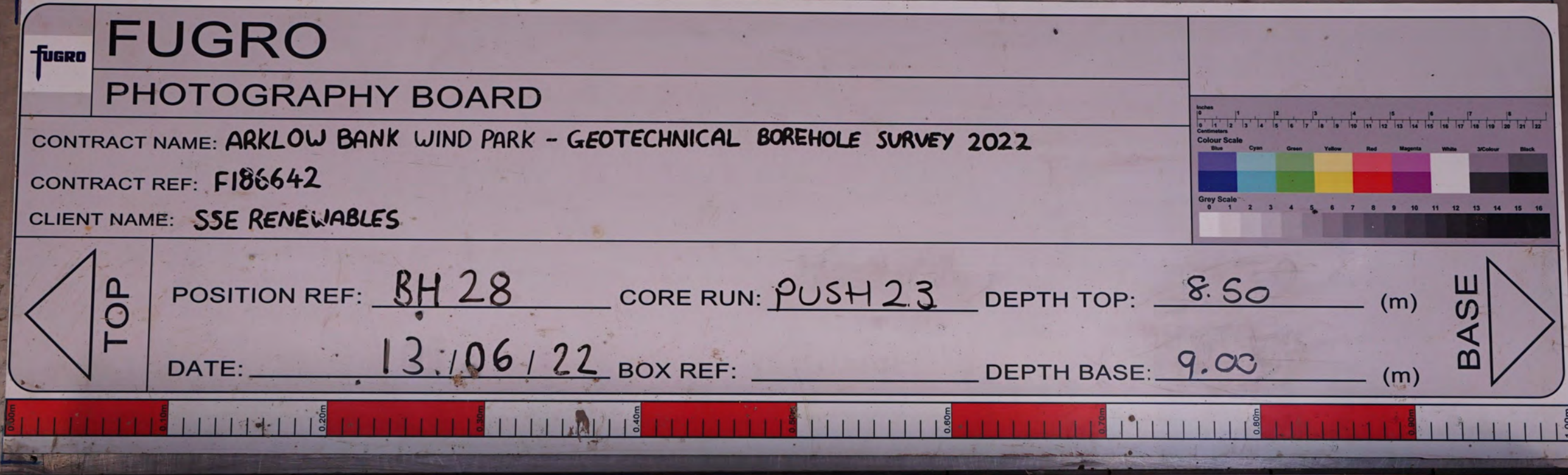

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 23
DEPTH TOP: 8.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 9.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.951

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

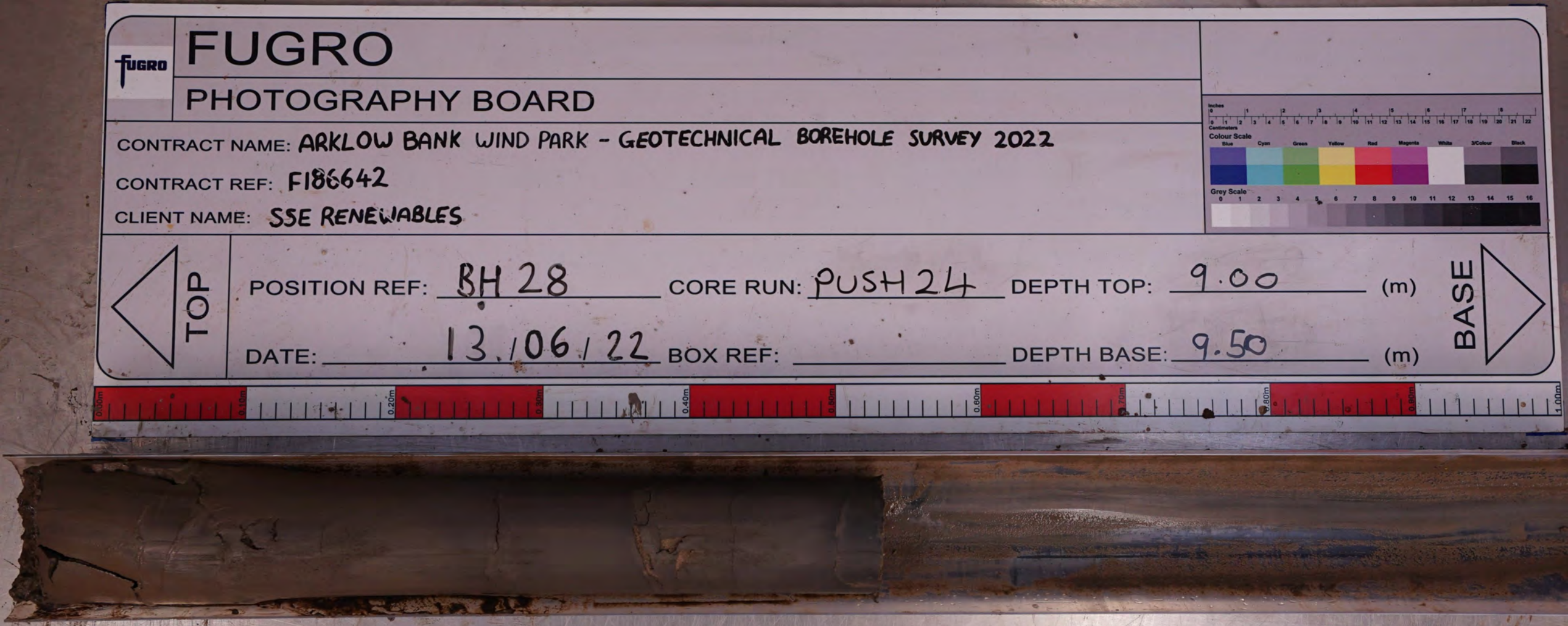
POSITION REF: BH 28 CORE RUN: PUSH 23 DEPTH TOP: 8.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 9.00 (m)

BASE



Plate 4.952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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 24
DEPTH TOP: 9.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 9.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.953


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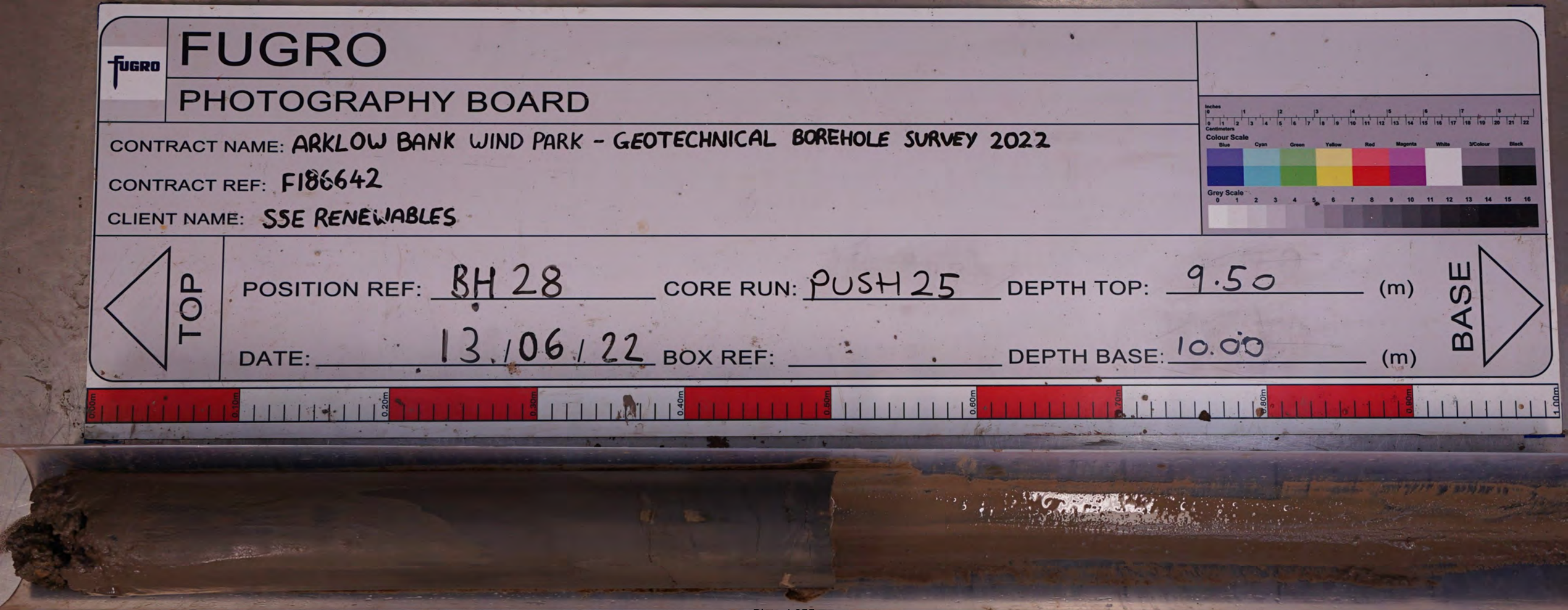
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 24
DEPTH TOP: 9.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 9.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.954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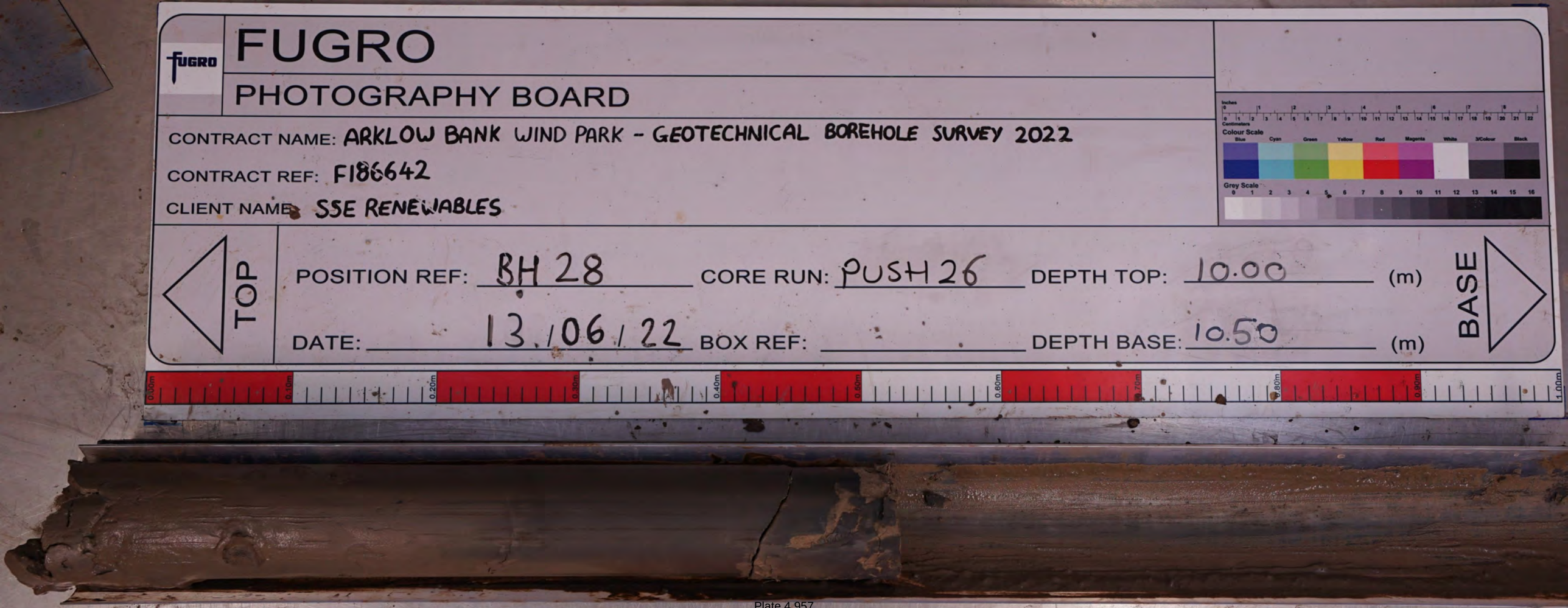
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 25
DEPTH TOP: 9.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 10.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.955


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 25
DEPTH TOP: 9.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 10.00 (m)
BASE
Colour Scale
Grey Scale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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 26
DEPTH TOP: 10.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 10.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.957

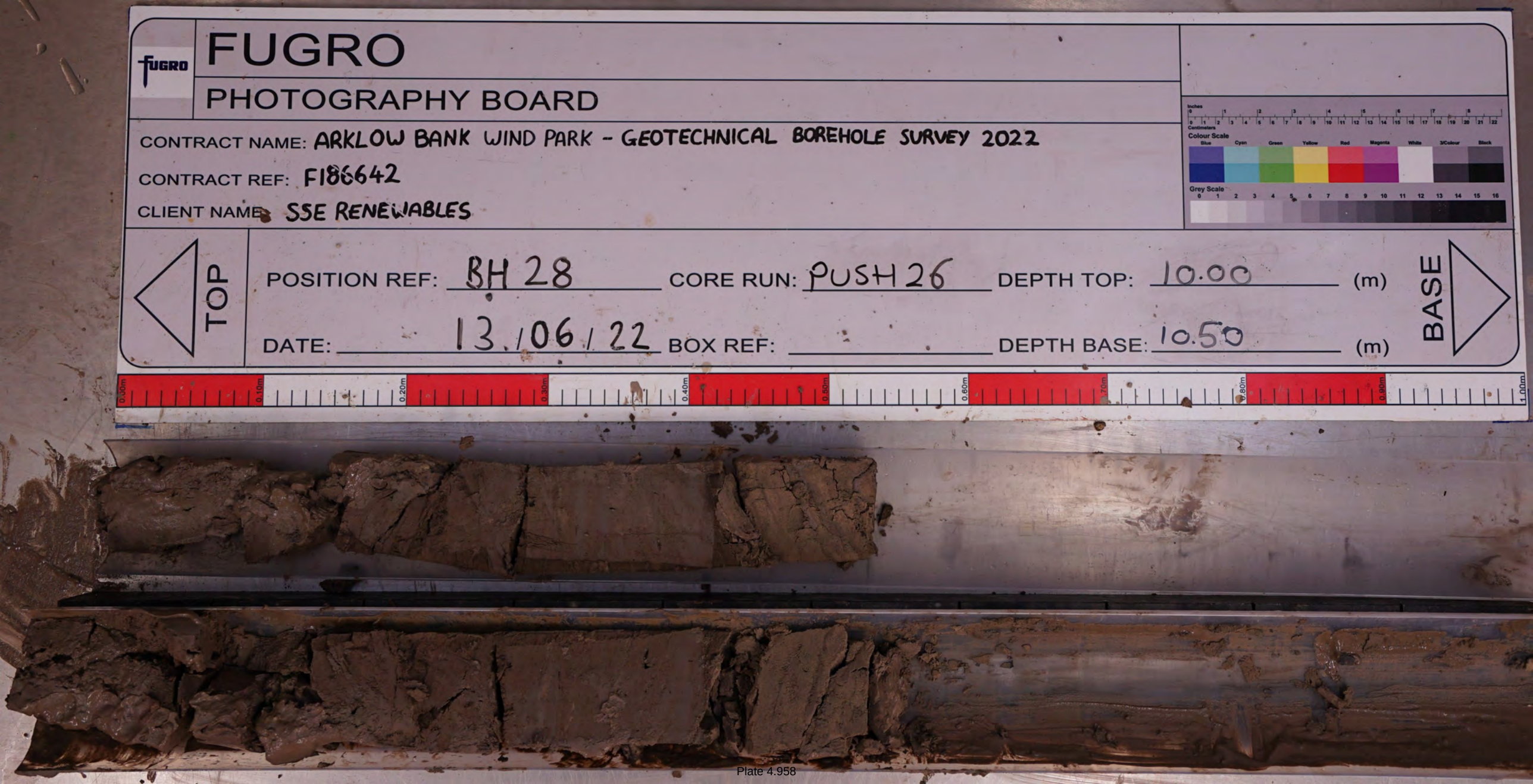

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 26
DEPTH TOP: 10.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 10.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.958

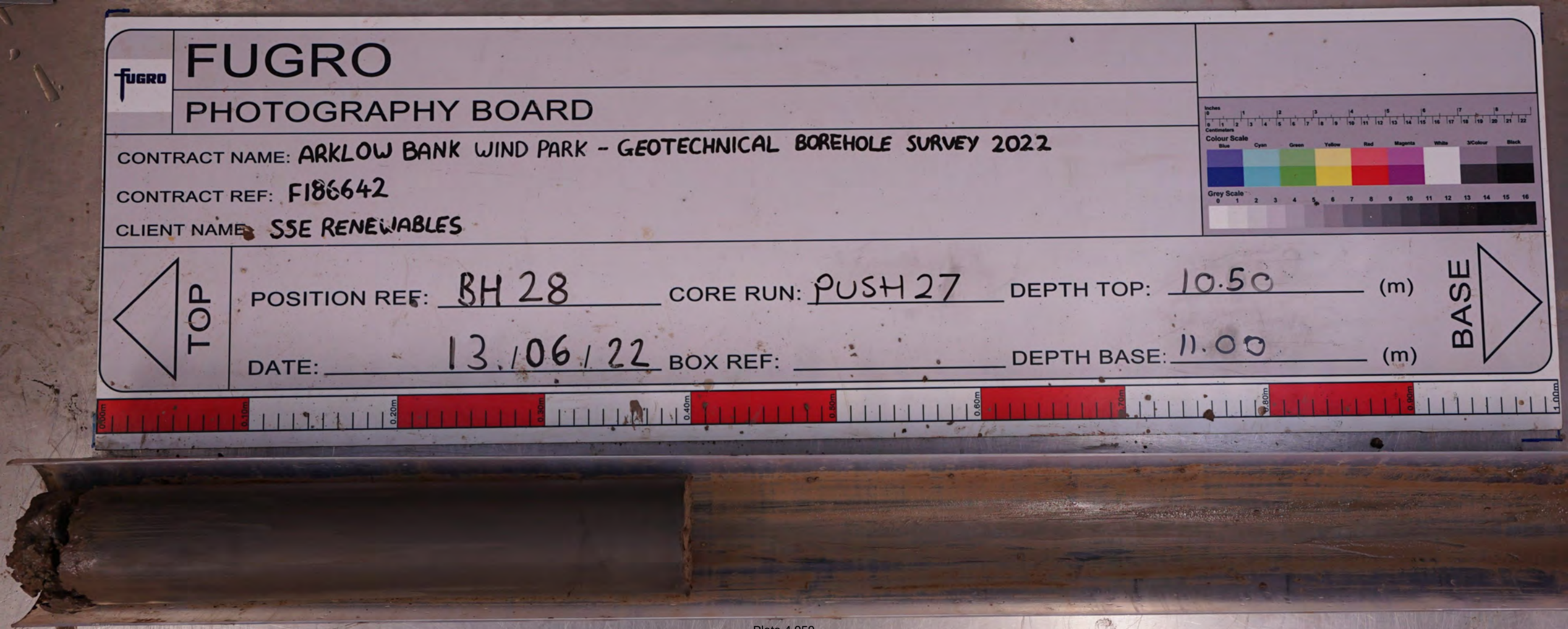
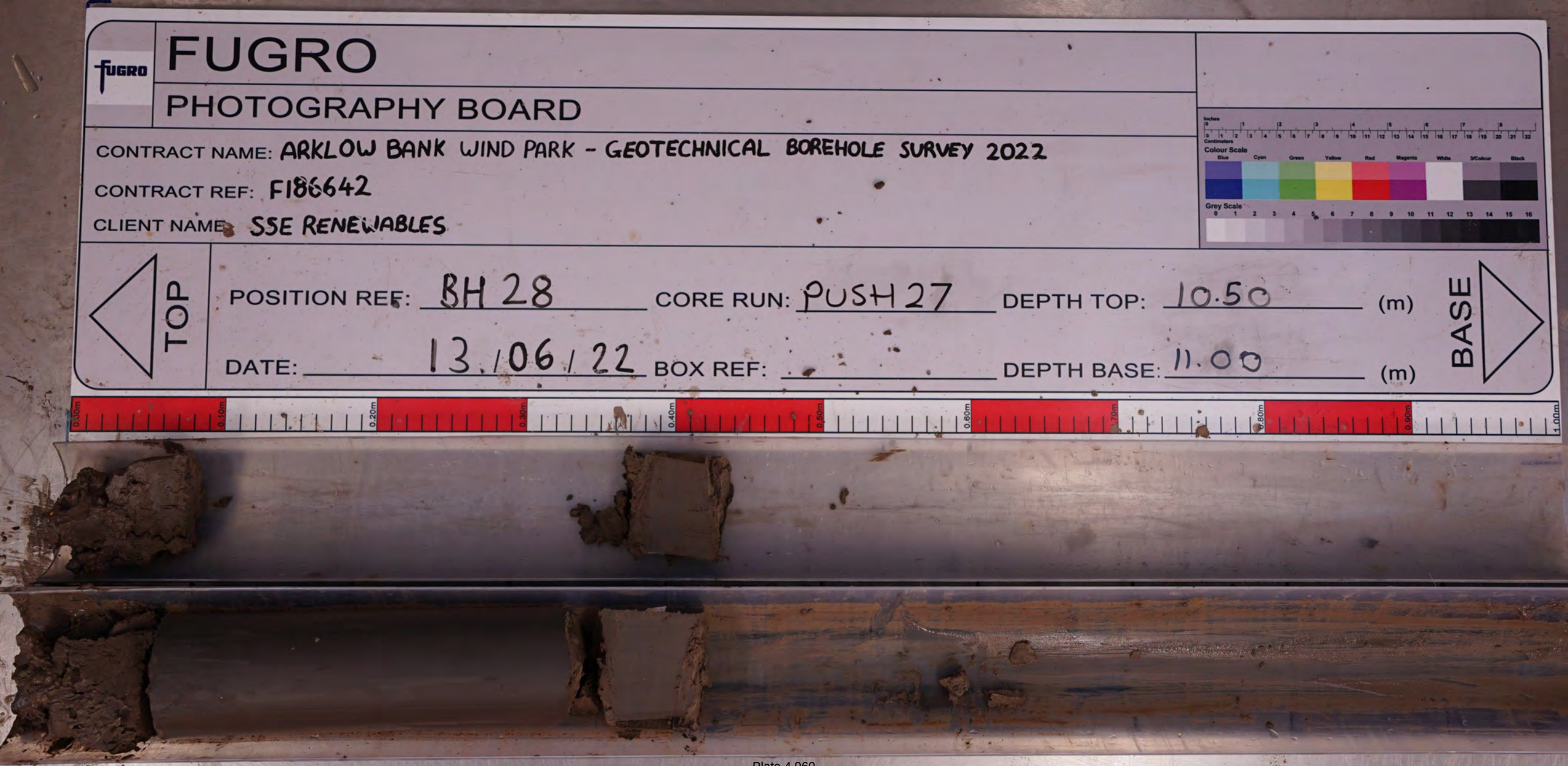

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 27
DEPTH TOP: 10.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.959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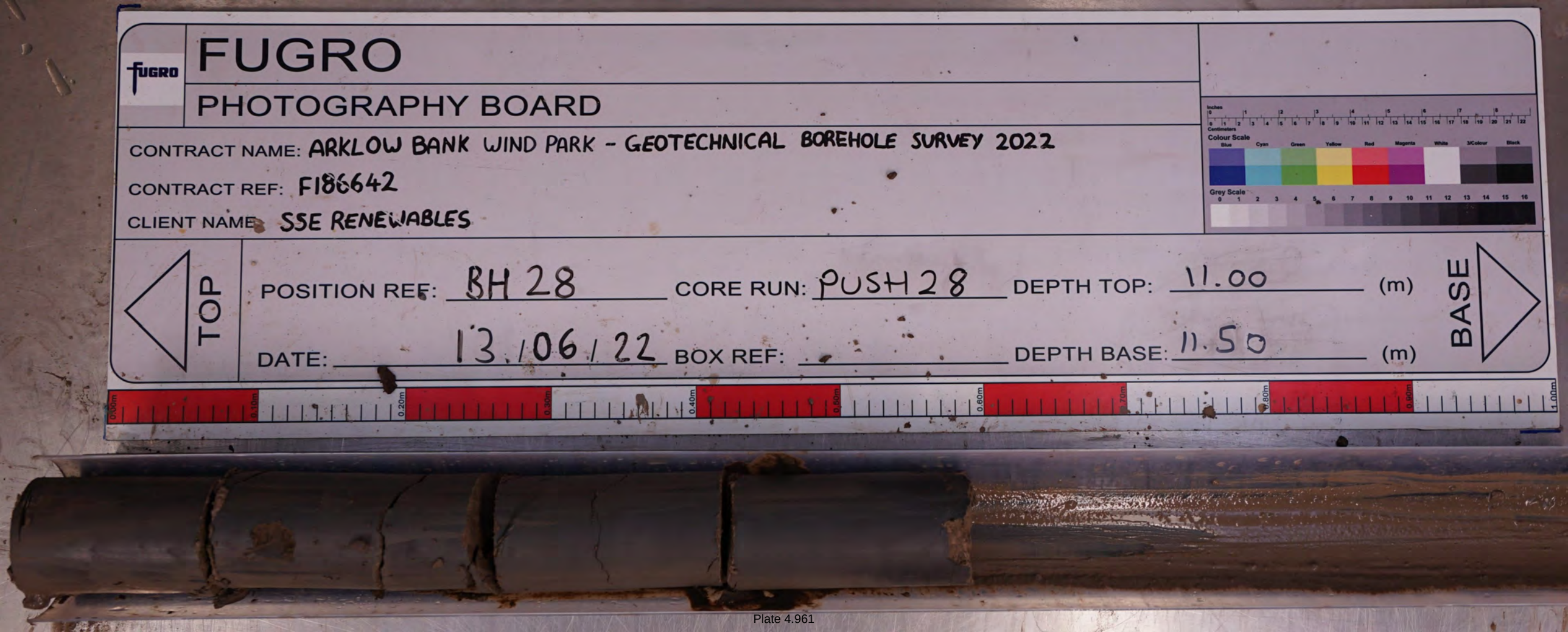
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 27
DEPTH TOP: 10.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 11.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.960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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 28
DEPTH TOP: 11.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 11.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.961


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 28
DEPTH TOP: 11.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 11.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.962

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

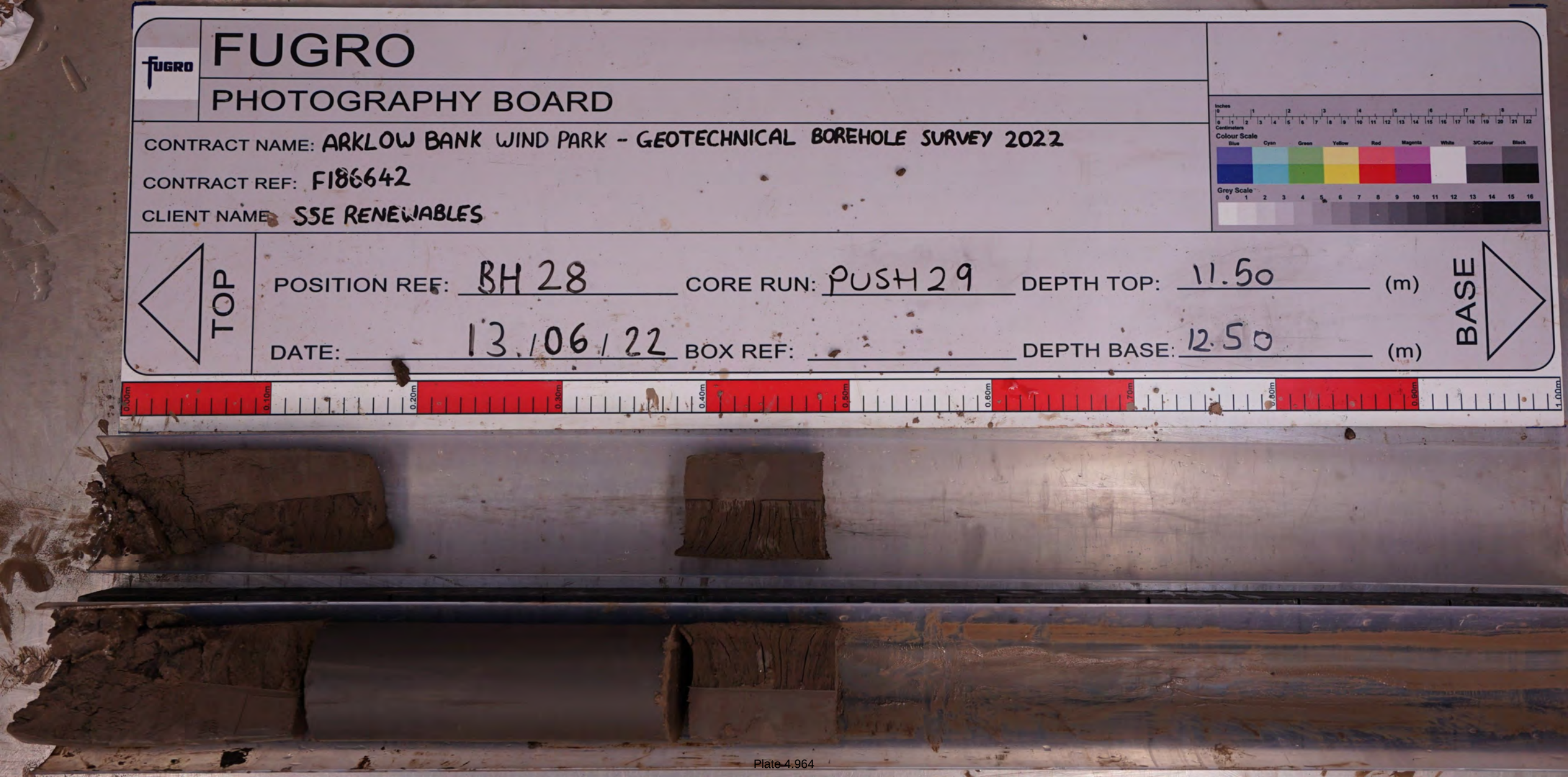
TOP

POSITION REF: BH 28 CORE RUN: PUSH 29 DEPTH TOP: 11.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 12.50 (m)

BASE




FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 29
DEPTH TOP: 11.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 12.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 30 DEPTH TOP: 12.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 12.50 (m)

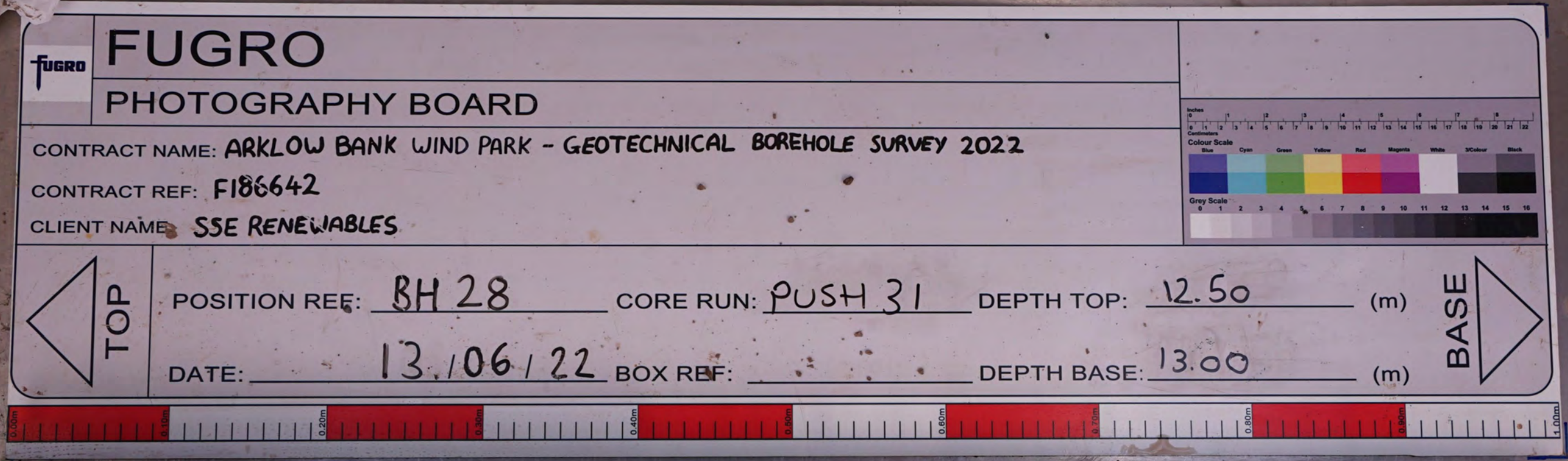
BASE



Plate 4.965


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 30
DEPTH TOP: 12.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 12.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.966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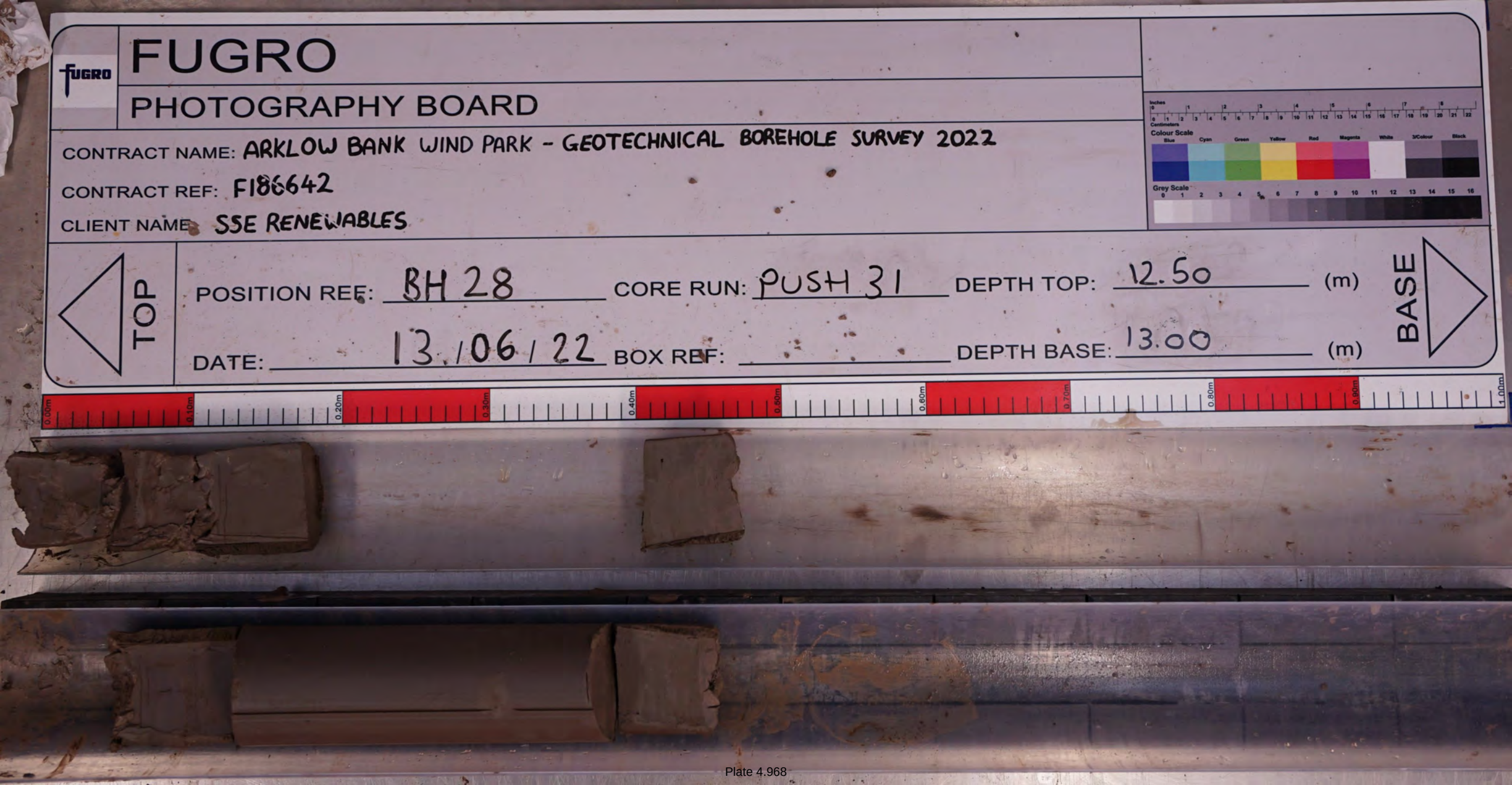
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 31
DEPTH TOP: 12.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 13.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.967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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 31
DEPTH TOP: 12.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 13.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.968

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 32 DEPTH TOP: 13.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 13.50 (m)

BASE

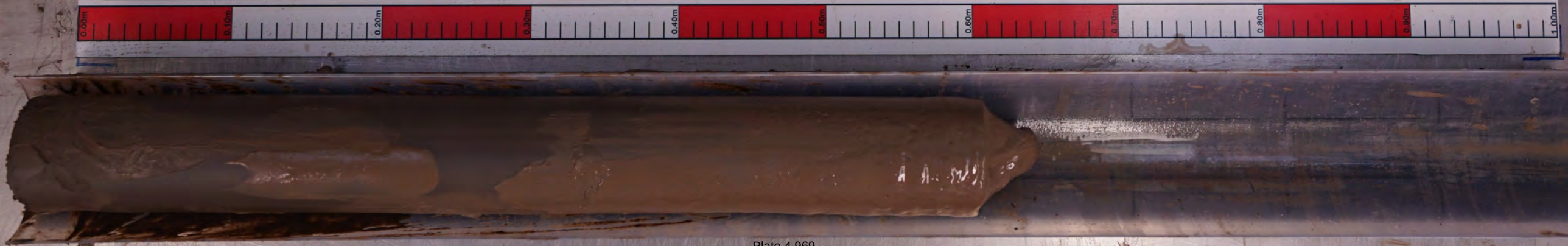


Plate 4.969

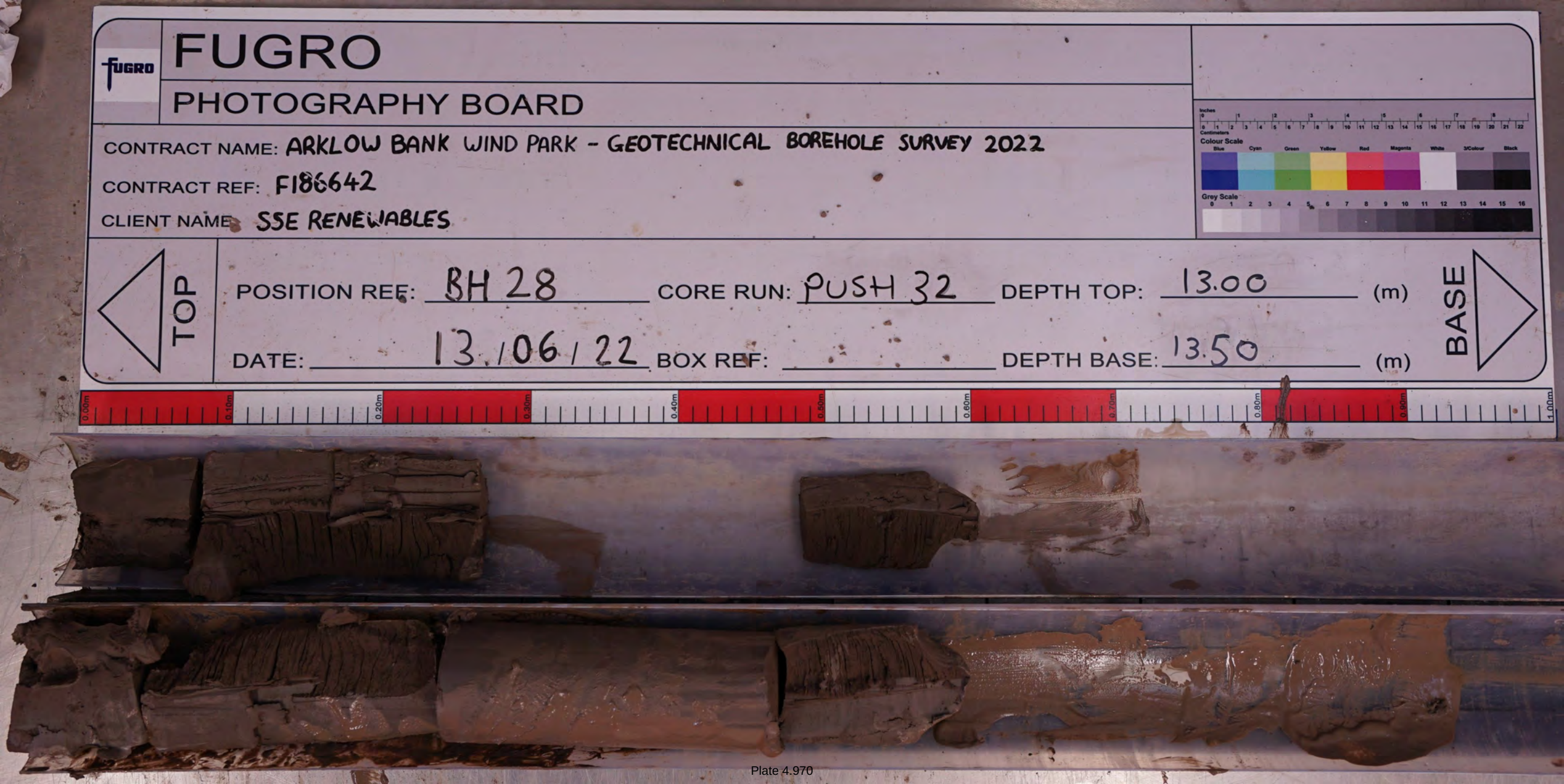

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 32
DEPTH TOP: 13.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 13.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.970

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 33 DEPTH TOP: 13.50 (m)

DATE: 13/06/22 BOX REF: _____ DEPTH BASE: 14.00 (m)

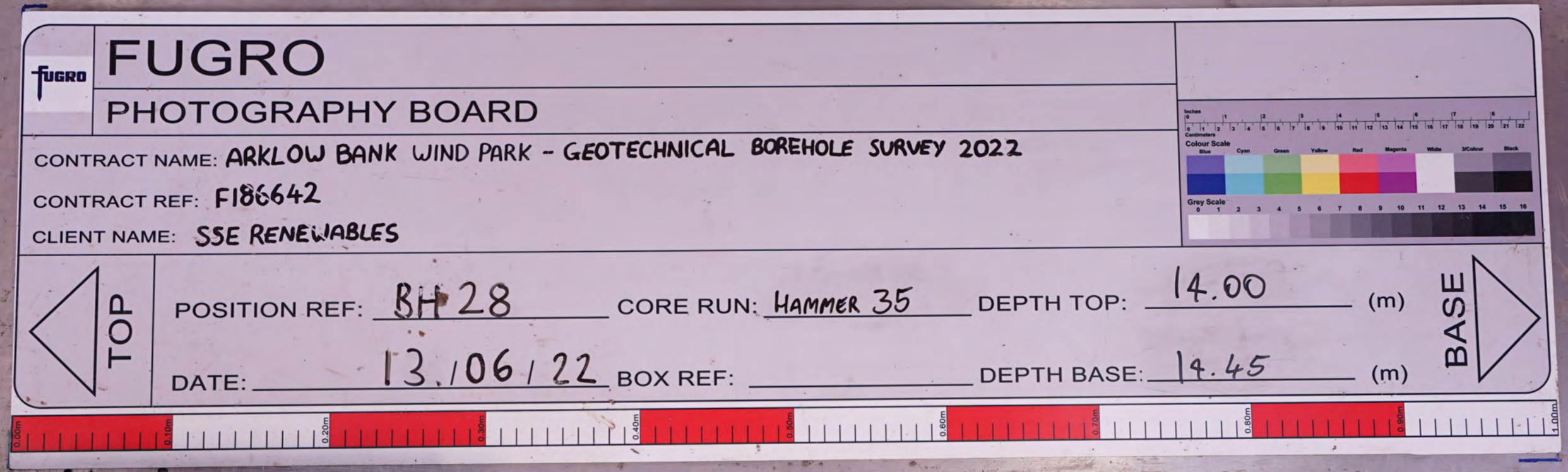
BASE



Plate 4.971


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 33
DEPTH TOP: 13.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 14.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.972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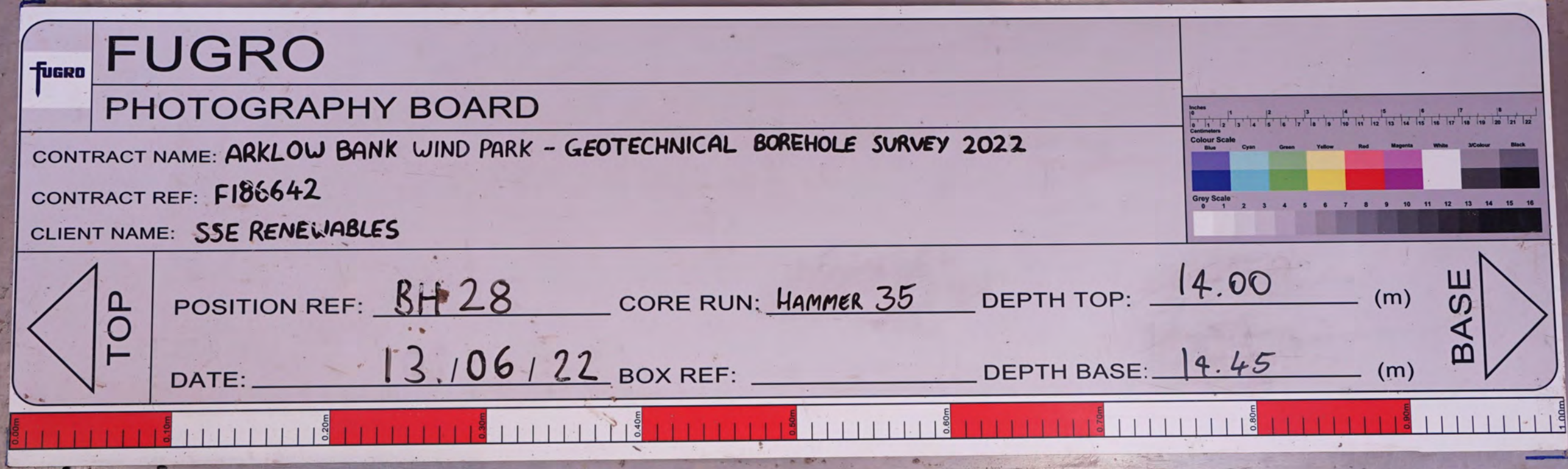
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: HAMMER 35
DEPTH TOP: 14.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 14.45 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.973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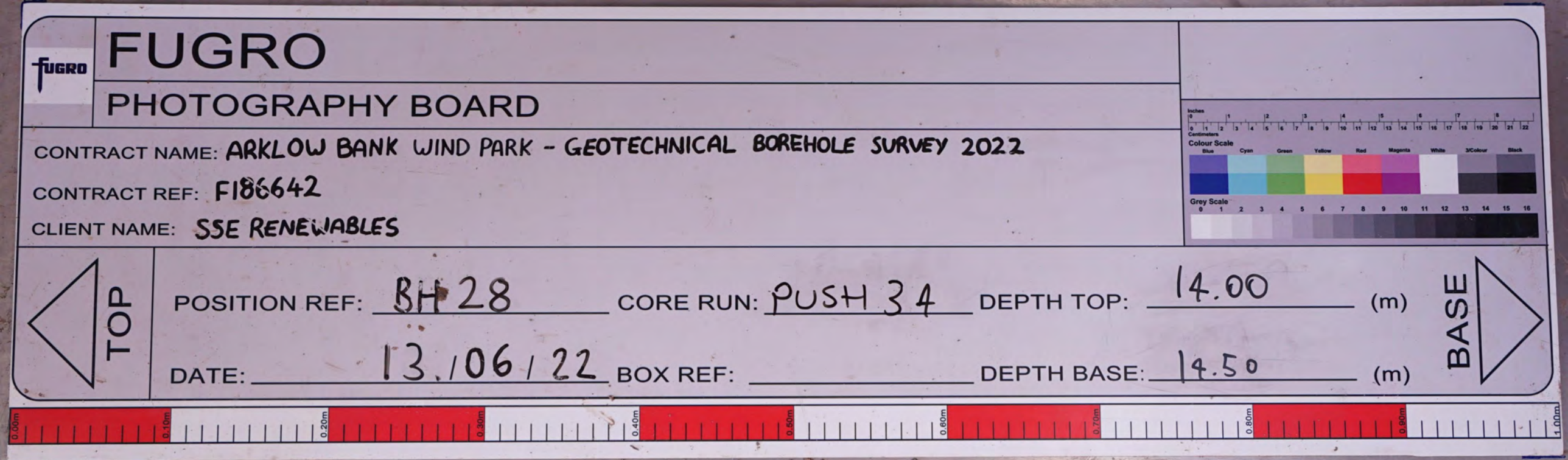
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: HAMMER 35
DEPTH TOP: 14.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 14.45 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.974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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: PUSH 34
DEPTH TOP: 14.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 14.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.975

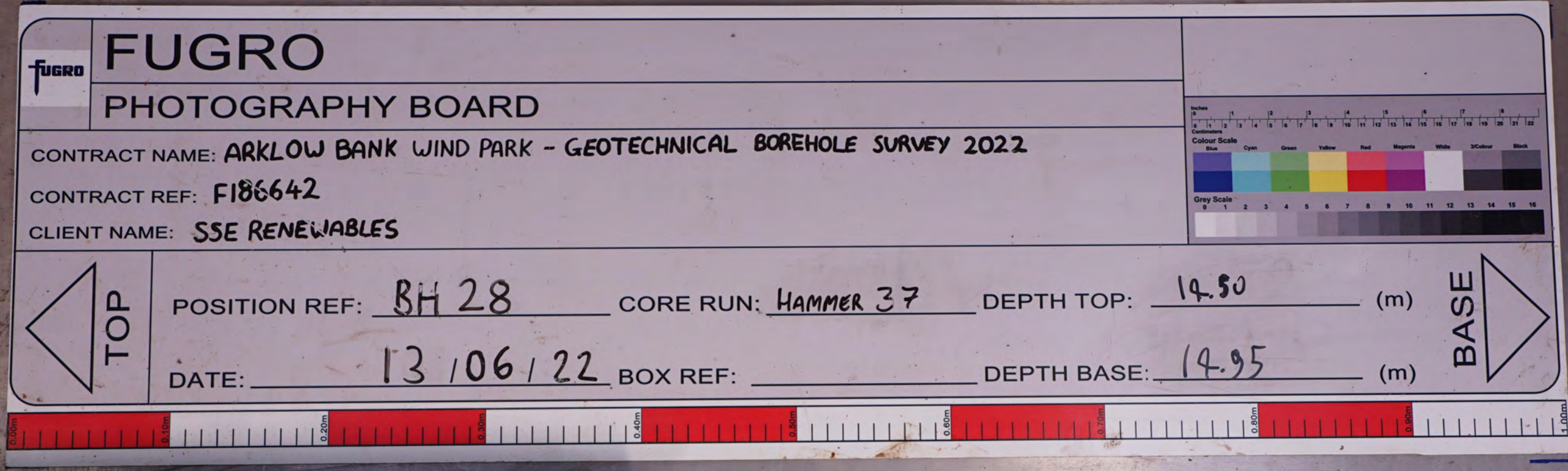

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 37
DEPTH TOP: 14.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 14.95 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.976

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 37 DEPTH TOP: 14.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 14.95 (m)

BASE



Plate 4.977

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 38 DEPTH TOP: 15.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 15.45 (m)

BASE



Plate 4.978

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 38 DEPTH TOP: 15.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 15.45 (m)

BASE



Plate 4.979

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 39 DEPTH TOP: 15.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 15.60 (m)

BASE



Plate 4.980


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 39
DEPTH TOP: 15.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 15.60 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.981

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 40 DEPTH TOP: 15.60 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 16.05 (m)

BASE



Plate 4.982

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 40 DEPTH TOP: 15.60 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 16.05 (m)

BASE



Plate 4.983

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

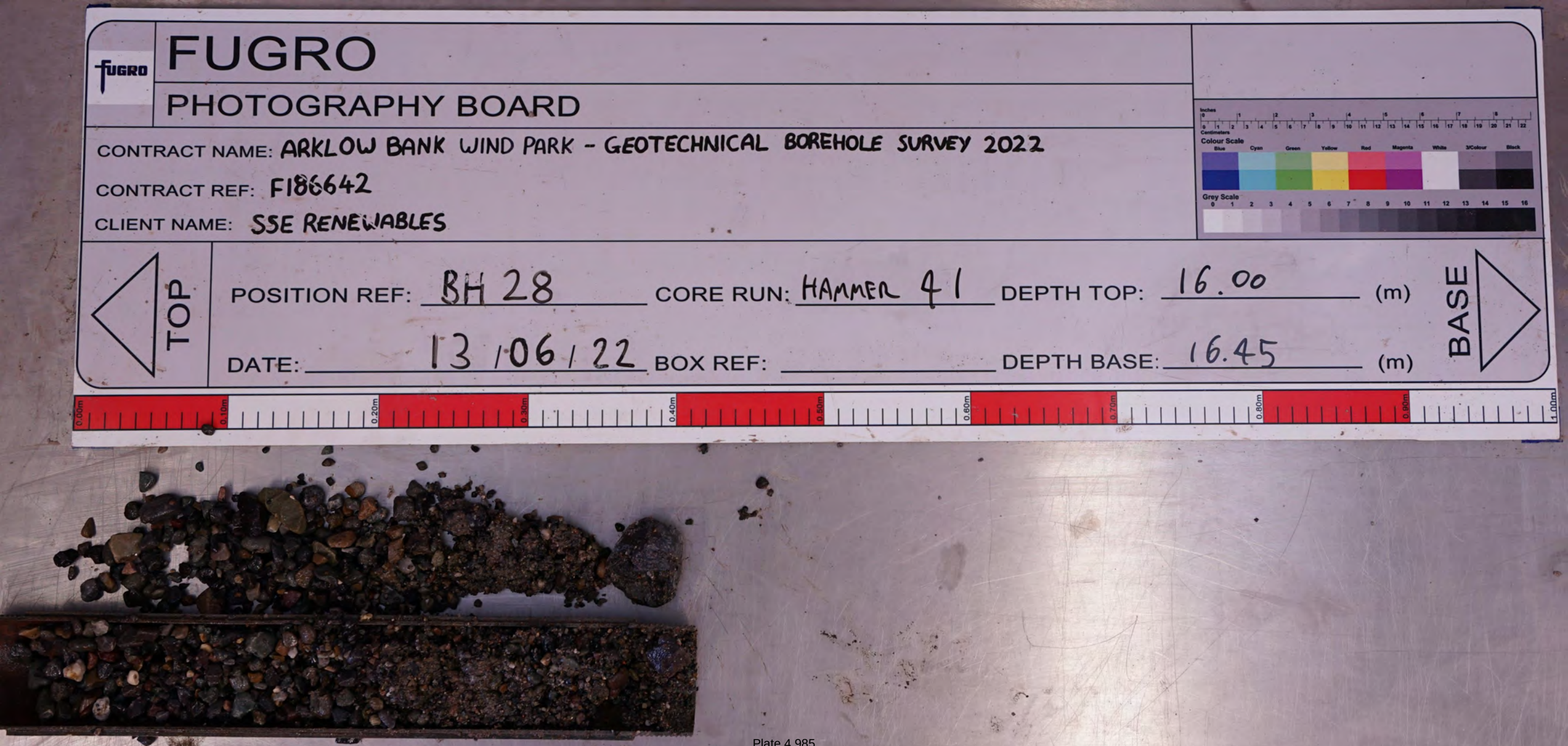
POSITION REF: BH 28 CORE RUN: HAMMER 41 DEPTH TOP: 16.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 16.45 (m)

BASE



Plate 4.984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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 41
DEPTH TOP: 16.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 16.45 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.985

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 42 DEPTH TOP: 16.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 16.95 (m)

BASE

NO RECOVERY

Plate 4.986

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 43 DEPTH TOP: 16.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 16.95 (m)

BASE



Plate 4.087

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 44 DEPTH TOP: 17.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 17.45 (m)

BASE



Plate 4.988

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 45 DEPTH TOP: 17.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 17.95 (m)

BASE



Plate 4.989

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

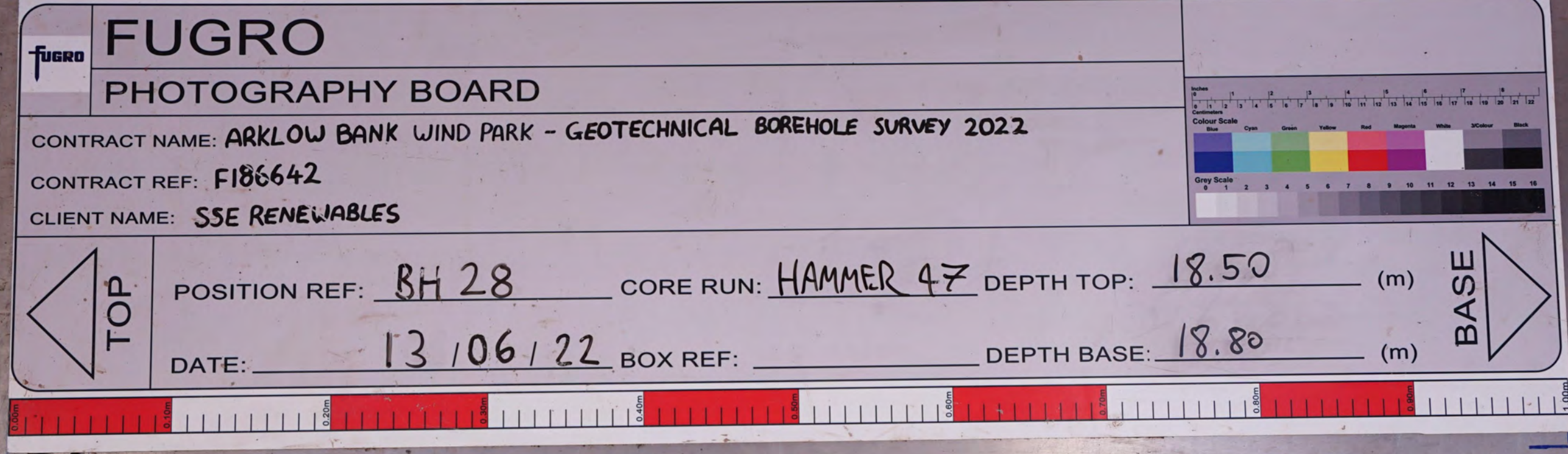
POSITION REF: BH 28 CORE RUN: HAMMER 46 DEPTH TOP: 18.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 18.45 (m)

BASE



Plate 4.990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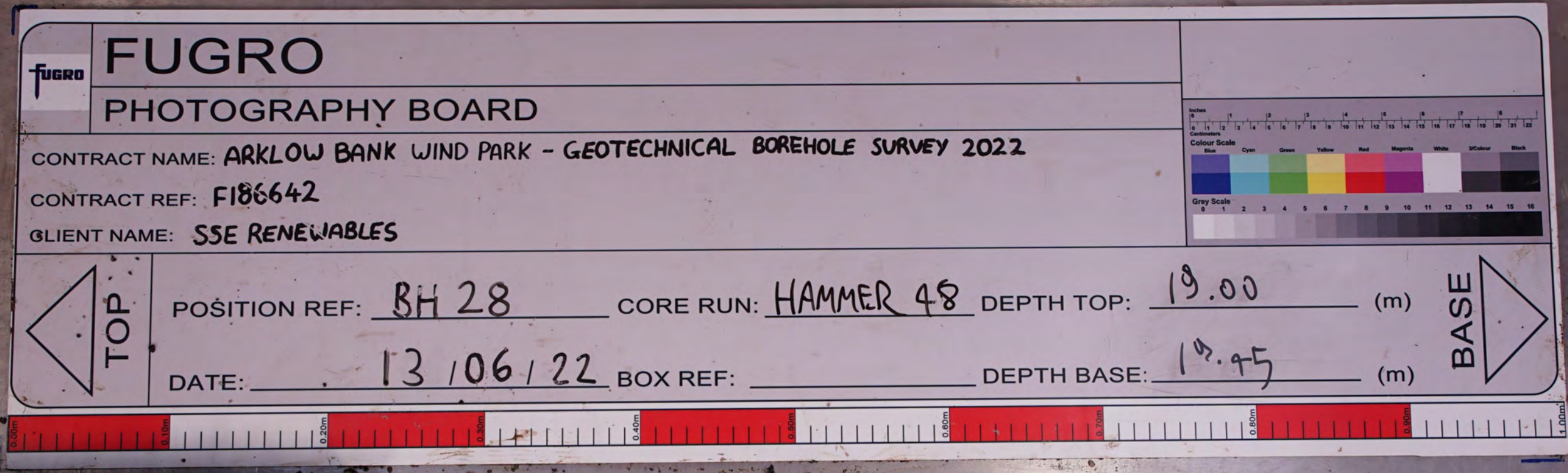
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 47
DEPTH TOP: 18.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 18.80 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.991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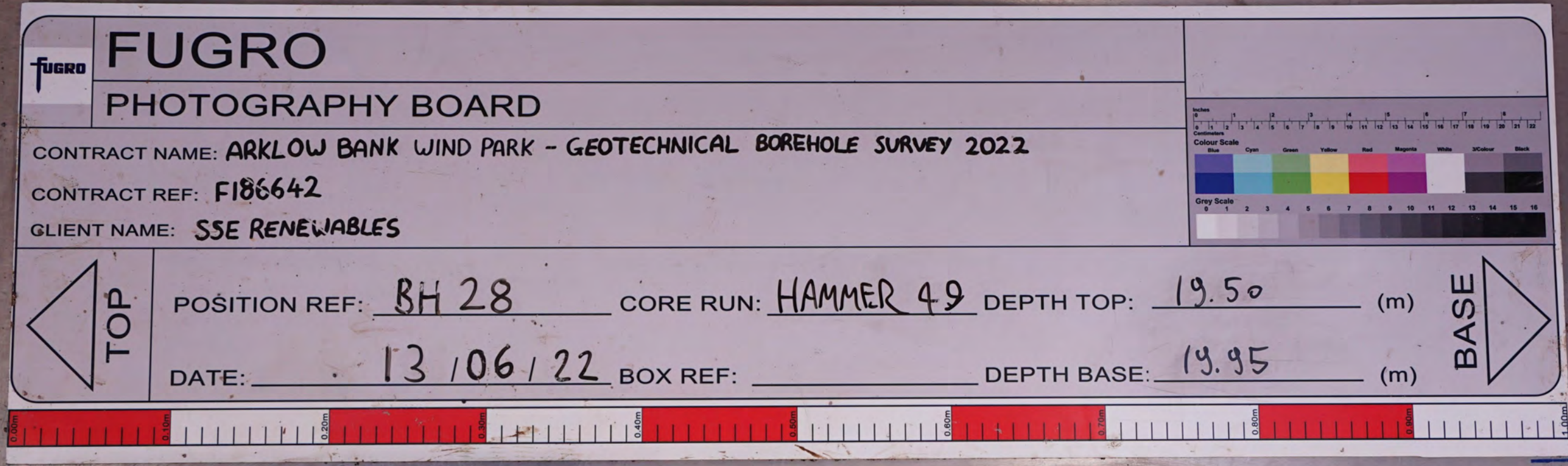
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 48
DEPTH TOP: 19.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 19.95 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.992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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 49
DEPTH TOP: 19.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 19.95 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.993

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 49 DEPTH TOP: 19.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 19.95 (m)

BASE





Plate 4.994

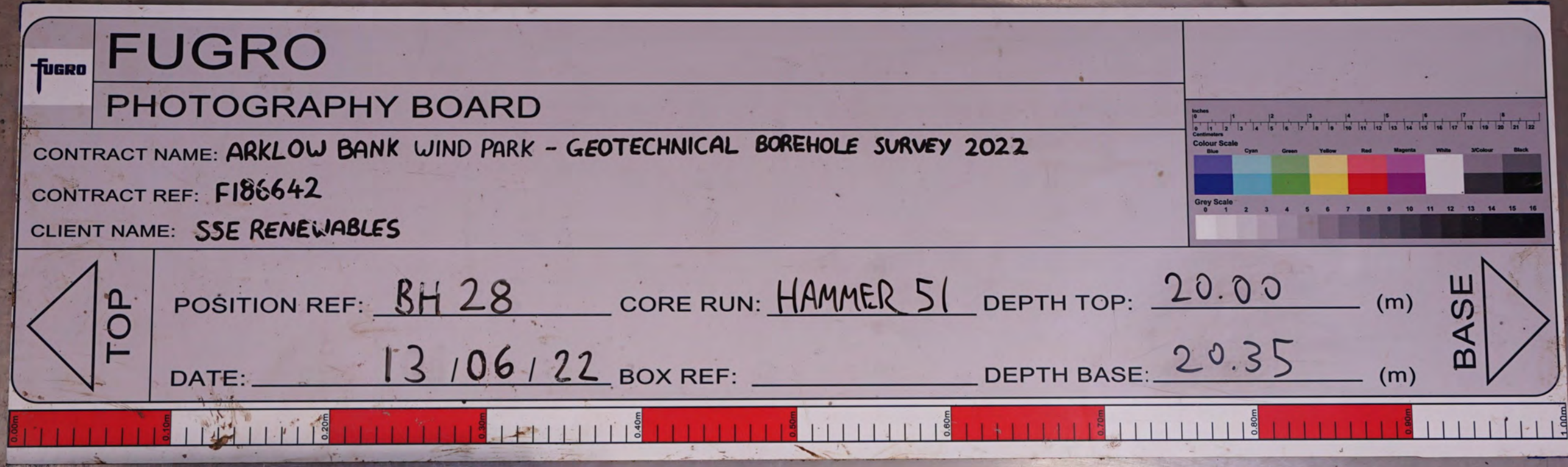

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 51
DEPTH TOP: 20.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 20.35 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.995

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: HAMMER 51 DEPTH TOP: 20.00 (m)

DATE: 13/06/22 BOX REF: _____ DEPTH BASE: 20.35 (m)

BASE

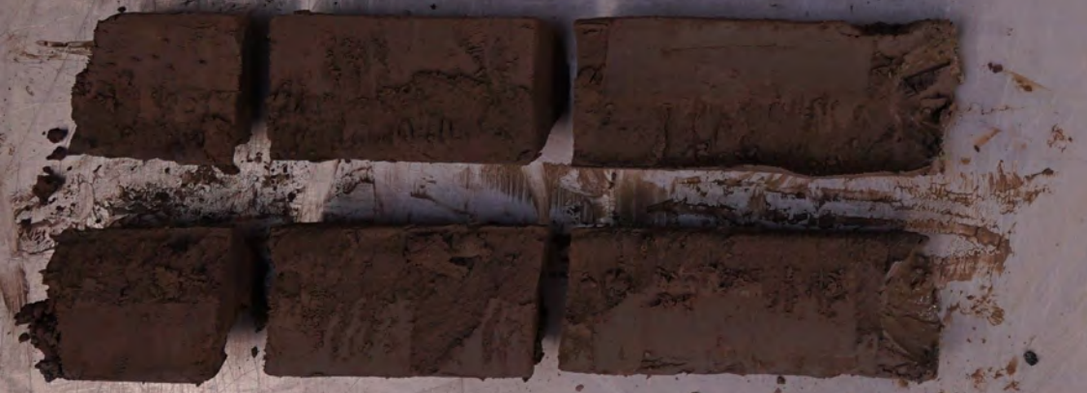


Plate 4.996

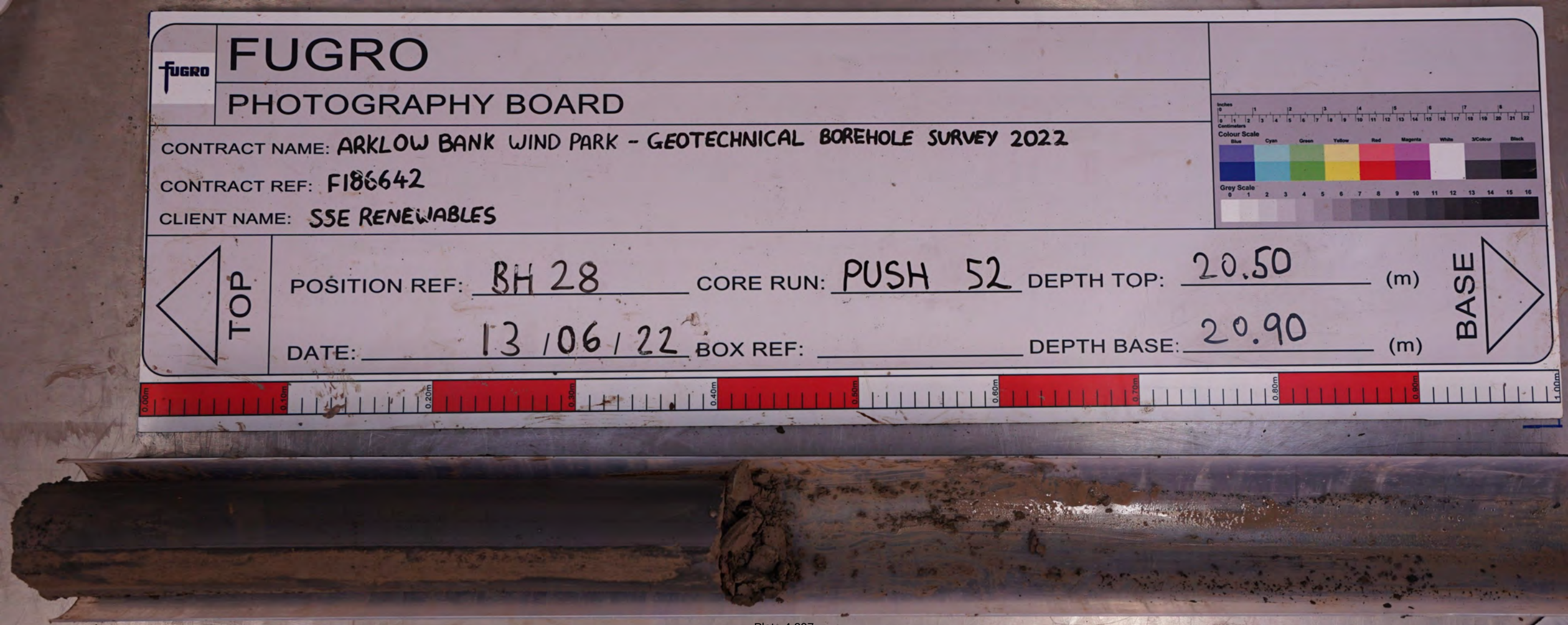
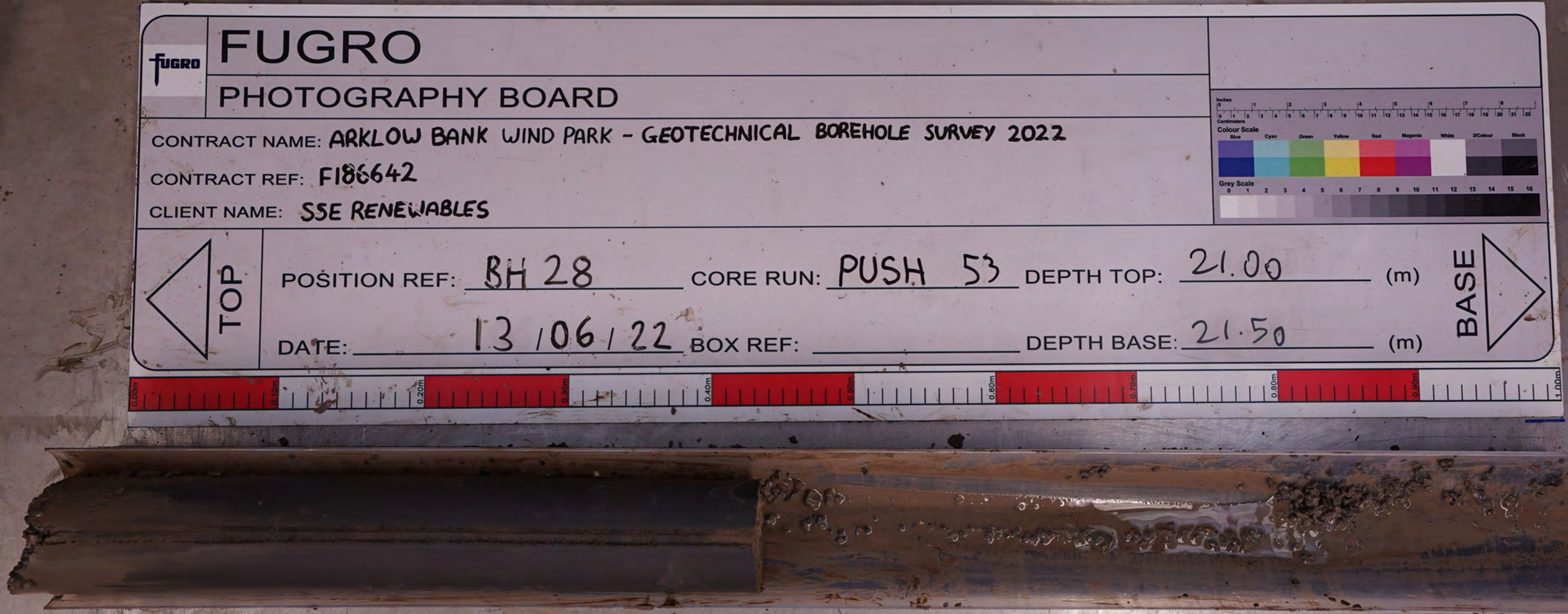

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 52
DEPTH TOP: 20.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 20.90 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.997


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 52
DEPTH TOP: 20.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 20.90 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.998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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 53
DEPTH TOP: 21.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.999

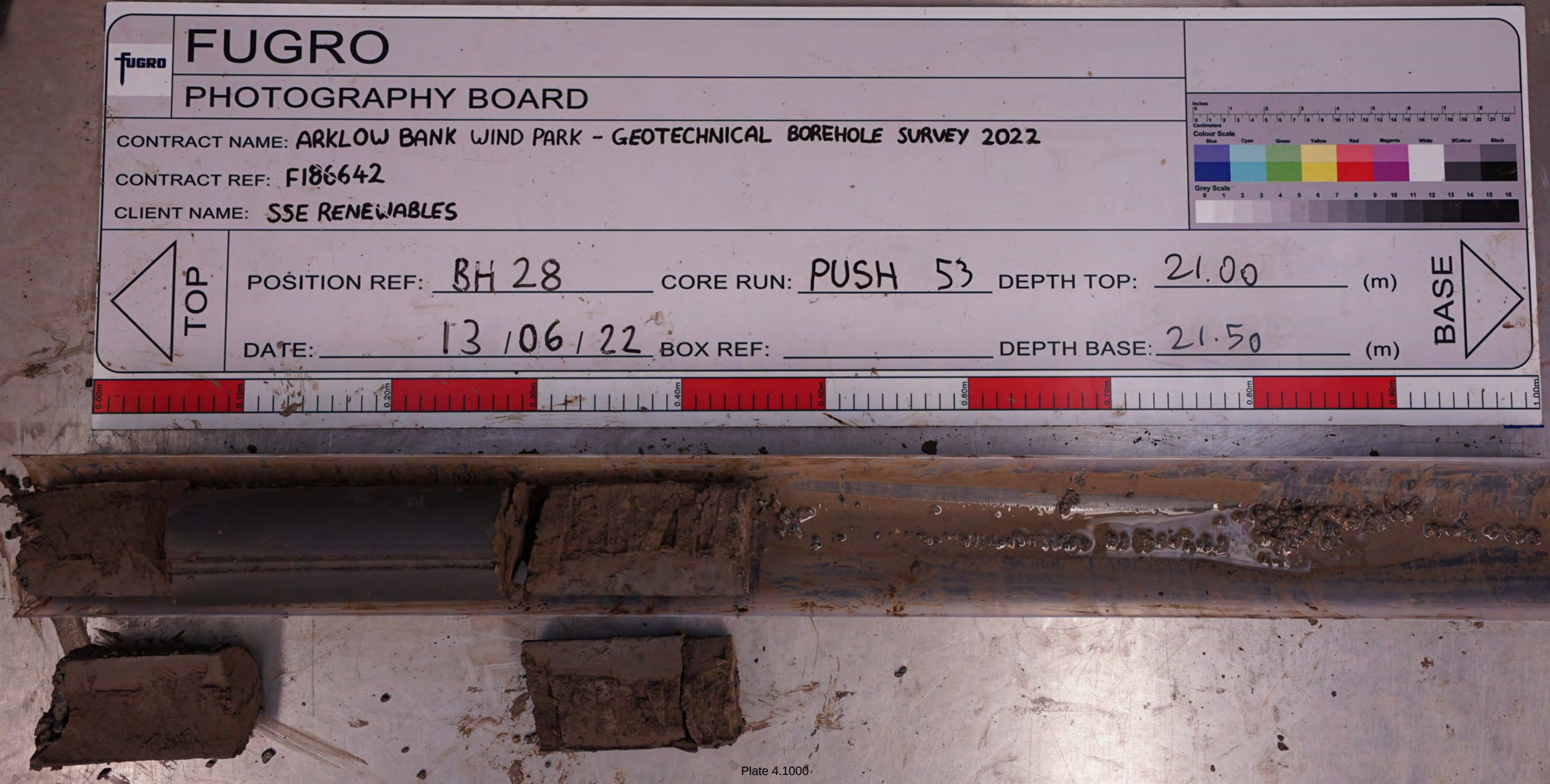

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 53
DEPTH TOP: 21.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 21.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.1000

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 54 DEPTH TOP: 21.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 22.00 (m)

BASE

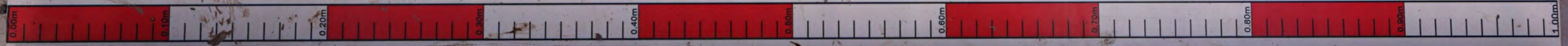




Plate 4.1001

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

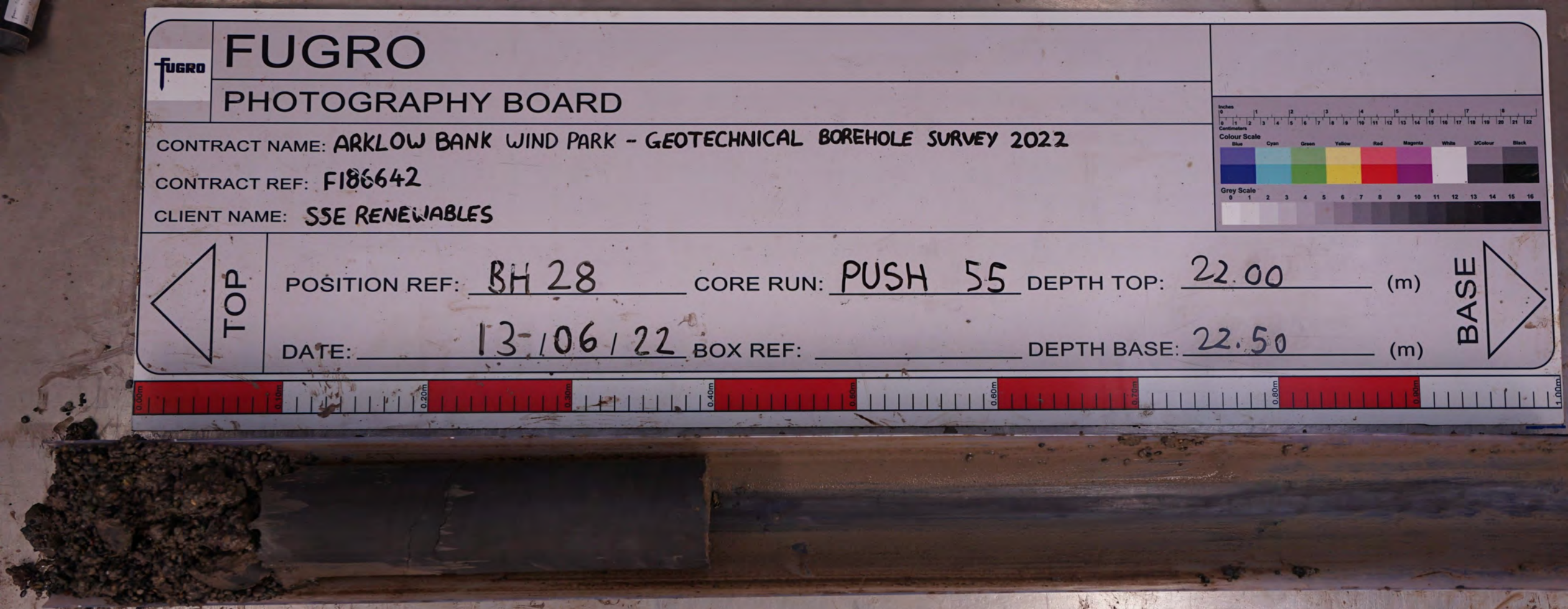
POSITION REF: BH 28 CORE RUN: PUSH 54 DEPTH TOP: 21.50 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 22.00 (m)

BASE



Plate 4.1002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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 55
DEPTH TOP: 22.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 22.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1003


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 55
DEPTH TOP: 22.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 22.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1004

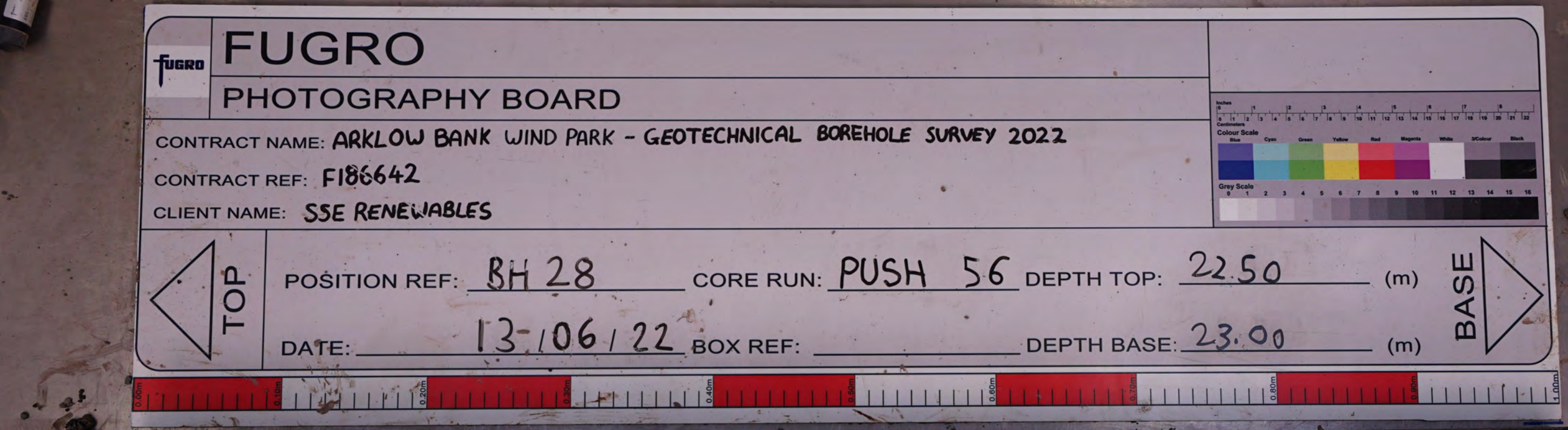

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 56
DEPTH TOP: 22.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 23.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1005

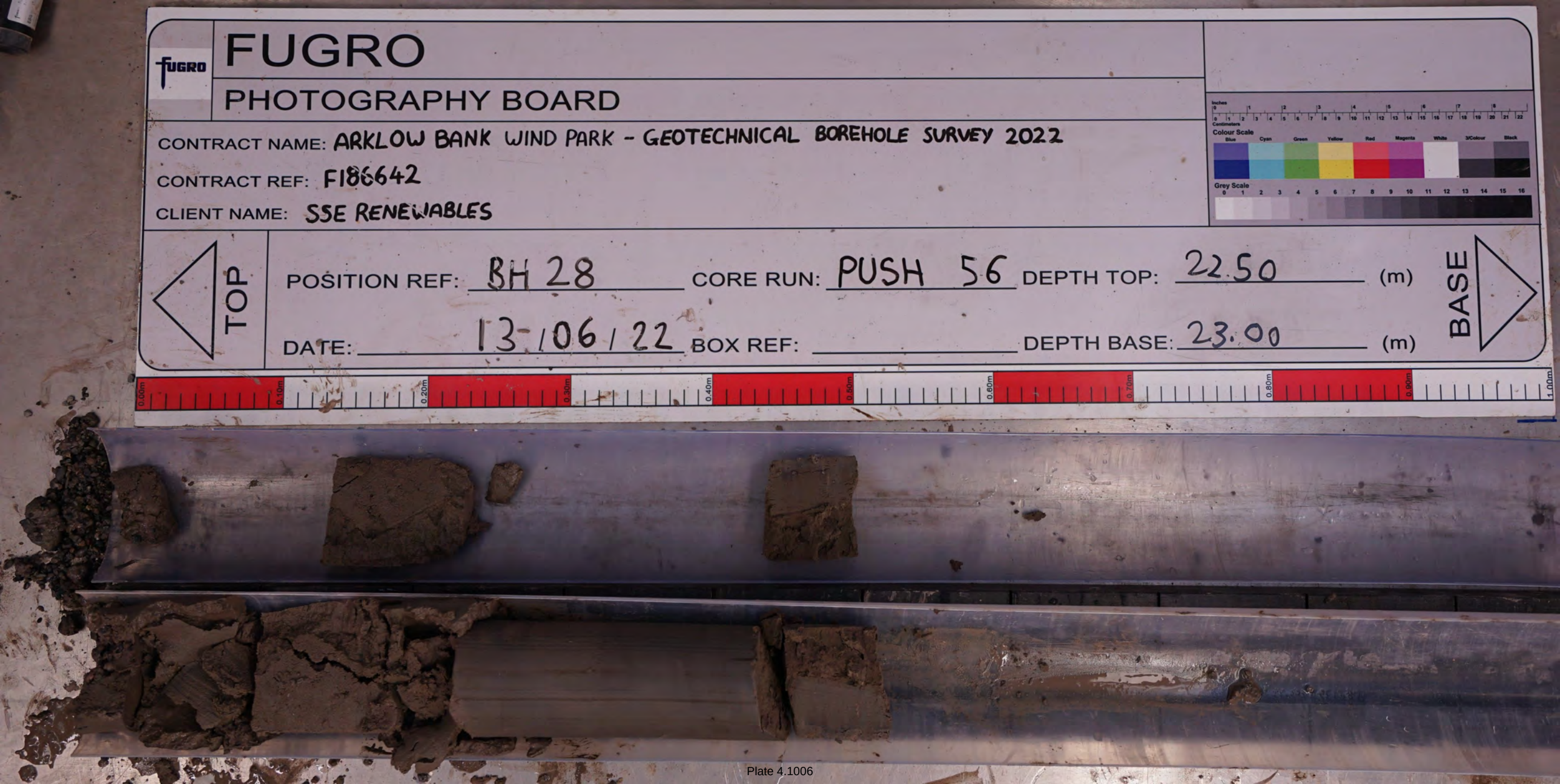

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 56
DEPTH TOP: 22.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 23.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1006

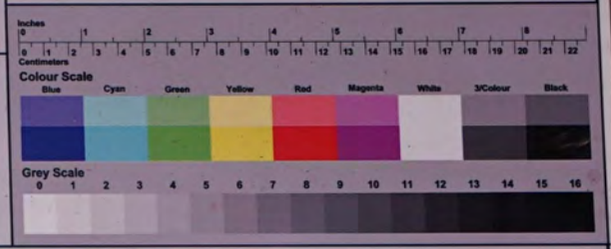
FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

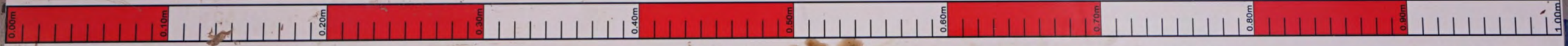


TOP

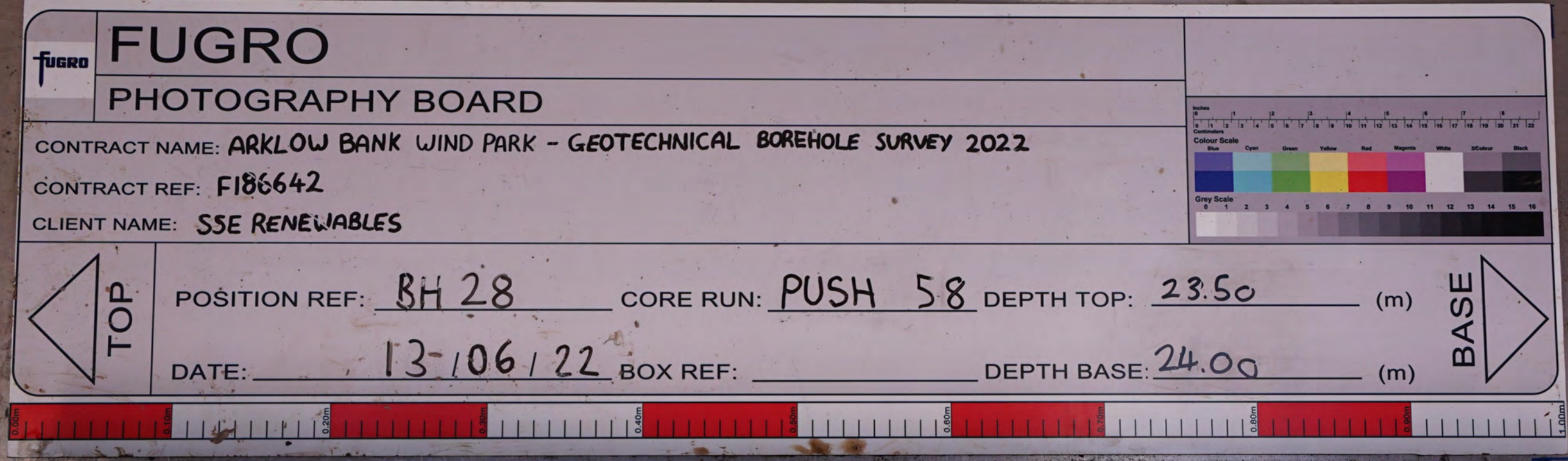
POSITION REF: BH 28 CORE RUN: PUSH 57 DEPTH TOP: 23.00 (m)

DATE: 13/06/22 BOX REF: DEPTH BASE: 23.50 (m)

BASE



NOT EXTRUDED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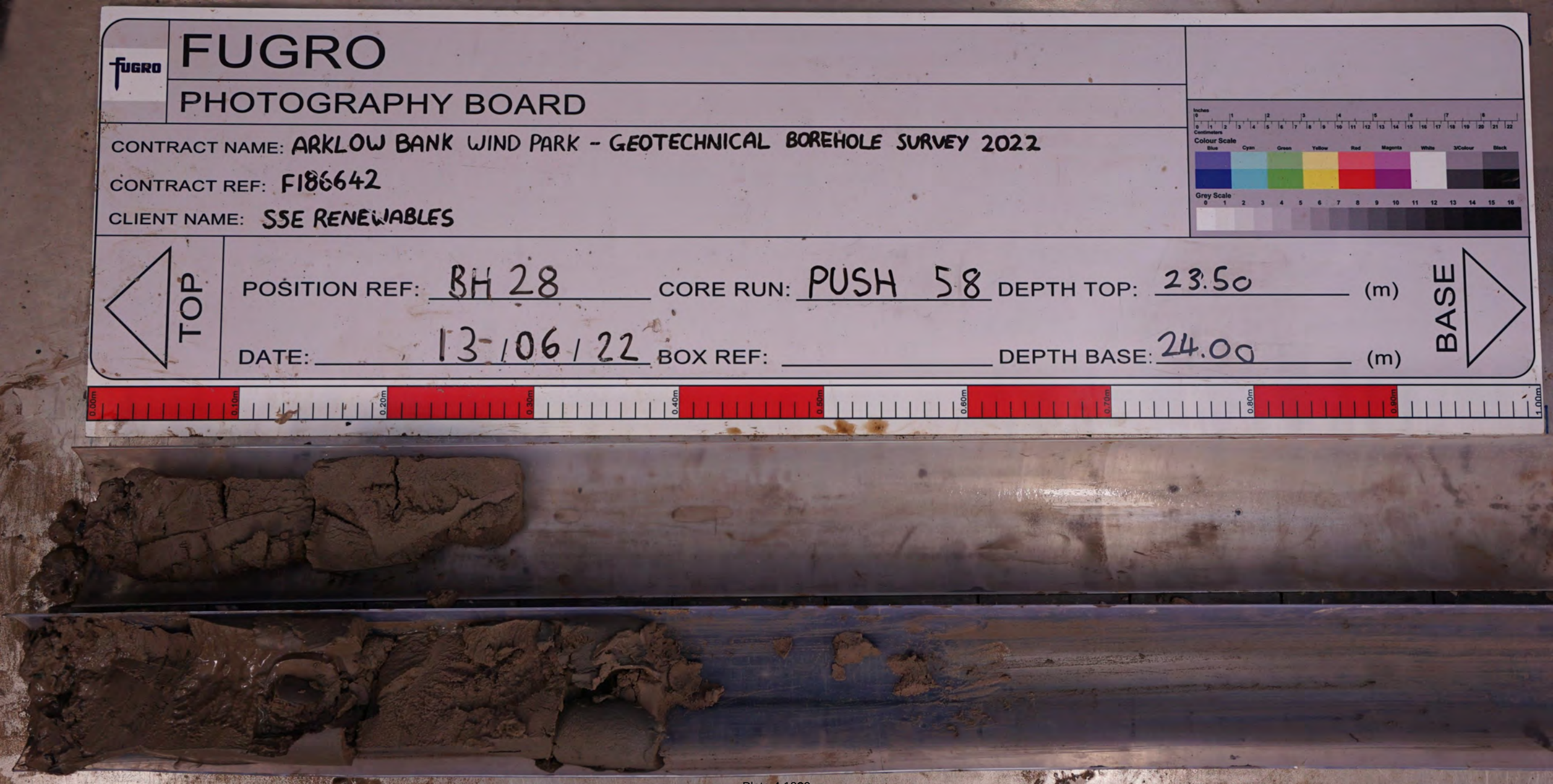
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 58
DEPTH TOP: 23.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1008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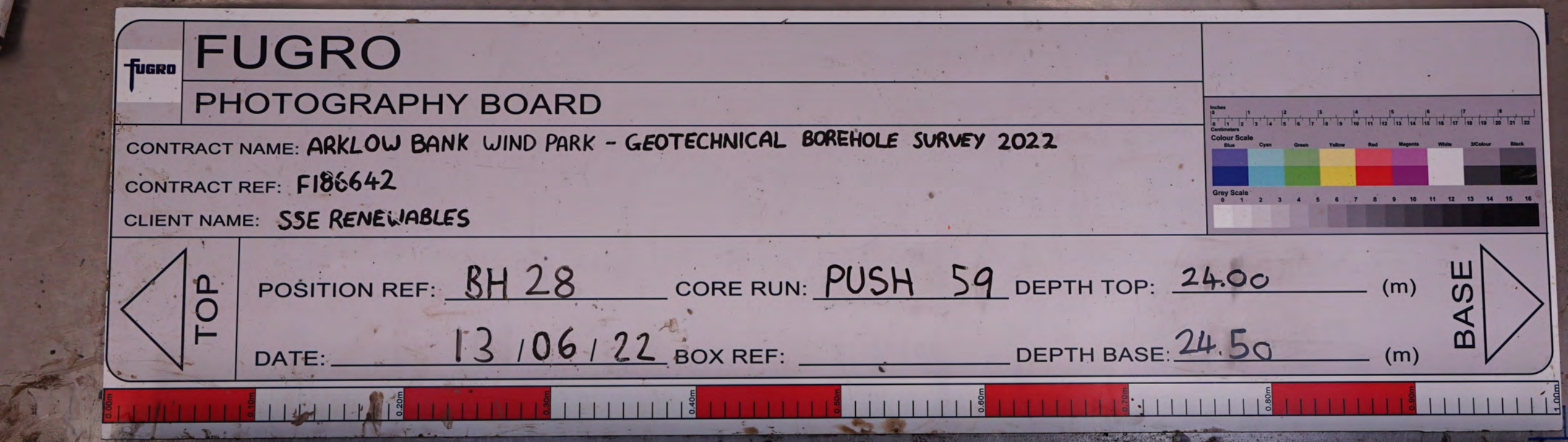
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 58
DEPTH TOP: 23.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 24.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1009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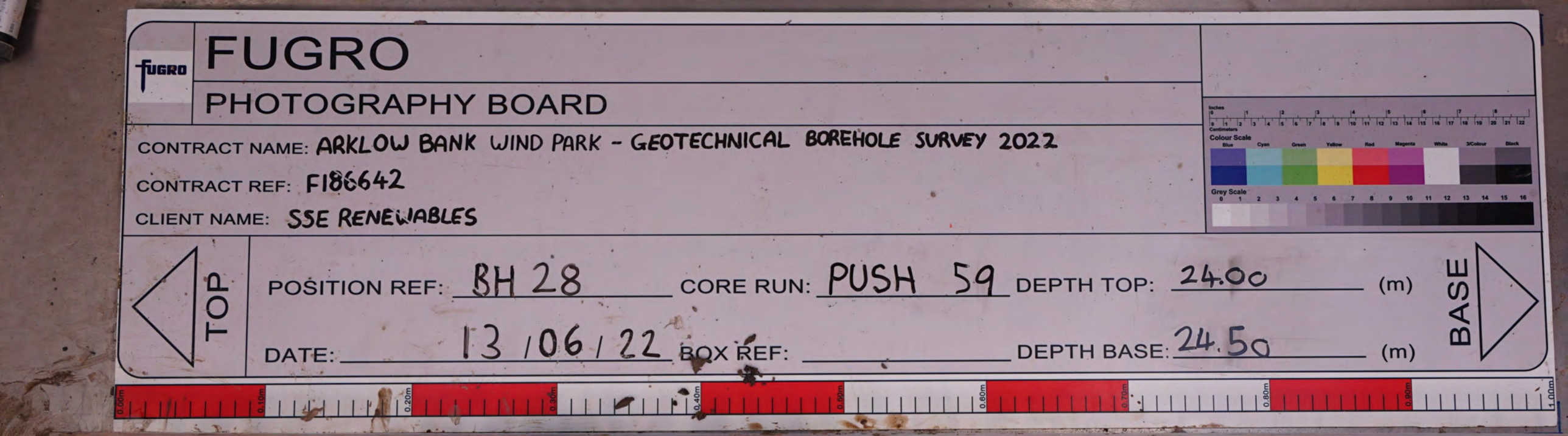
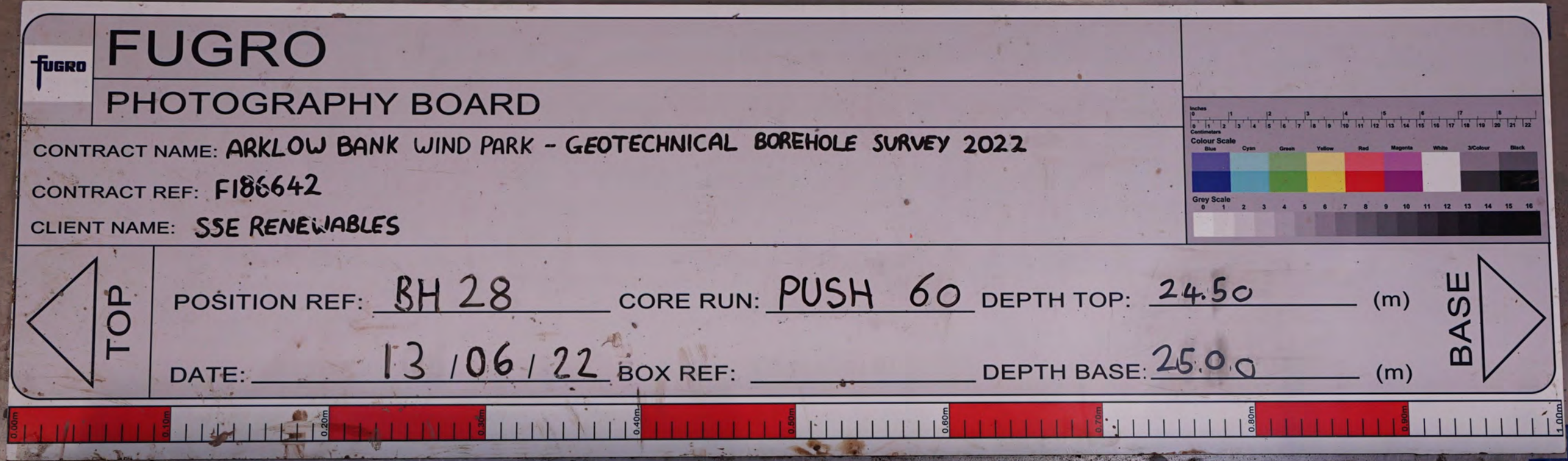
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 59
DEPTH TOP: 24.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1010


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 59
DEPTH TOP: 24.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 24.50 (m)
BASE
Colour Scale
Grey Scale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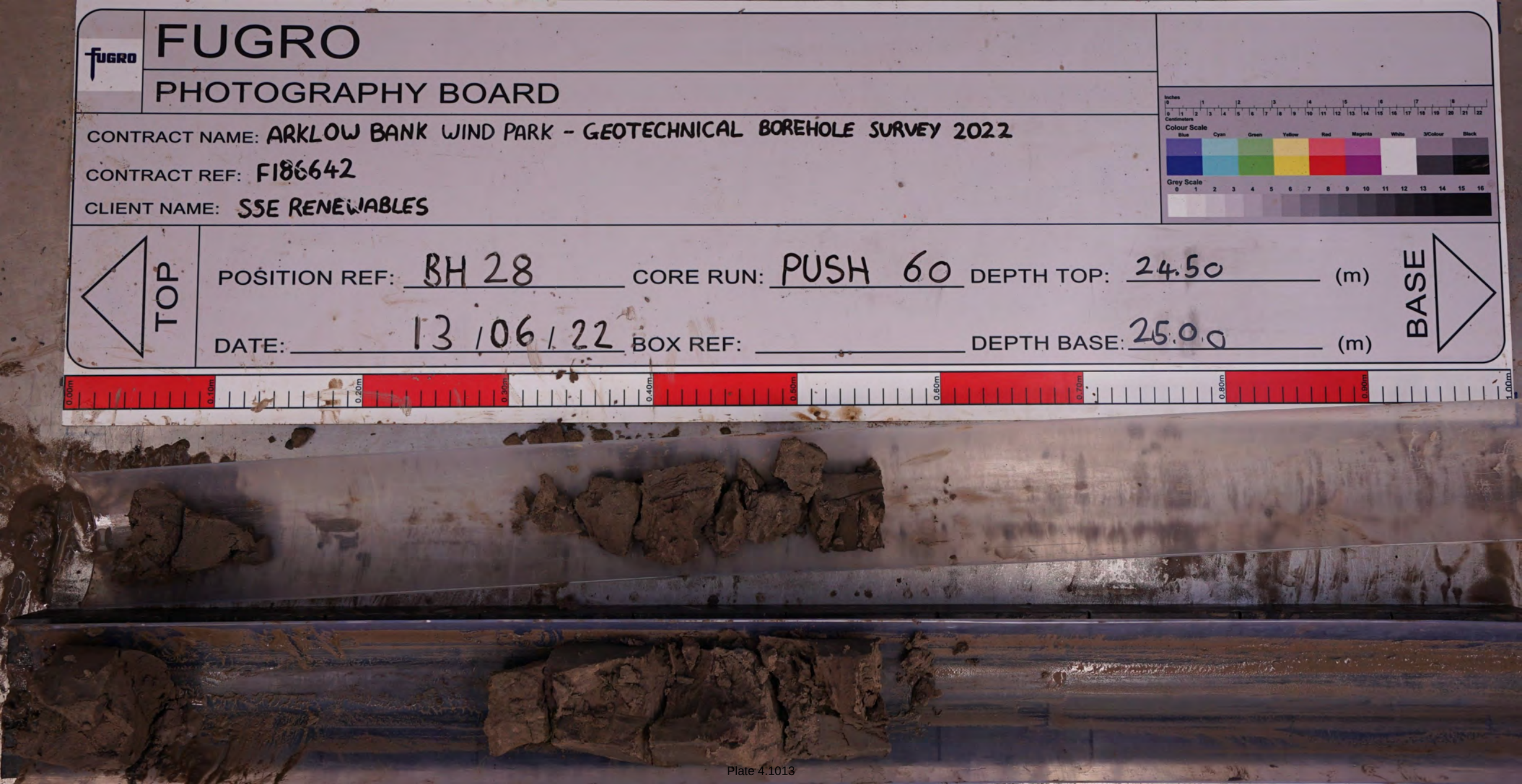
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 60
DEPTH TOP: 24.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 25.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1012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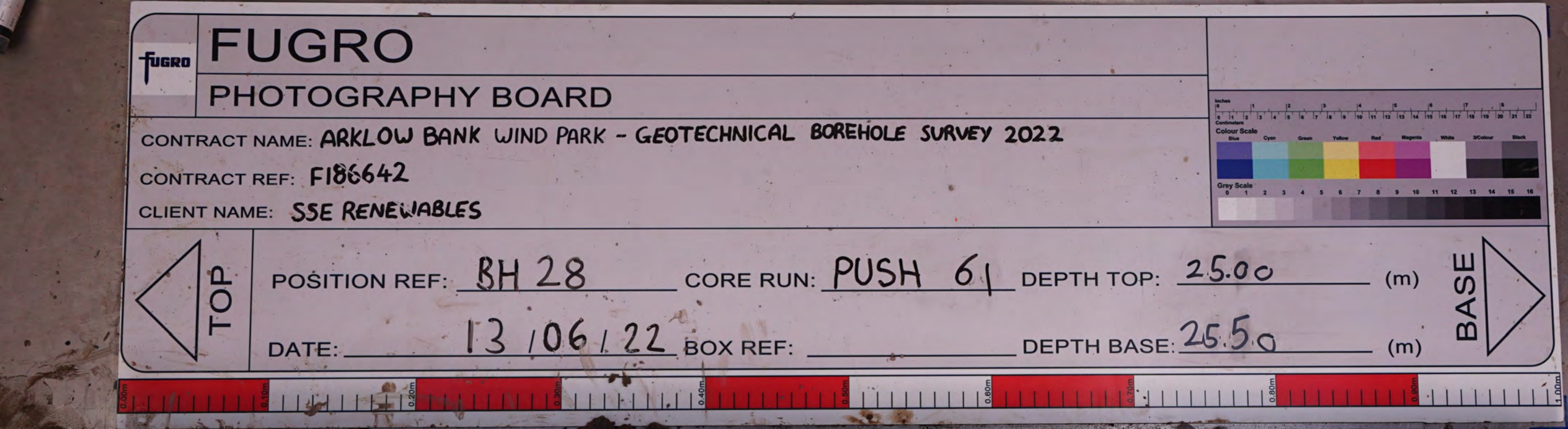
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 60
DEPTH TOP: 24.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 25.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1013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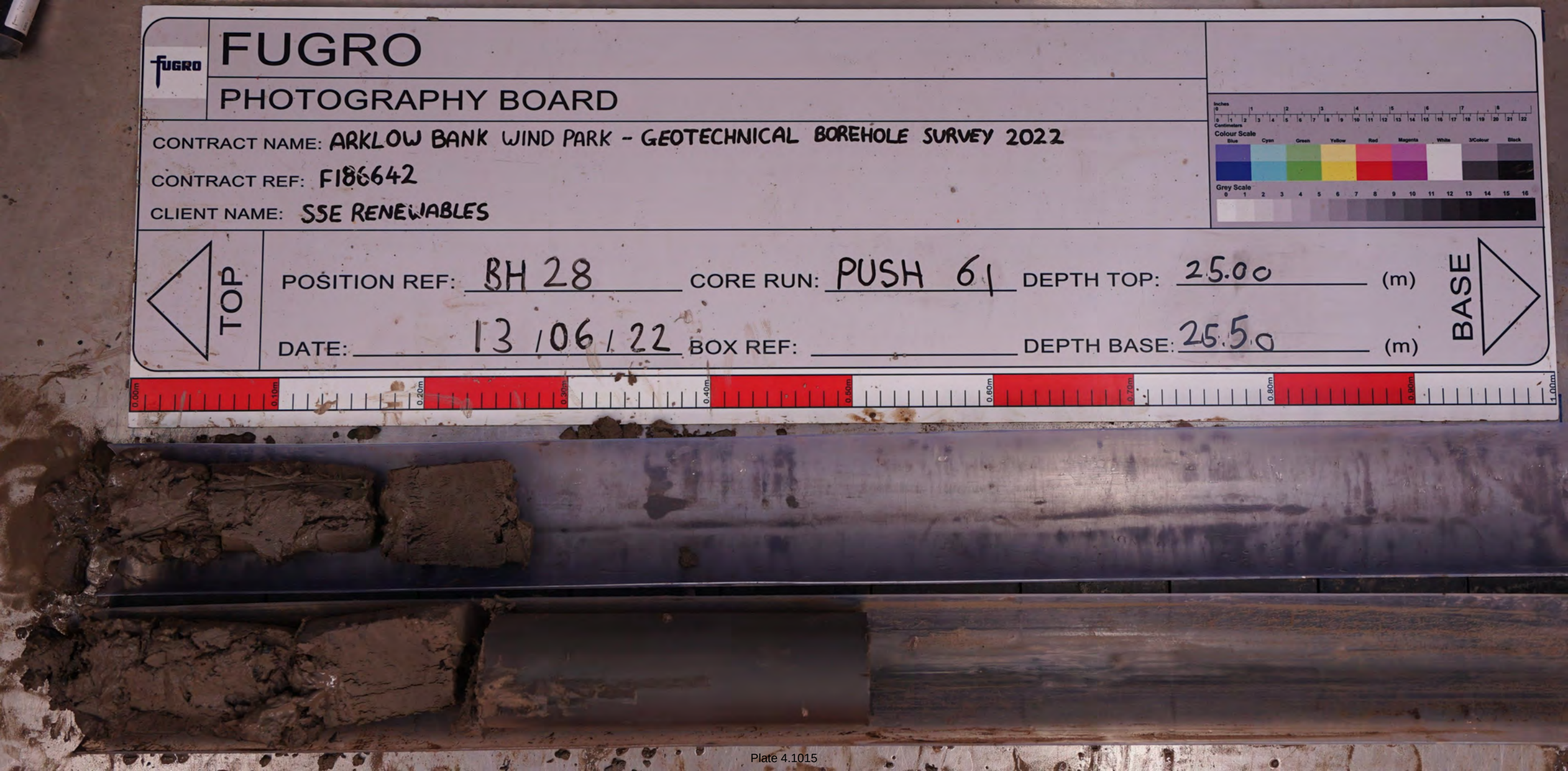
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 61
DEPTH TOP: 25.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1014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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 61
DEPTH TOP: 25.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 25.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1015

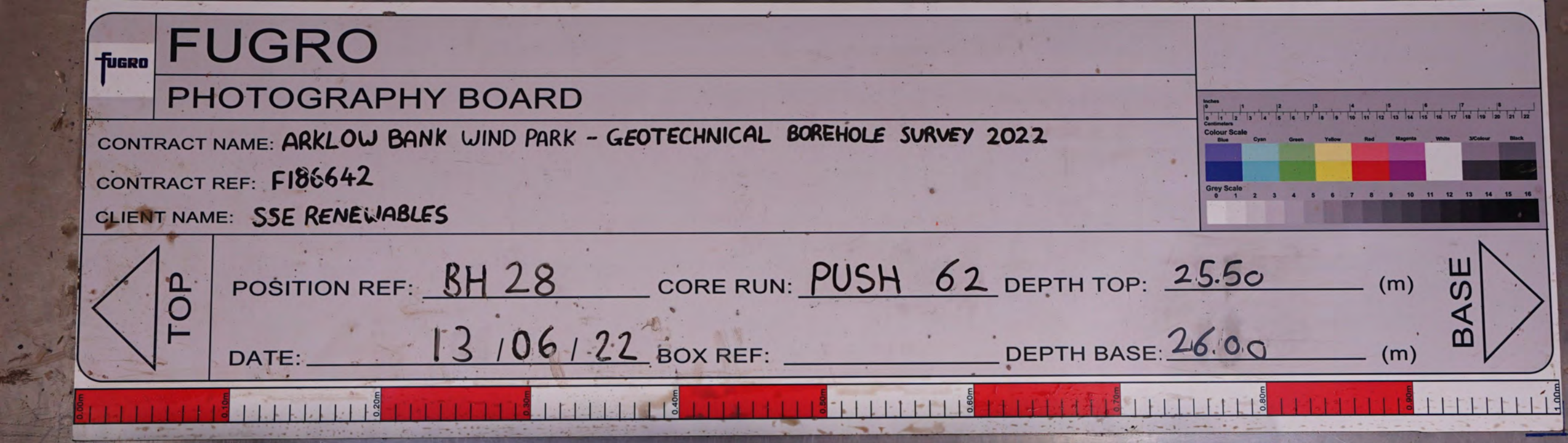

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 62
DEPTH TOP: 25.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 26.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1016

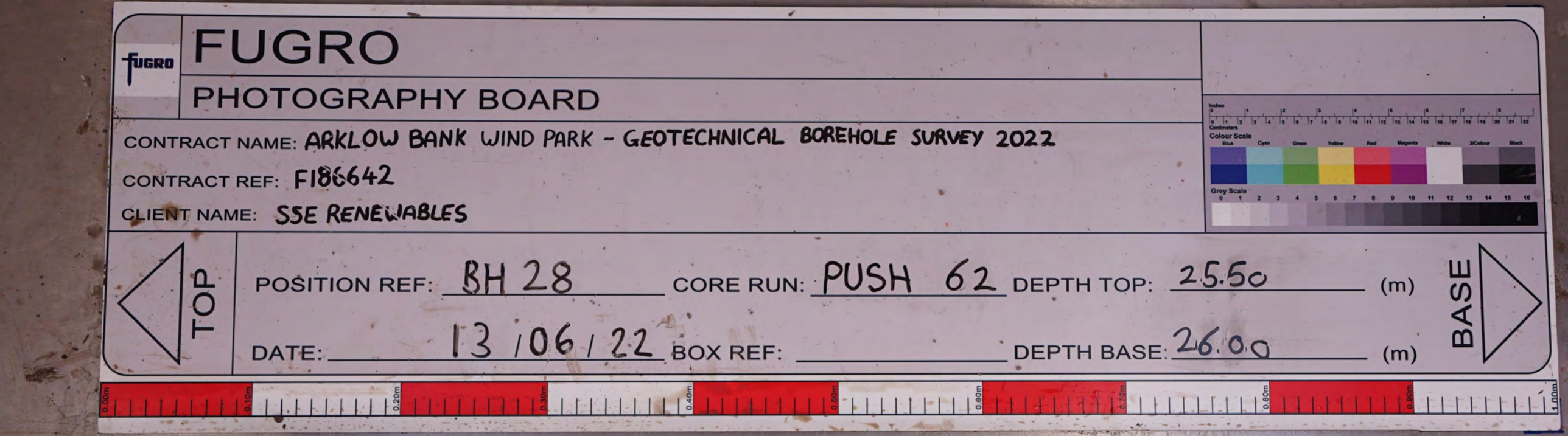
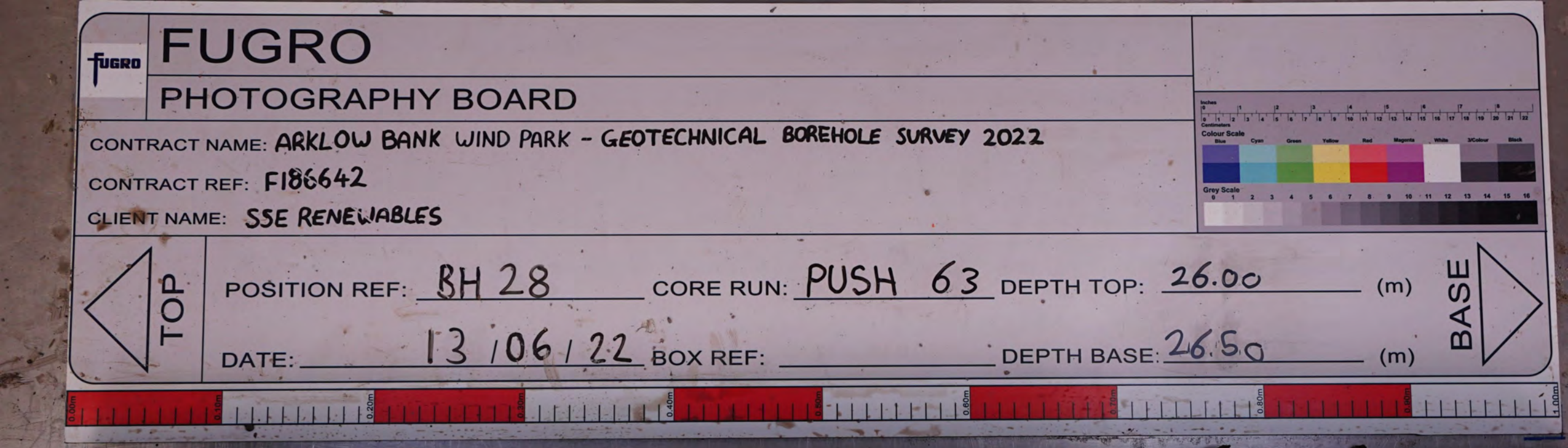

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 62
DEPTH TOP: 25.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 26.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1017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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 63
DEPTH TOP: 26.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 26.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1018

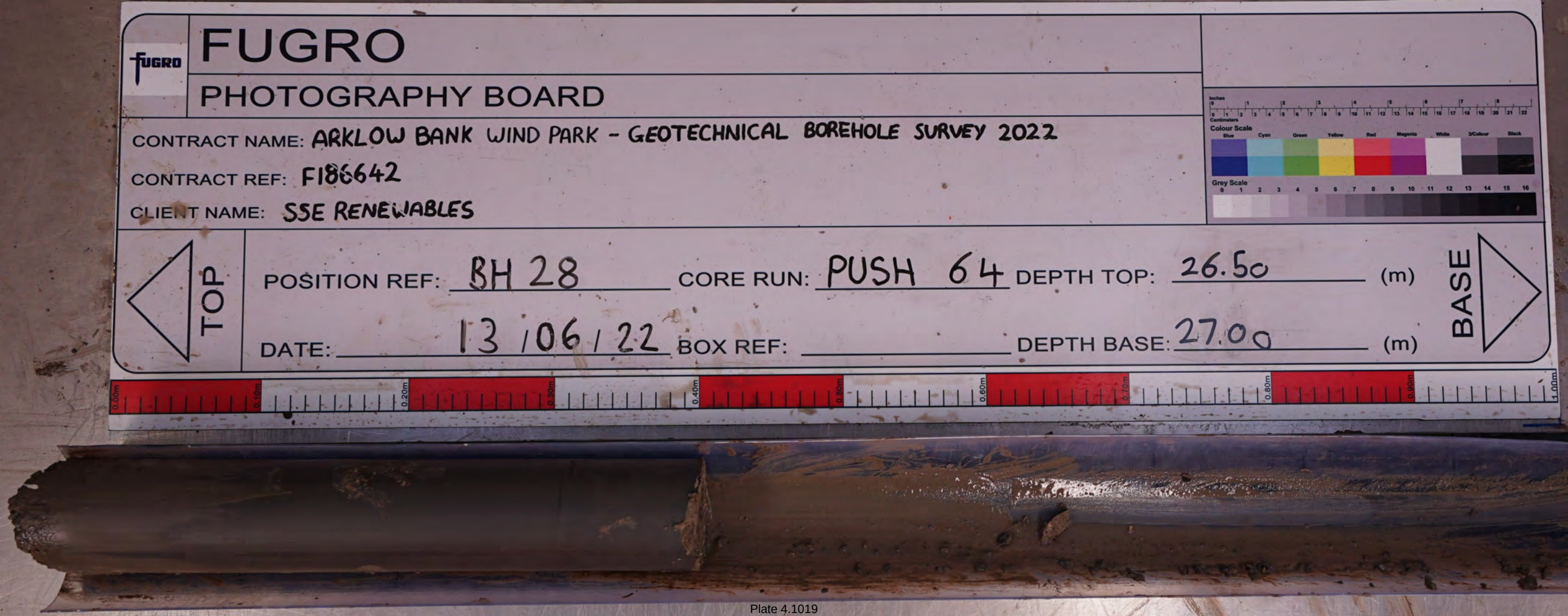
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 64
DEPTH TOP: 26.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1019


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 64
DEPTH TOP: 26.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 27.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1020

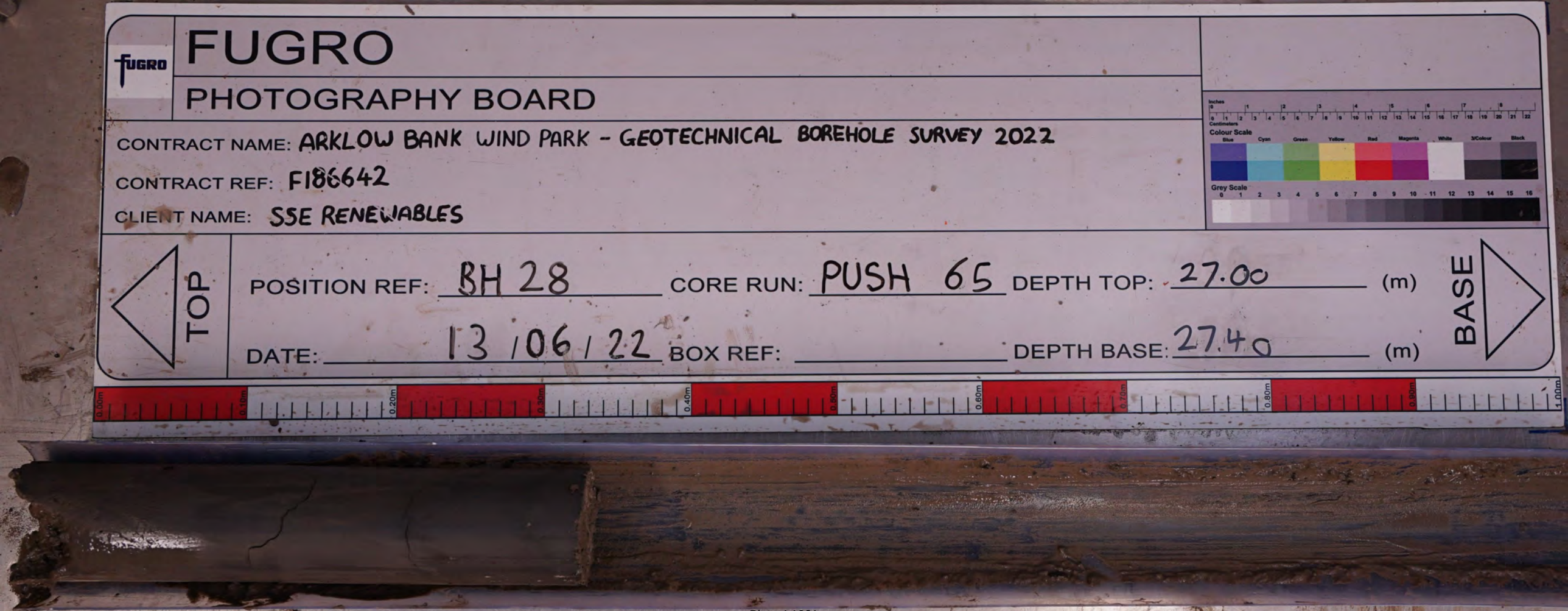
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 65
DEPTH TOP: 27.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 27.40 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1021


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 65
DEPTH TOP: 27.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 27.40 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1022

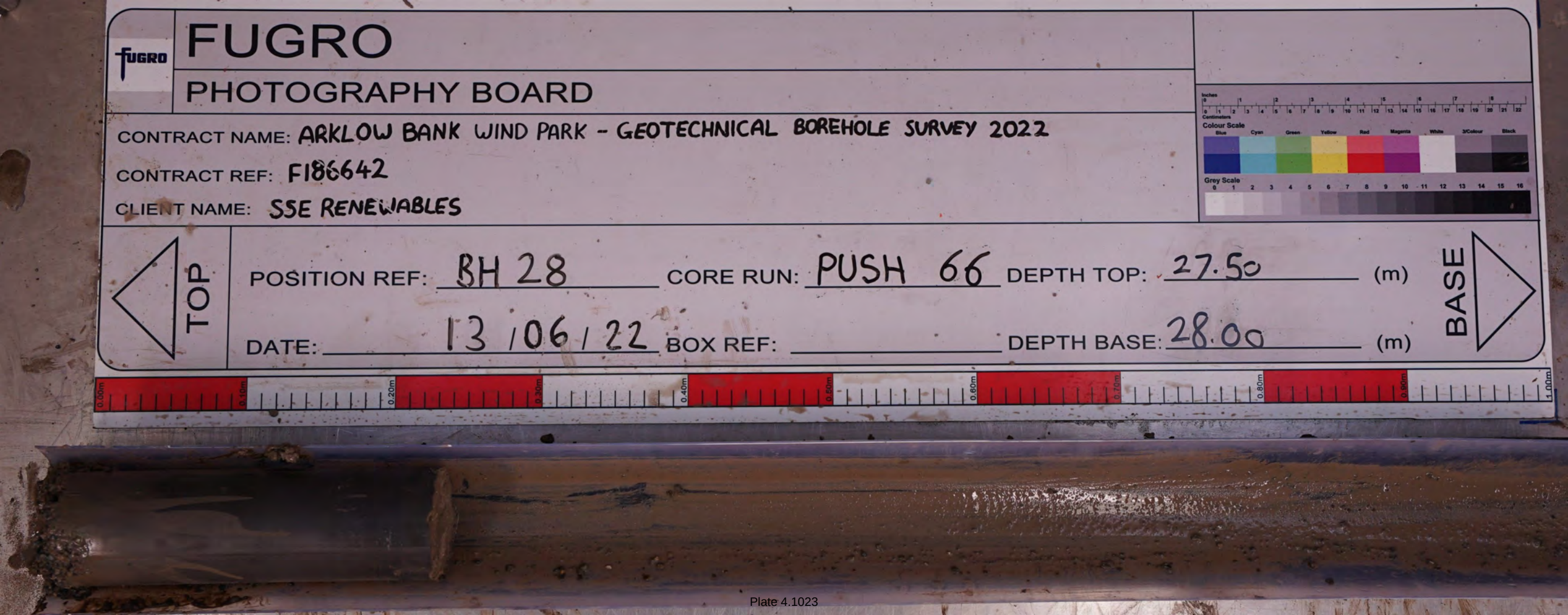
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 66
DEPTH TOP: 27.50 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 28.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1023

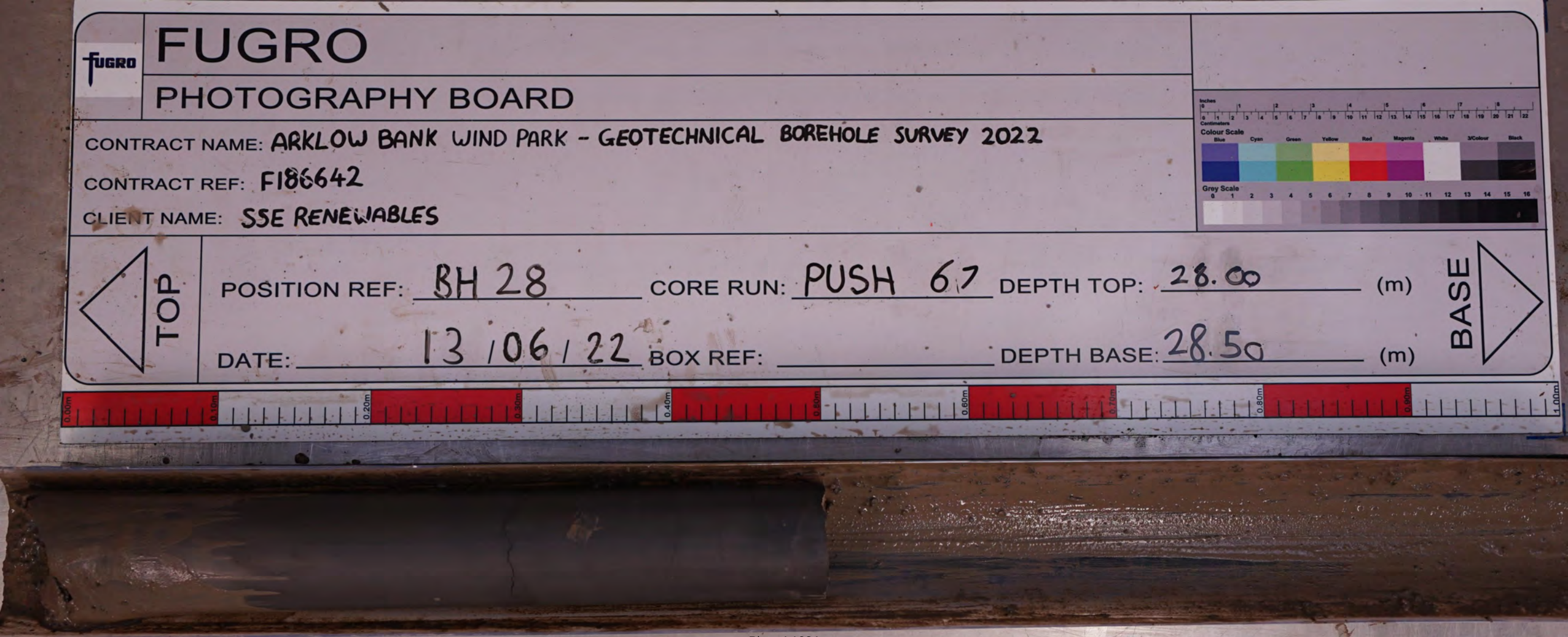
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 67
DEPTH TOP: 28.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.1024

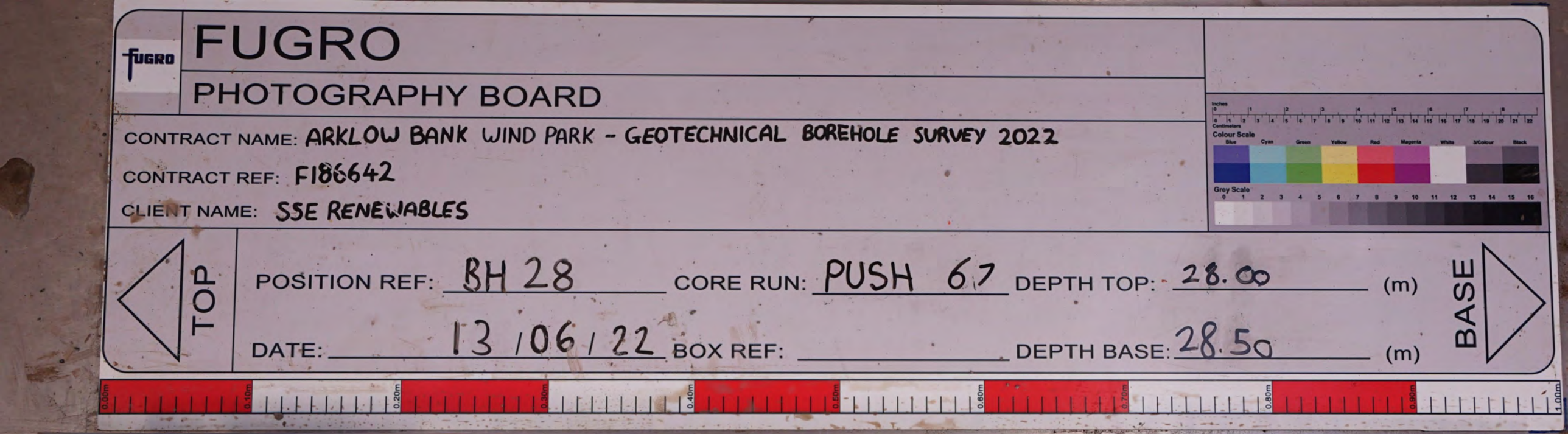
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 67
DEPTH TOP: 28.00 (m)
DATE: 13/06/22
BOX REF:
DEPTH BASE: 28.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1025

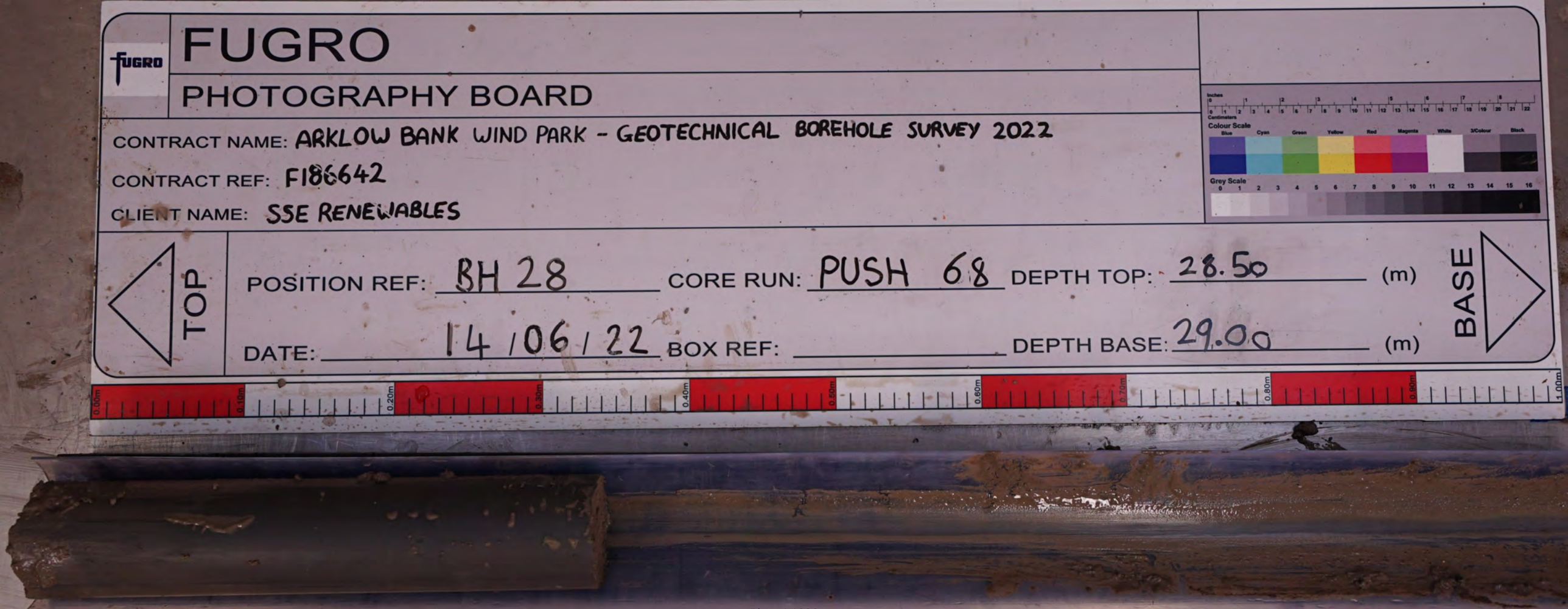
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 68
DEPTH TOP: 28.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1026

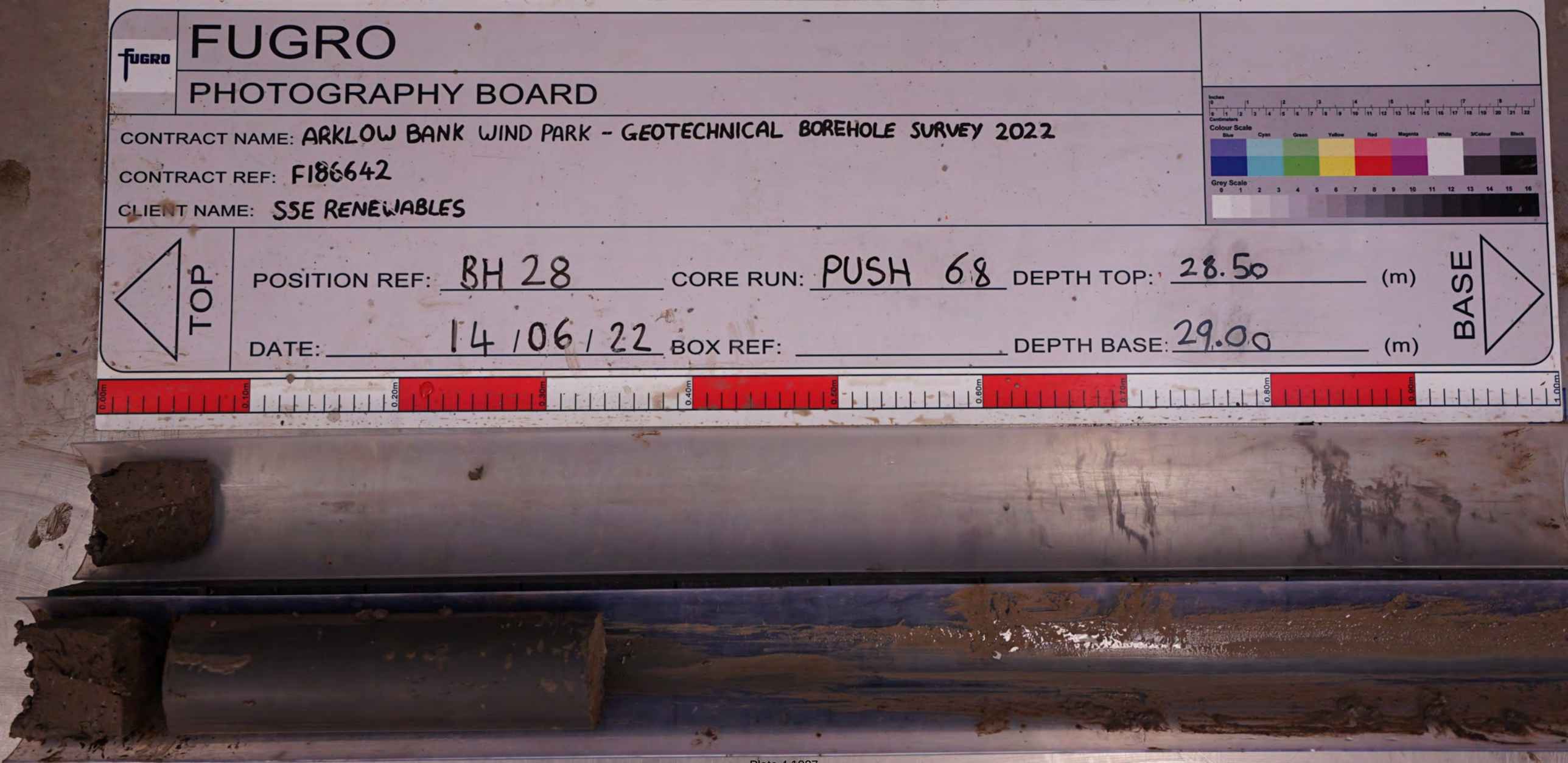
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 68
DEPTH TOP: 28.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 29.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1027

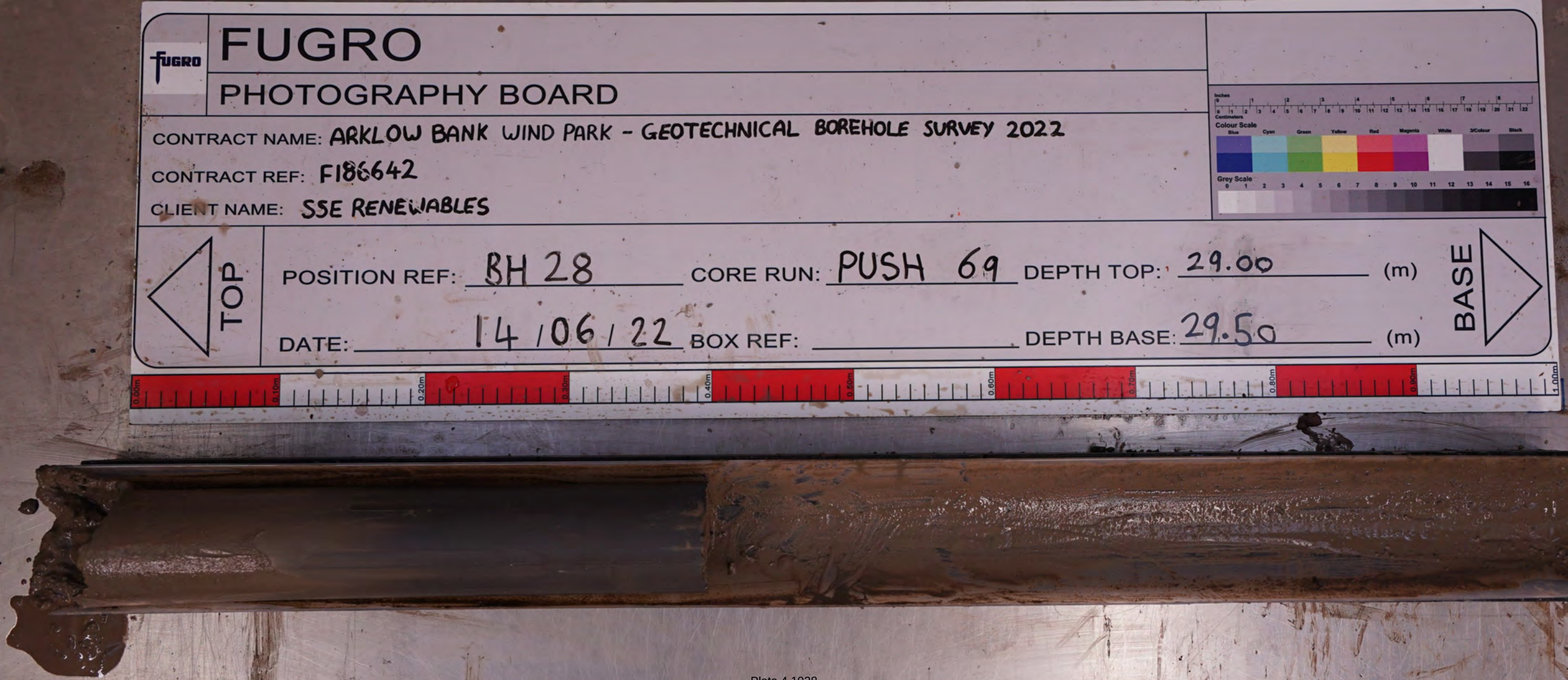
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 69
DEPTH TOP: 29.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale

Plate 4.1028

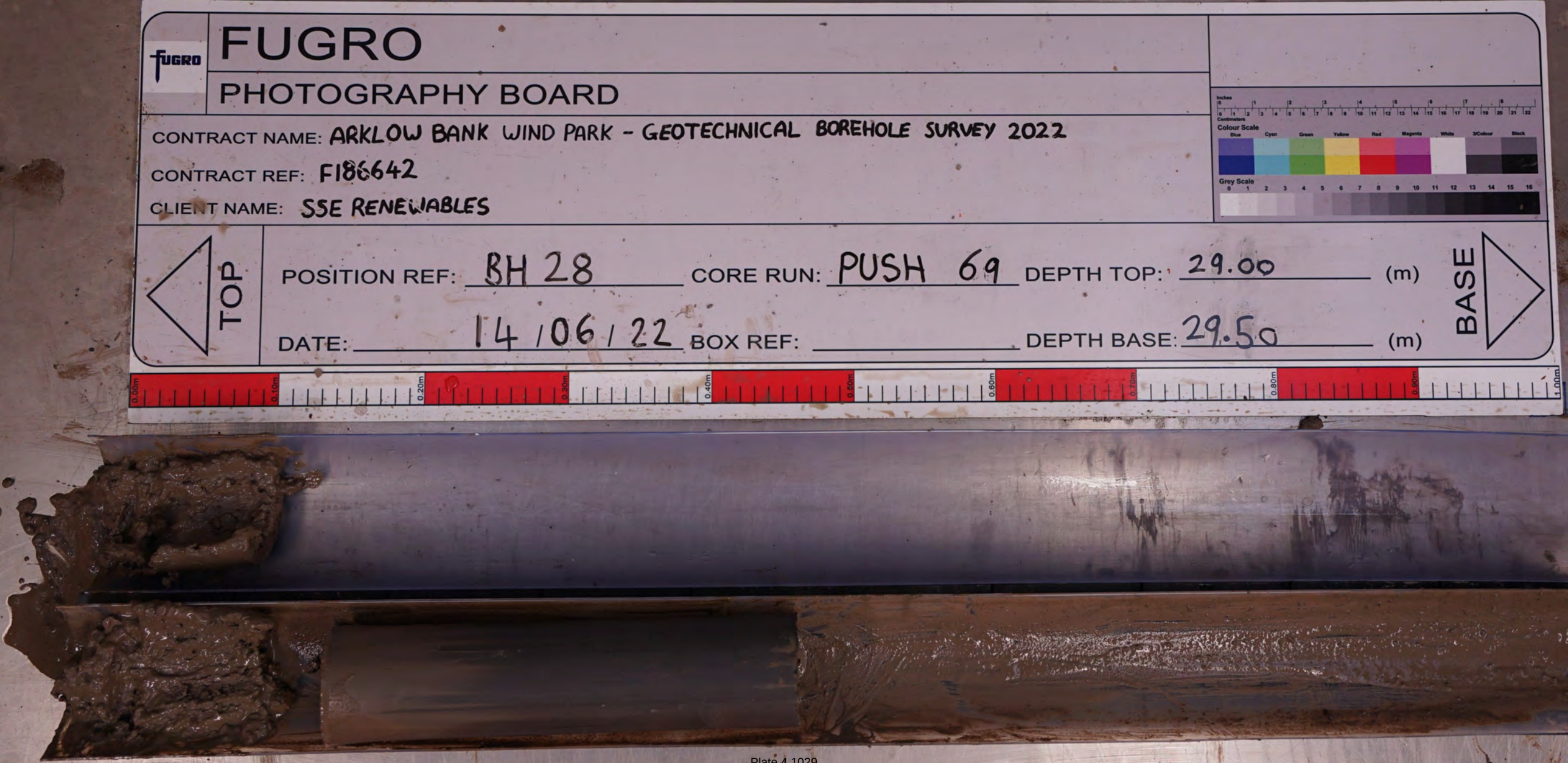
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 69
DEPTH TOP: 29.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 29.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1029

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH28

CORE RUN: CR1

DEPTH TOP: 29.50 (m)

DATE: 14/06/22

BOX REF: 1

DEPTH BASE: 3050 (m)

BASE

CR1

29.50m

30.50m



Plate 4.1030


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR1
DEPTH TOP: 29.50 (m)
DATE: 14/06/22
BOX REF: 1
DEPTH BASE: 30.50 (m)
BASE
CR1
29.50m
30.50m

Plate 4.1031

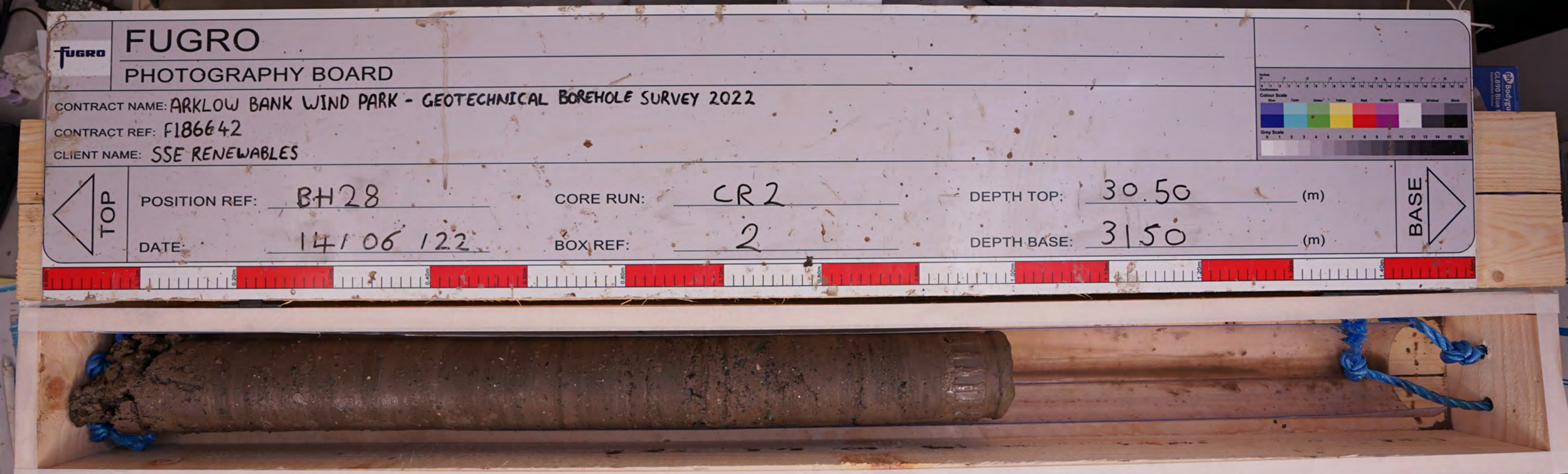
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR2
DEPTH TOP: 30.50 (m)
DATE: 14/06/22
BOX REF: 2
DEPTH BASE: 31.50 (m)
BASE

Plate 4.1032


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR2
DEPTH TOP: 30.50 (m)
DATE: 14/06/22
BOX REF: 2
DEPTH BASE: 31.50 (m)
BASE

Plate 4.1033

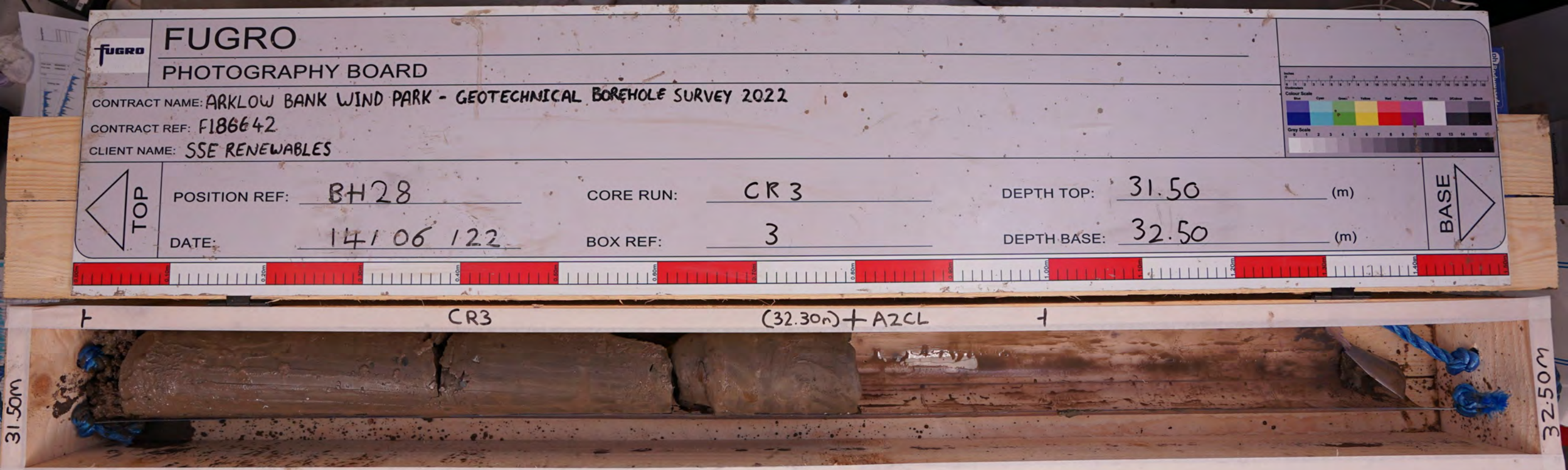
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR3
DEPTH TOP: 31.50 (m)
DATE: 14/06/22
BOX REF: 3
DEPTH BASE: 32.50 (m)
BASE
CR3
(32.30m) + A2CL
31.50m
32.50m

Plate 4.1034


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR3
DEPTH TOP: 31.50 (m)
DATE: 14/06/22
BOX REF: 3
DEPTH BASE: 32.50 (m)
BASE
CR3
(32.30m) + A2CL
31.50m
32.50m

Plate 4.1035

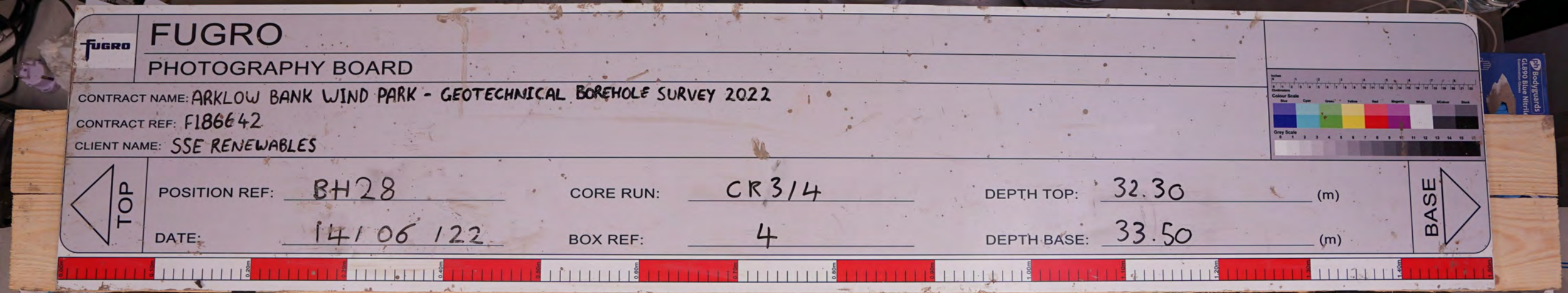
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR3/4
DEPTH TOP: 32.30 (m)
DATE: 14/06/22
BOX REF: 4
DEPTH BASE: 33.50 (m)
BASE
+(32.30m) CR3
+32.50m
CR4
(32.30m)
33.50m
0.20m of CR3 Picked up in CR4

Plate 4.1036


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR3/4
DEPTH TOP: 32.30 (m)
DATE: 14/06/22
BOX REF: 4
DEPTH BASE: 33.50 (m)
BASE
CR4
(32.30m)
33.50m
0.20m of CR3 Picked up in CR4

Plate 4.1037

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 70 DEPTH TOP: 33.50 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 34.00 (m)

BASE



Plate 4.1038

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 70 DEPTH TOP: 33.50 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 34.00 (m)

BASE

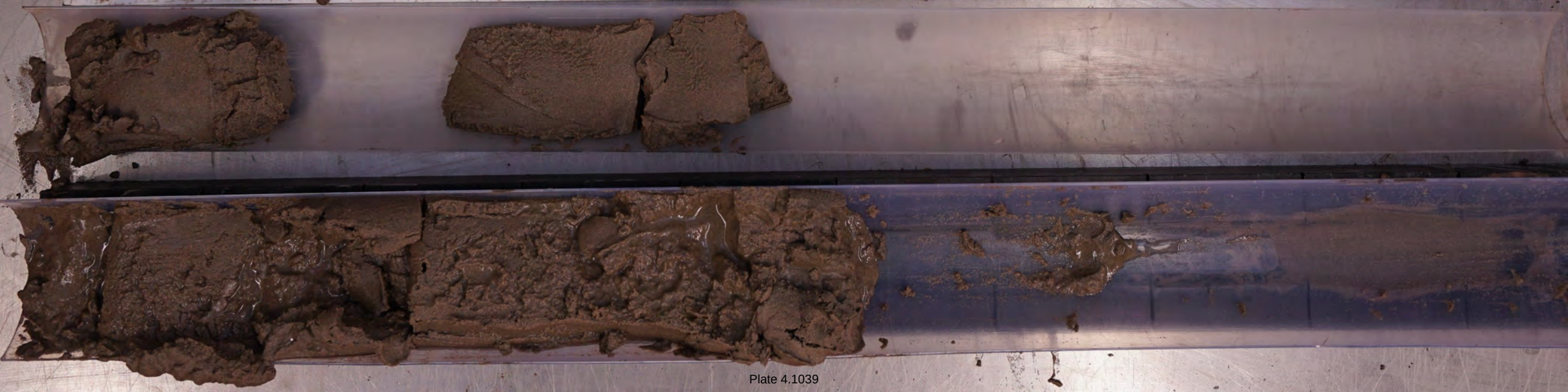

Plate 4.1039

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: CR5 DEPTH TOP: 34.00 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 34.50 (m)

BASE

NO RECOVERY

Plate 4.1040

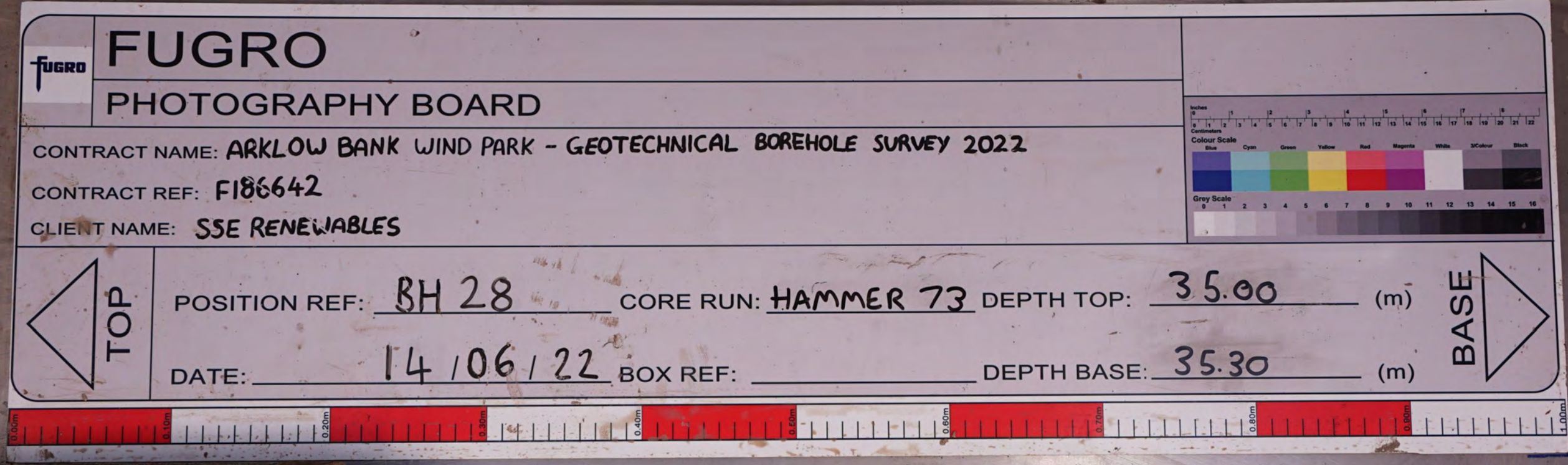
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: HAMMER 73
DEPTH TOP: 35.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 35.30 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1041

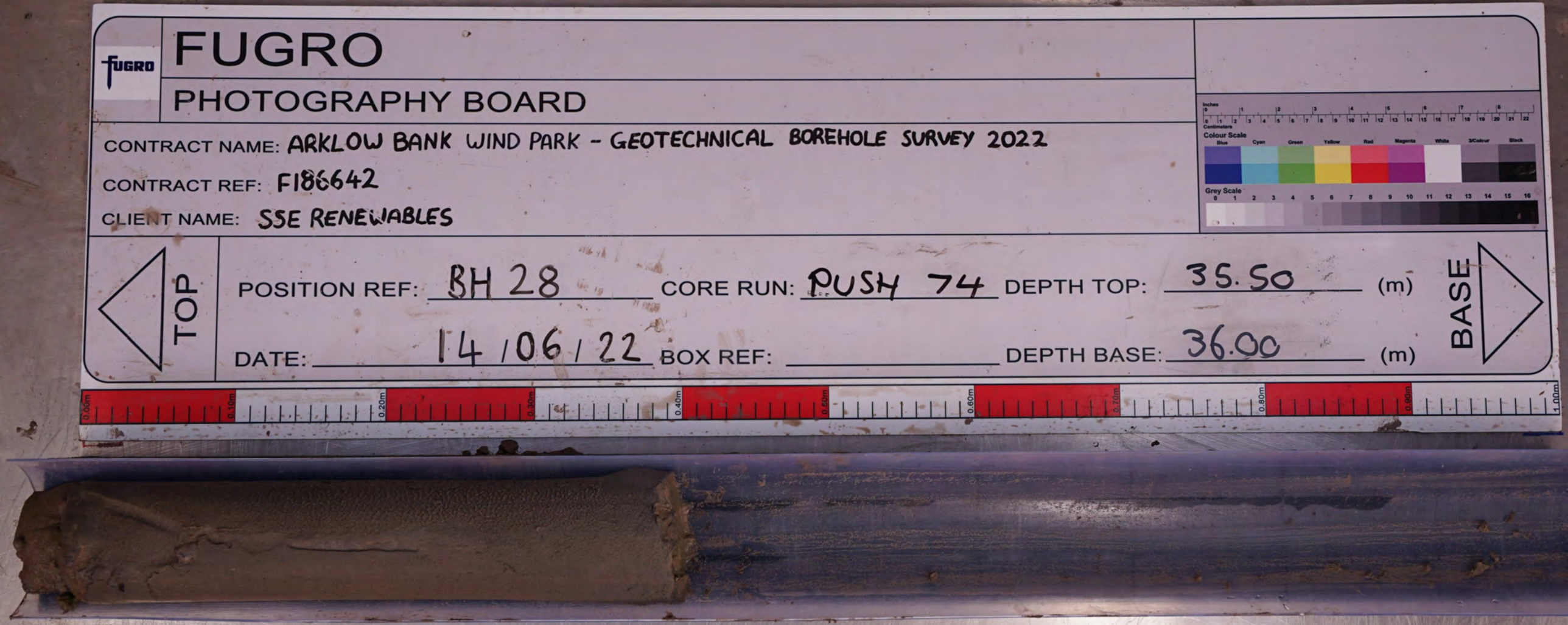
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 74
DEPTH TOP: 35.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 36.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1042


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 74
DEPTH TOP: 35.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 36.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1043

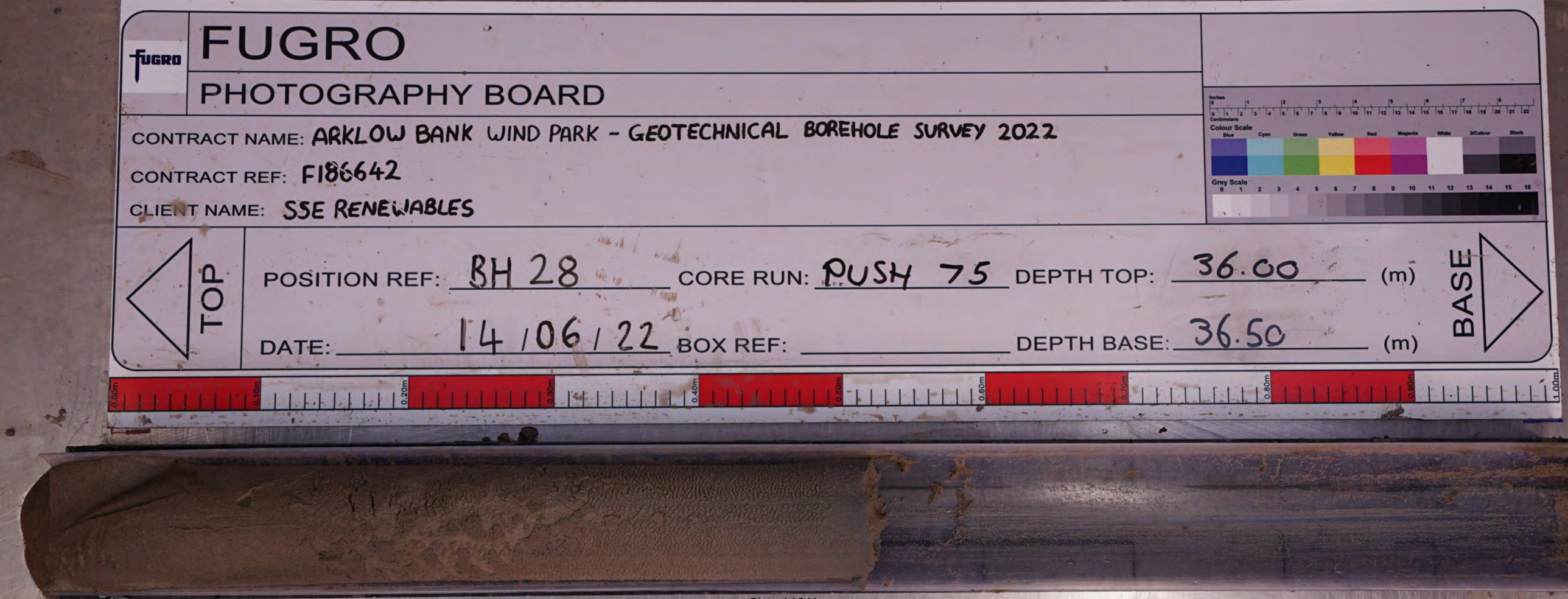
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 75
DEPTH TOP: 36.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 36.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1044

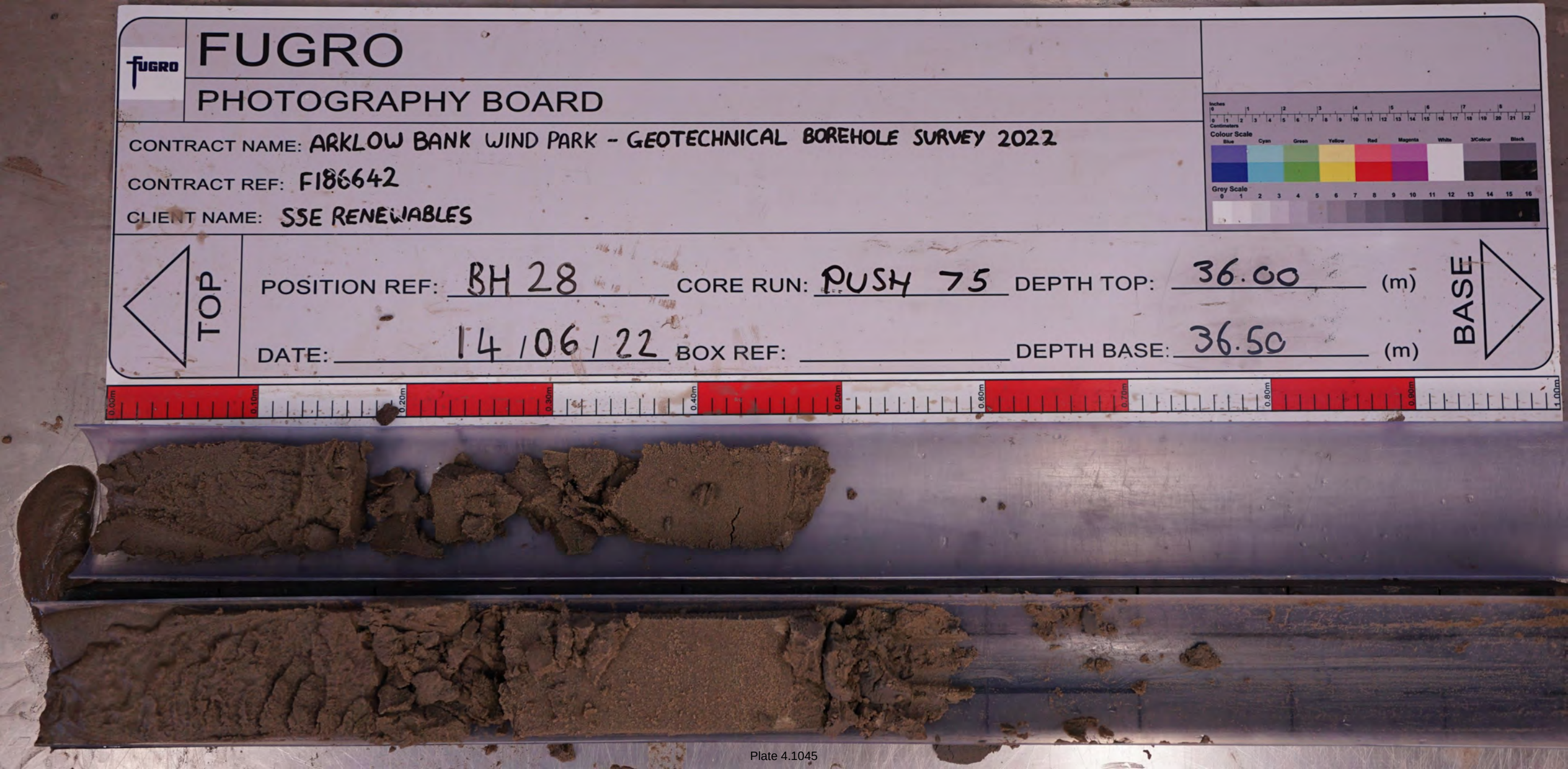
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 75
DEPTH TOP: 36.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 36.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1045

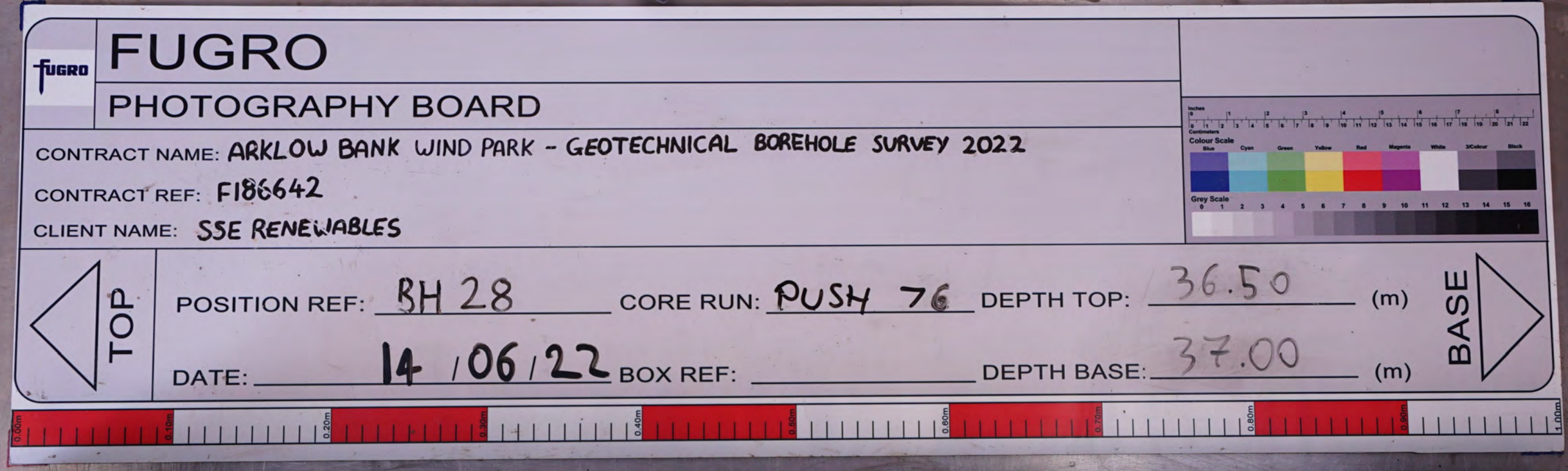
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 76
DEPTH TOP: 36.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 37.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1046


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 76
DEPTH TOP: 36.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 37.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1047

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PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 78 DEPTH TOP: 37.00 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 37.50 (m)

BASE

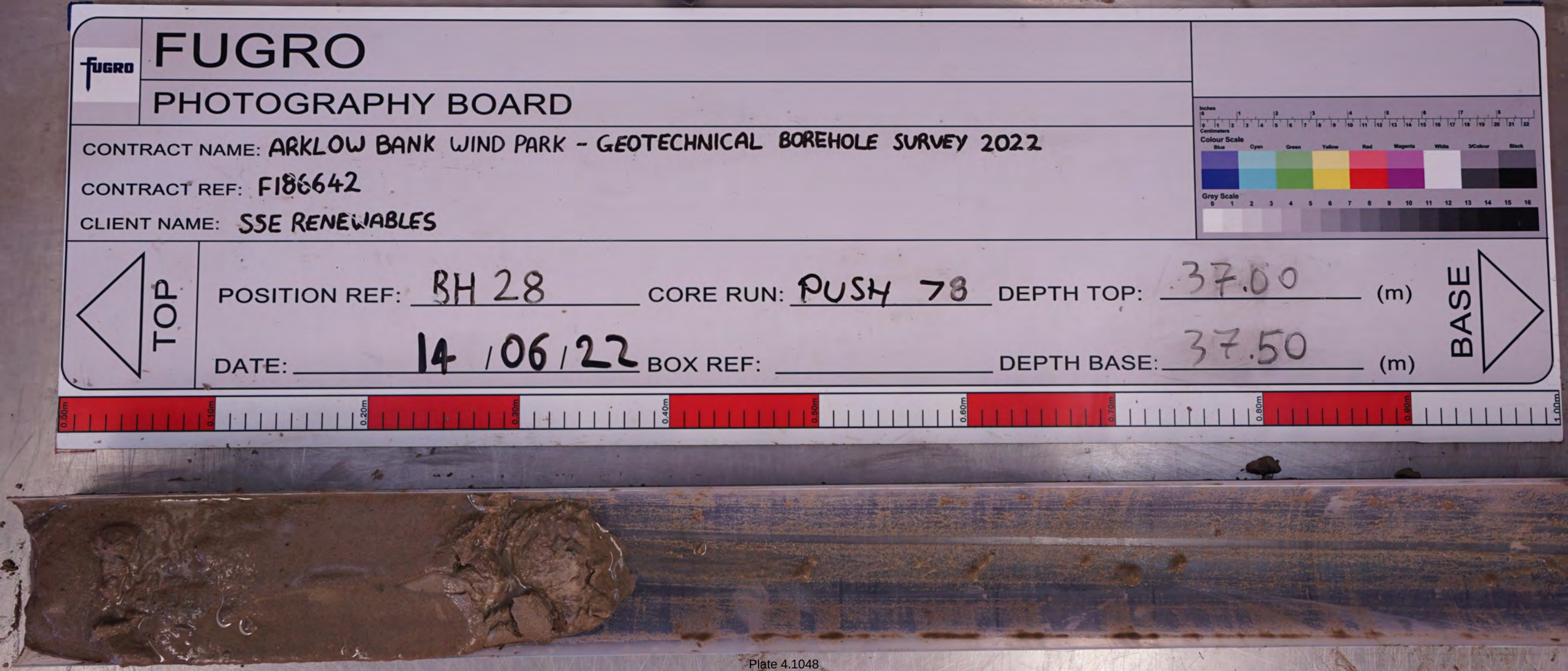


Plate 4.1048


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 78
DEPTH TOP: 37.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 37.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1049

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 79 DEPTH TOP: 37.50 (m)

DATE: 14/06/22 BOX REF: _____ DEPTH BASE: 38.00 (m)

BASE



Plate 4.1050


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 79
DEPTH TOP: 37.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 38.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1051

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 80 DEPTH TOP: 38.00 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 38.50 (m)

BASE



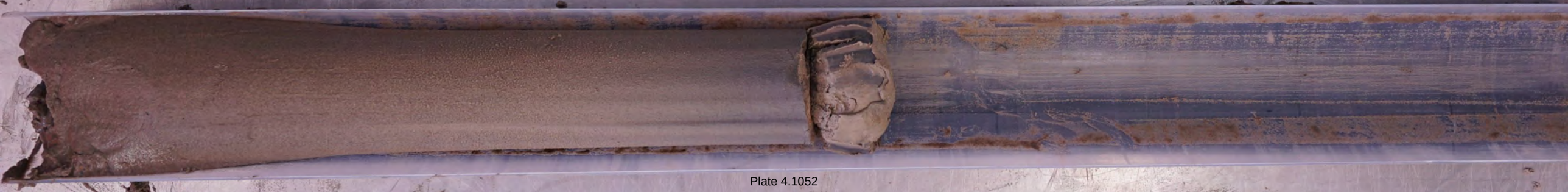


Plate 4.1052

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 80 DEPTH TOP: 38.00 (m)

DATE: 14/06/22 BOX REF: DEPTH BASE: 38.50 (m)

BASE

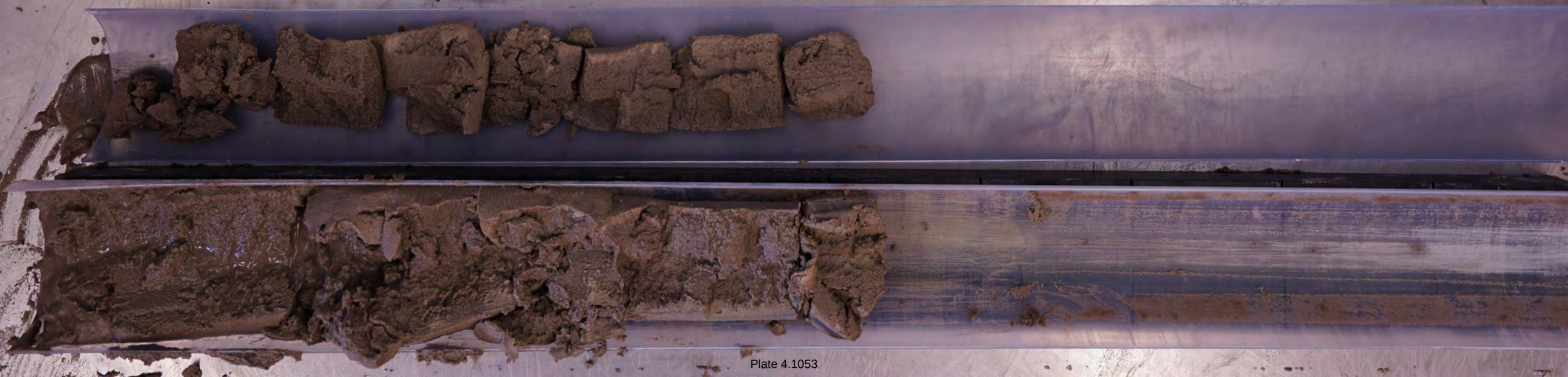


Plate 4.1053

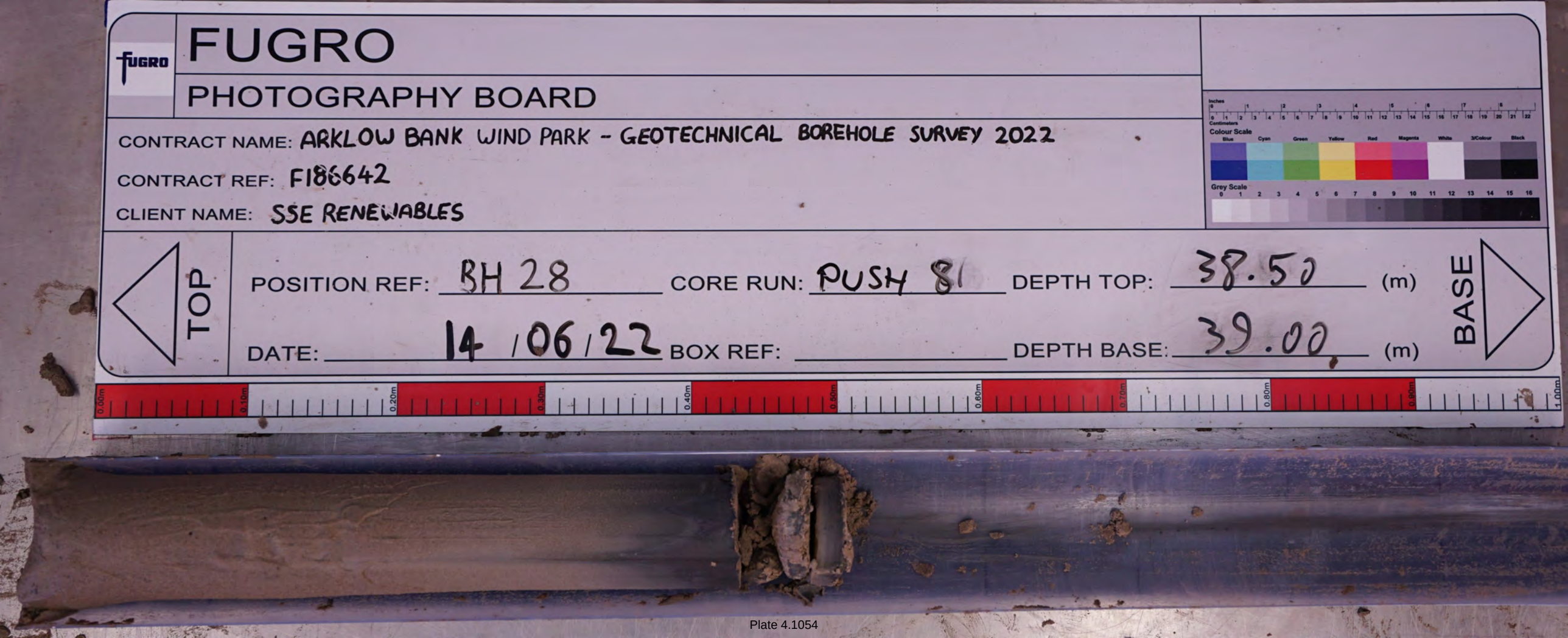

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 81
DEPTH TOP: 38.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 39.00 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1054


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 81
DEPTH TOP: 38.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 39.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1055

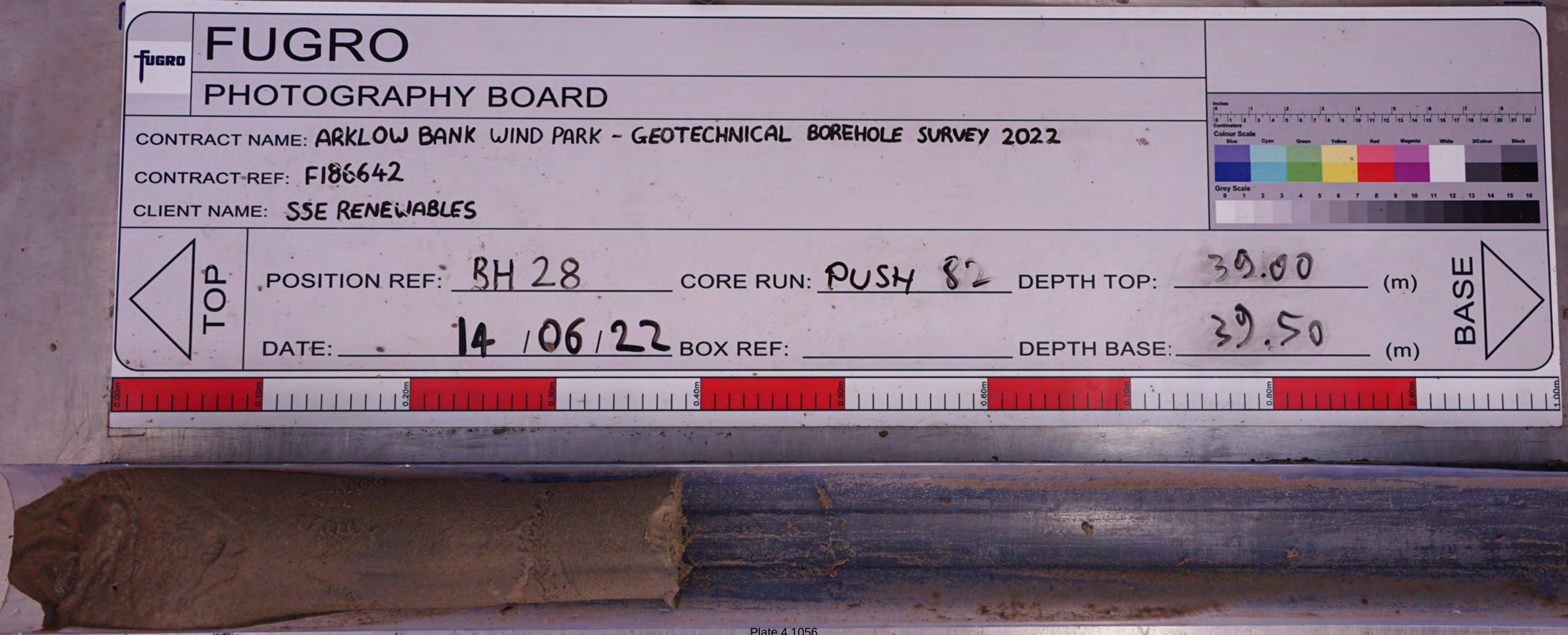
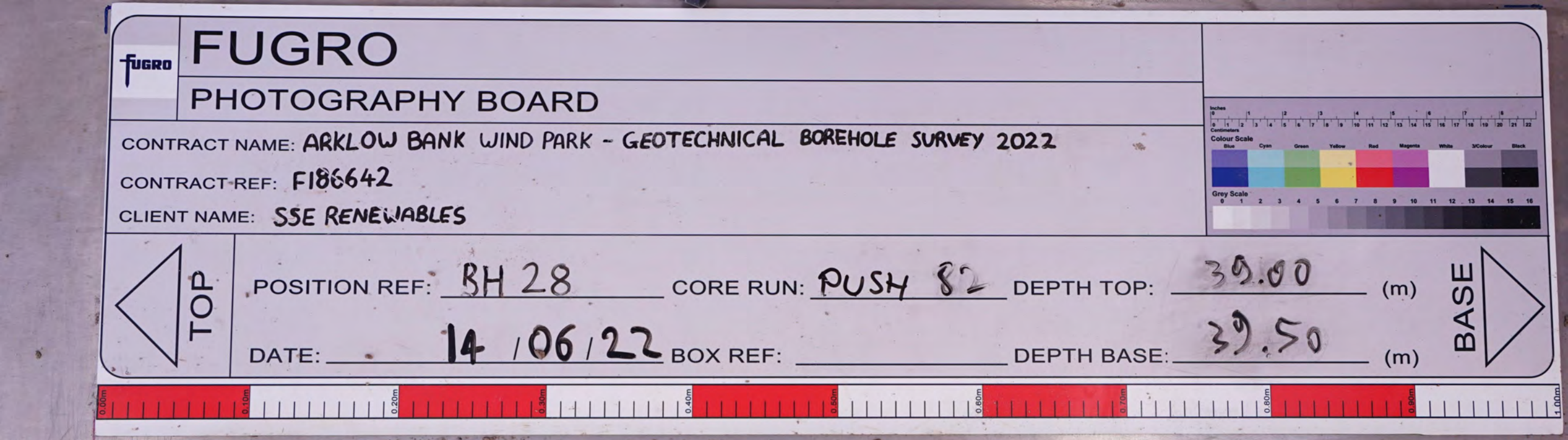

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 82
DEPTH TOP: 39.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 39.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1056


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 82
DEPTH TOP: 39.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 39.50 (m)
BASE
Colour Scale
Grey Scale

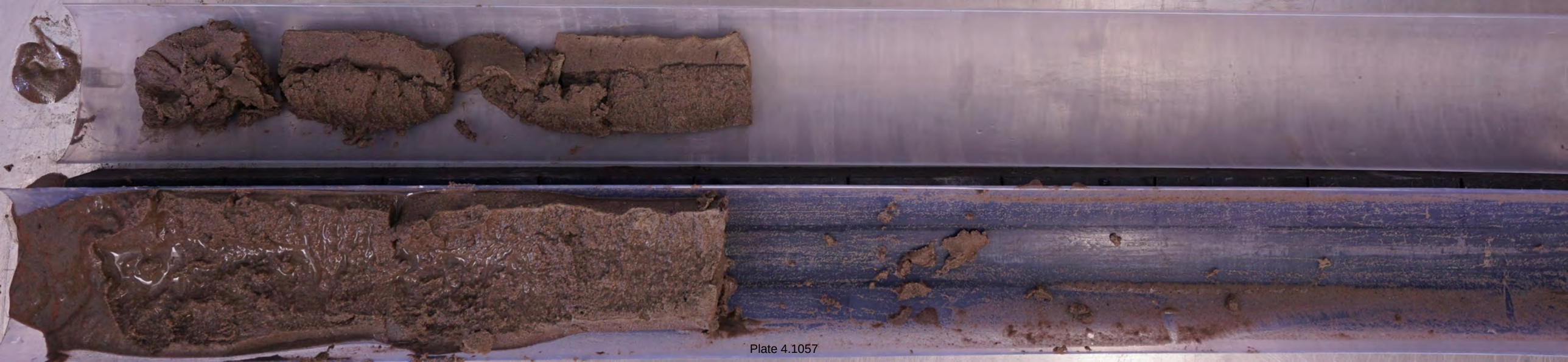


Plate 4.1057

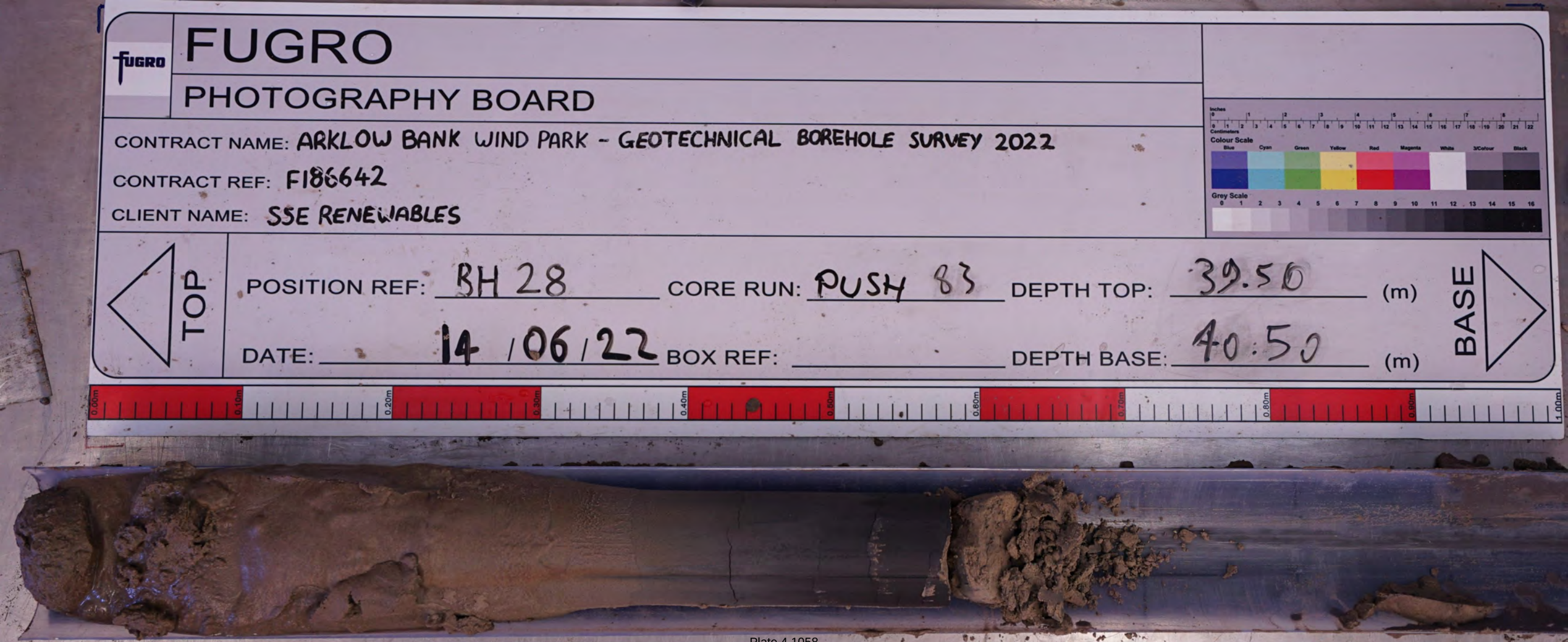

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 83
DEPTH TOP: 39.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 40.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1058


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 83
DEPTH TOP: 39.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 40.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1059

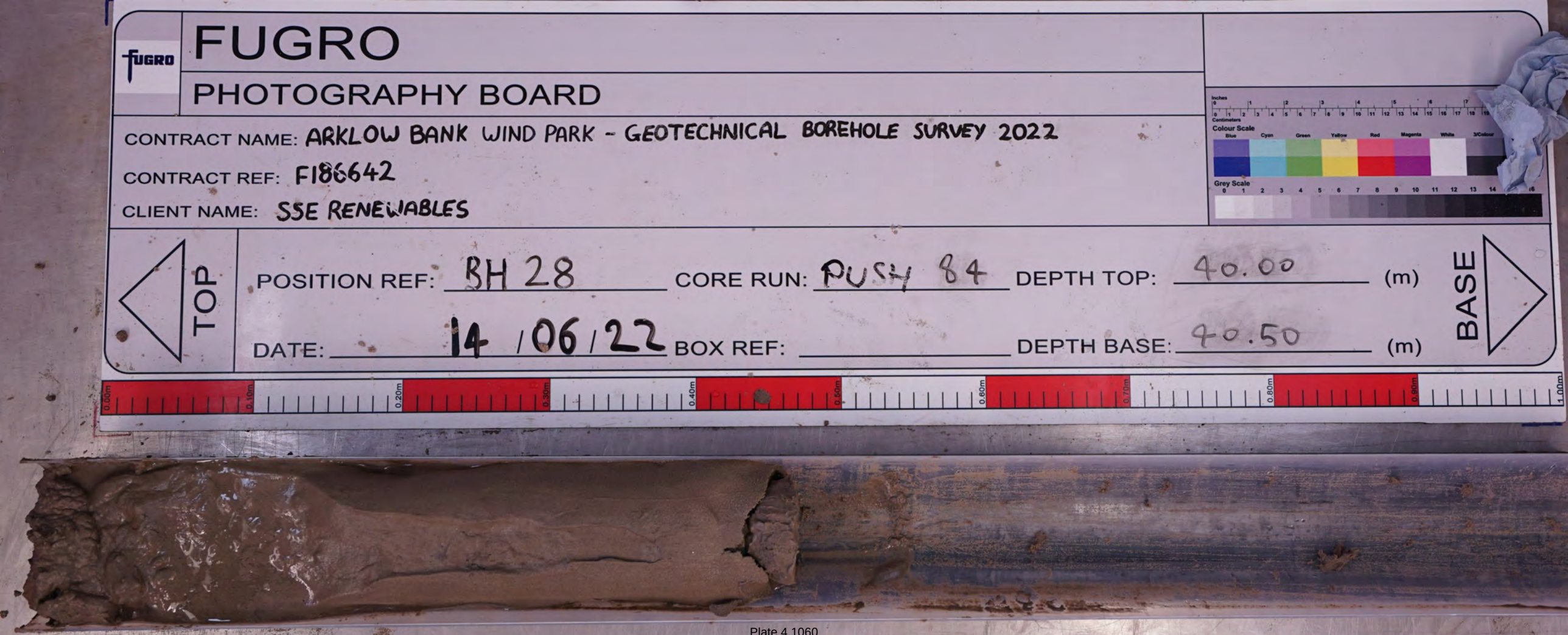

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 84
DEPTH TOP: 40.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 40.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1060

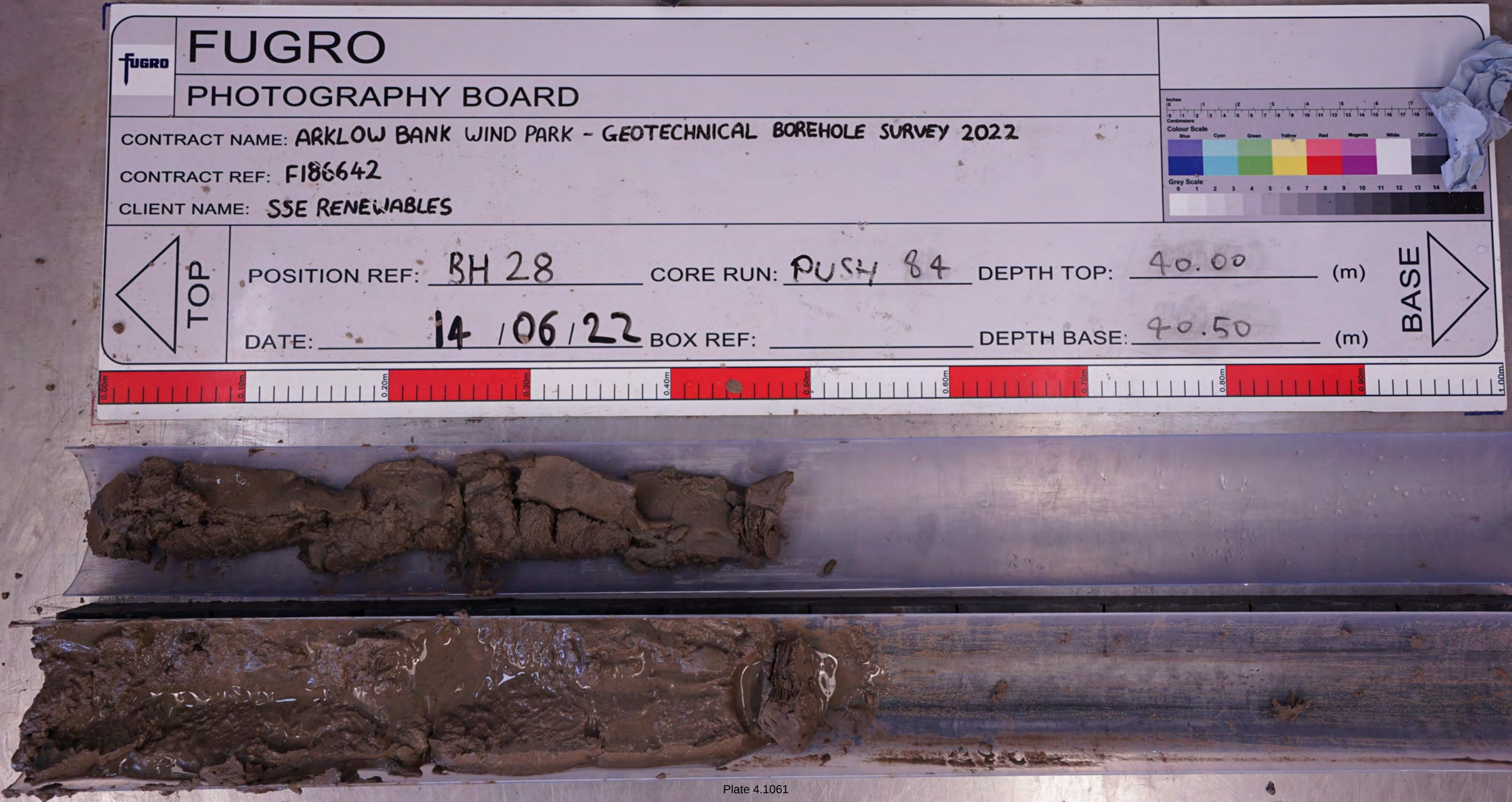

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 84
DEPTH TOP: 40.00 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 40.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1061

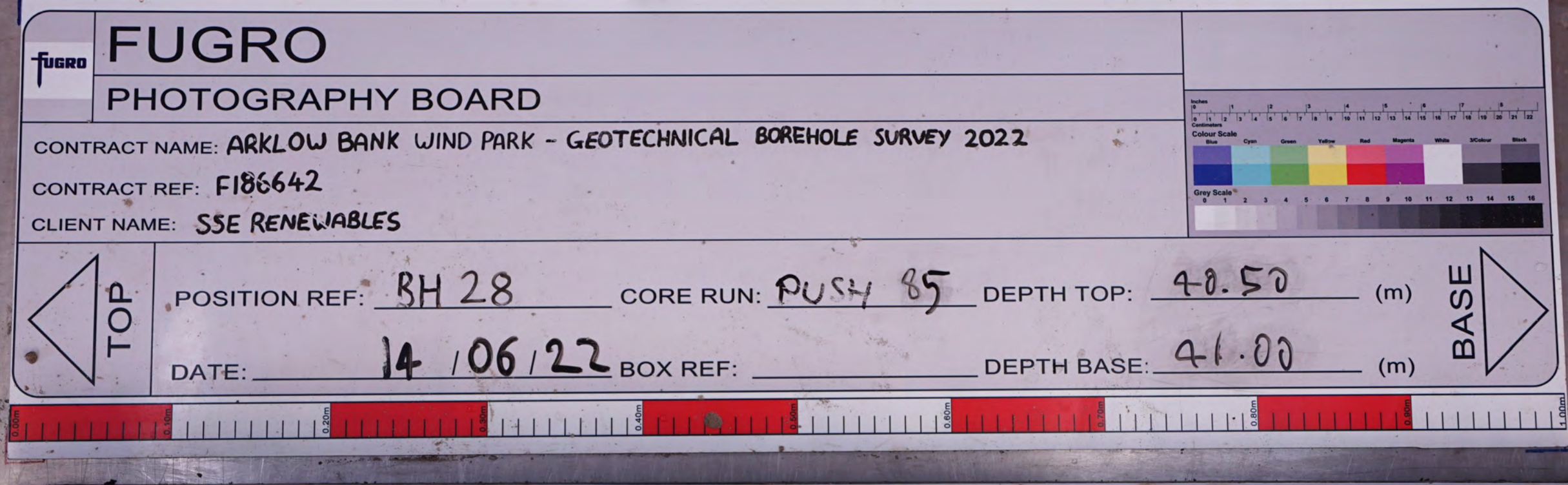

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 85
DEPTH TOP: 40.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 41.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1062


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 85
DEPTH TOP: 40.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 41.00 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1063

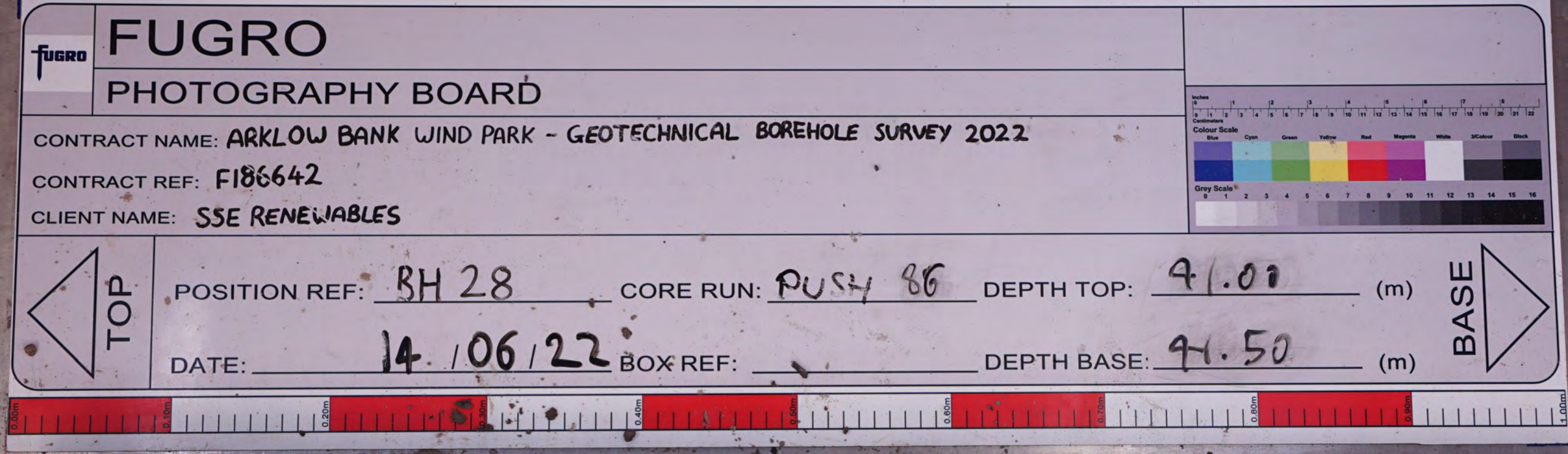

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 86
DEPTH TOP: 91.01 (m)
DATE: 14/06/22
BOX REF: 1
DEPTH BASE: 91.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1064


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 86
DEPTH TOP: 41.00 (m)
DATE: 14/06/22
BOX REF: 1
DEPTH BASE: 41.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1065

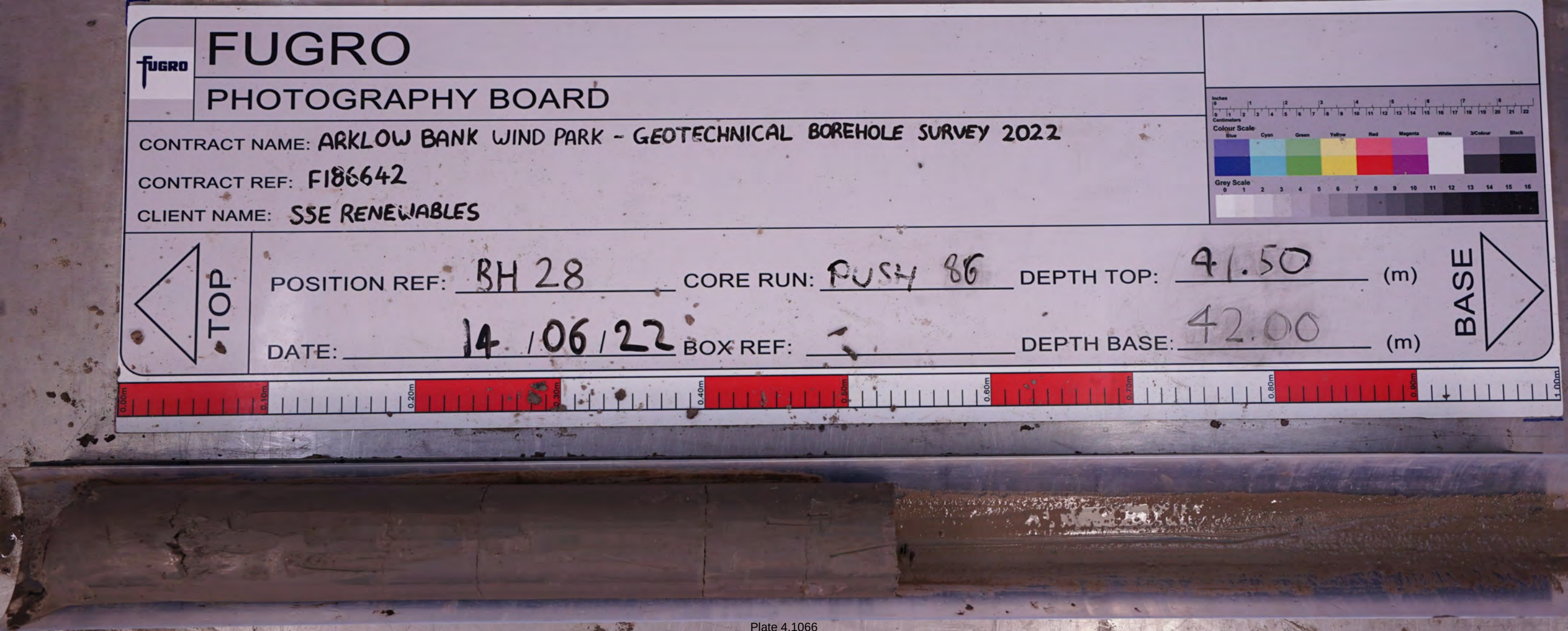

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 86
DEPTH TOP: 41.50 (m)
DATE: 14/06/22
BOX REF: 1
DEPTH BASE: 42.00 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1066

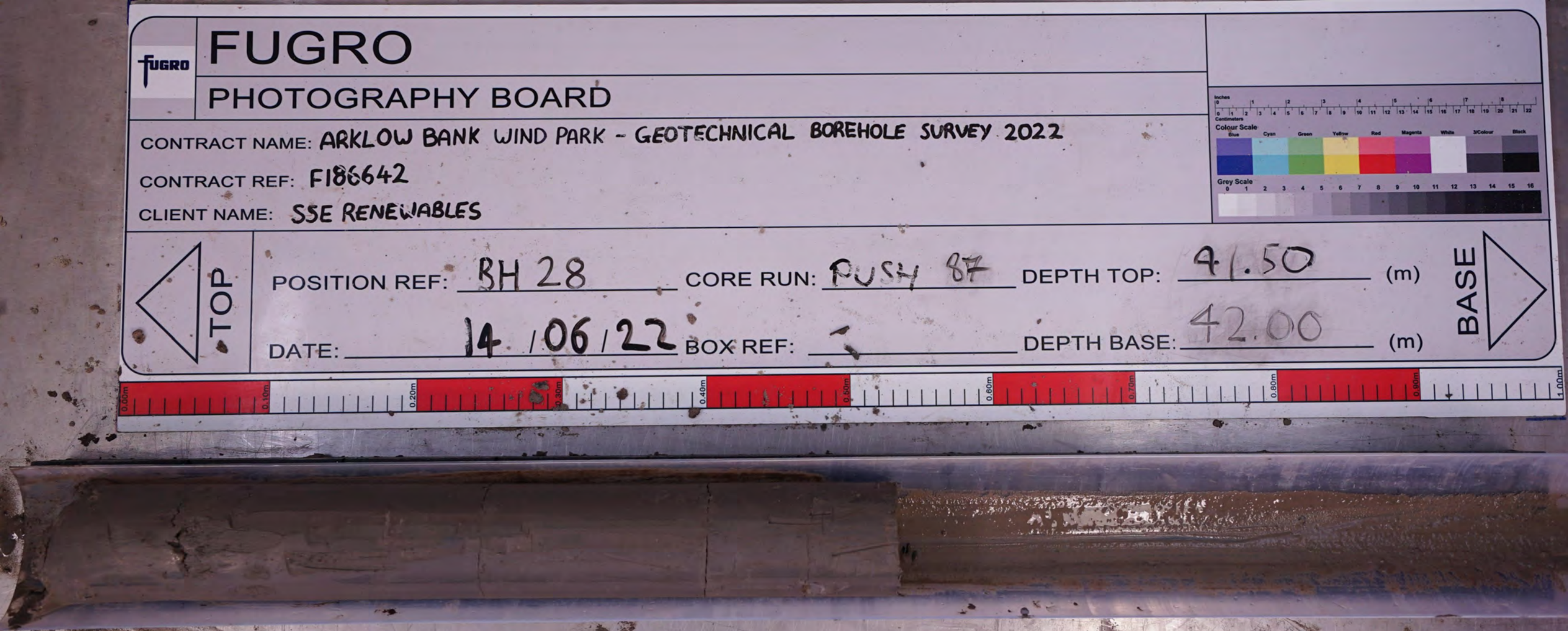

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 87
DEPTH TOP: 41.50 (m)
DATE: 14/06/22
BOX REF: 1
DEPTH BASE: 42.00 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1067

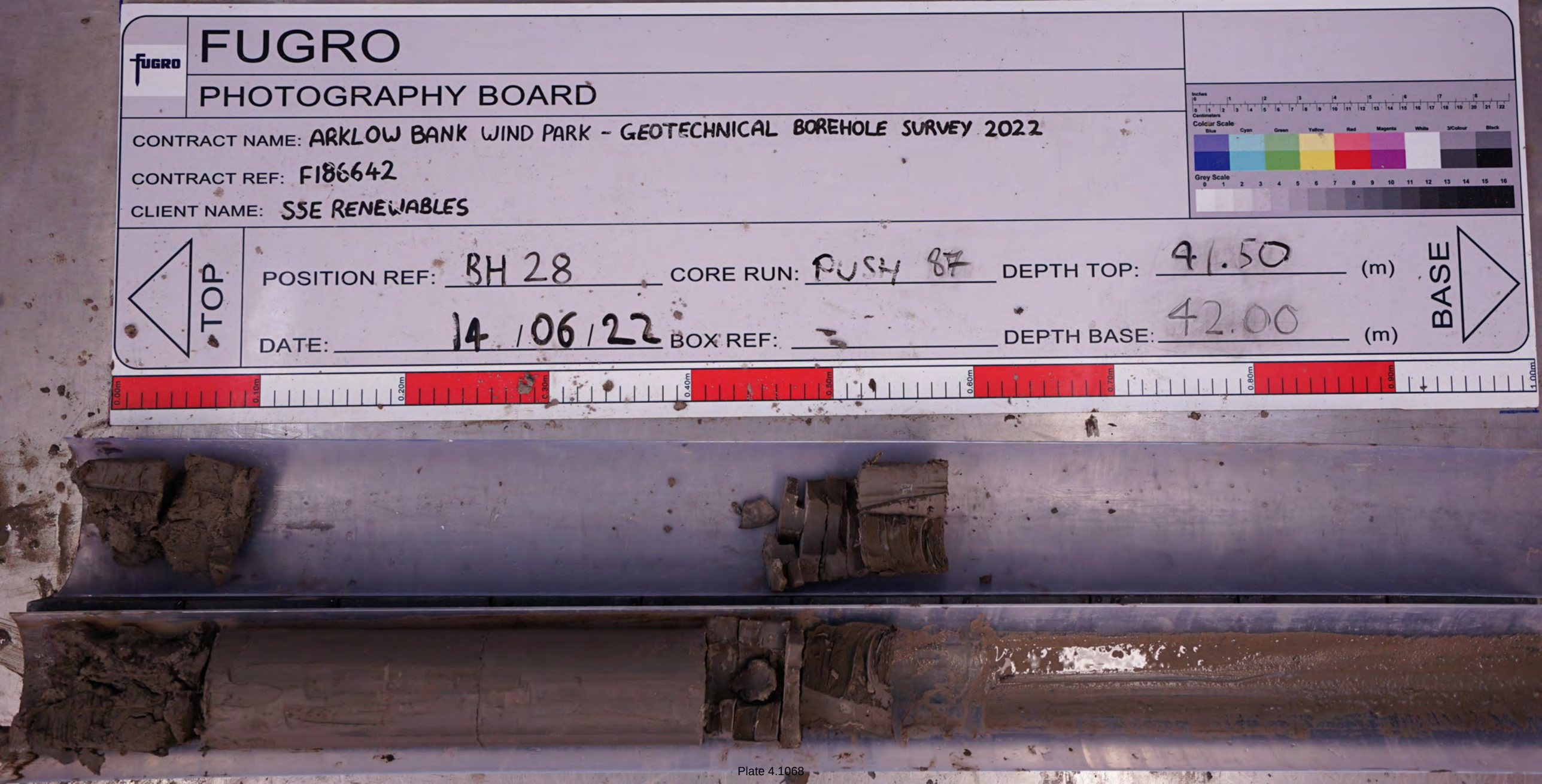
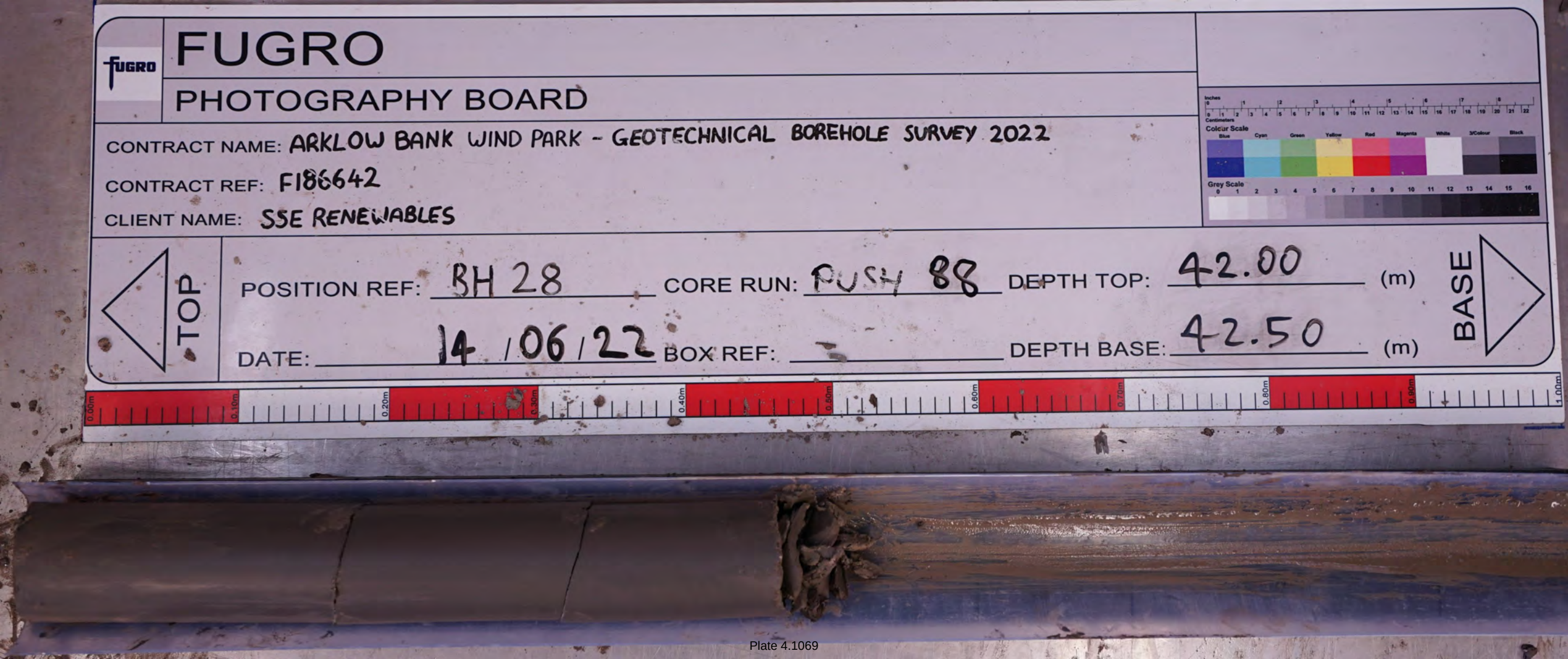

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 87
DEPTH TOP: 41.50 (m)
DATE: 14/06/22
BOX REF: 3
DEPTH BASE: 42.00 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1068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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 88
DEPTH TOP: 42.00 (m)
DATE: 14/06/22
BOX REF: 3
DEPTH BASE: 42.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale

Plate 4.1069

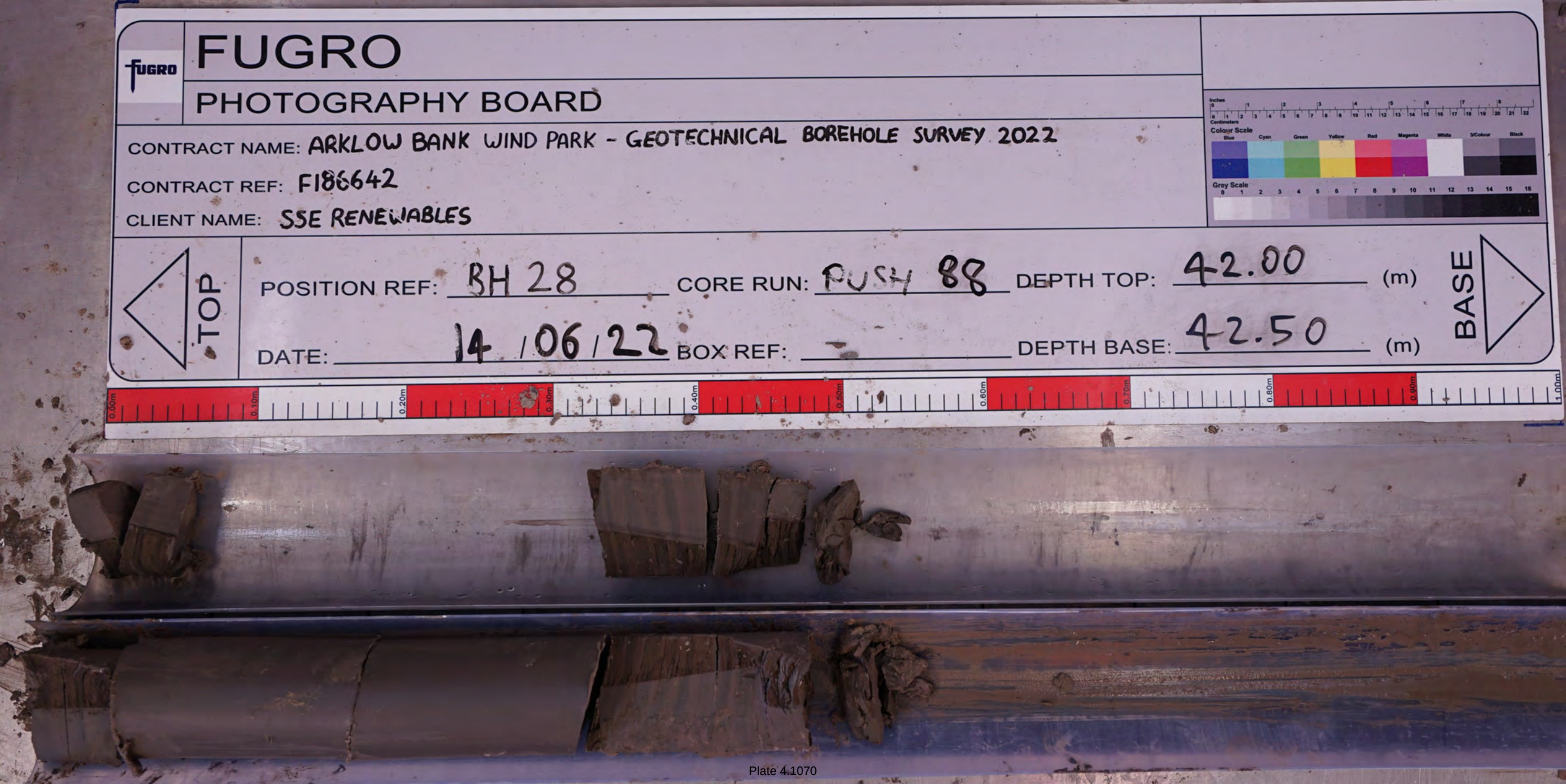

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 88
DEPTH TOP: 42.00 (m)
DATE: 14/06/22
BOX REF: -
DEPTH BASE: 42.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1070

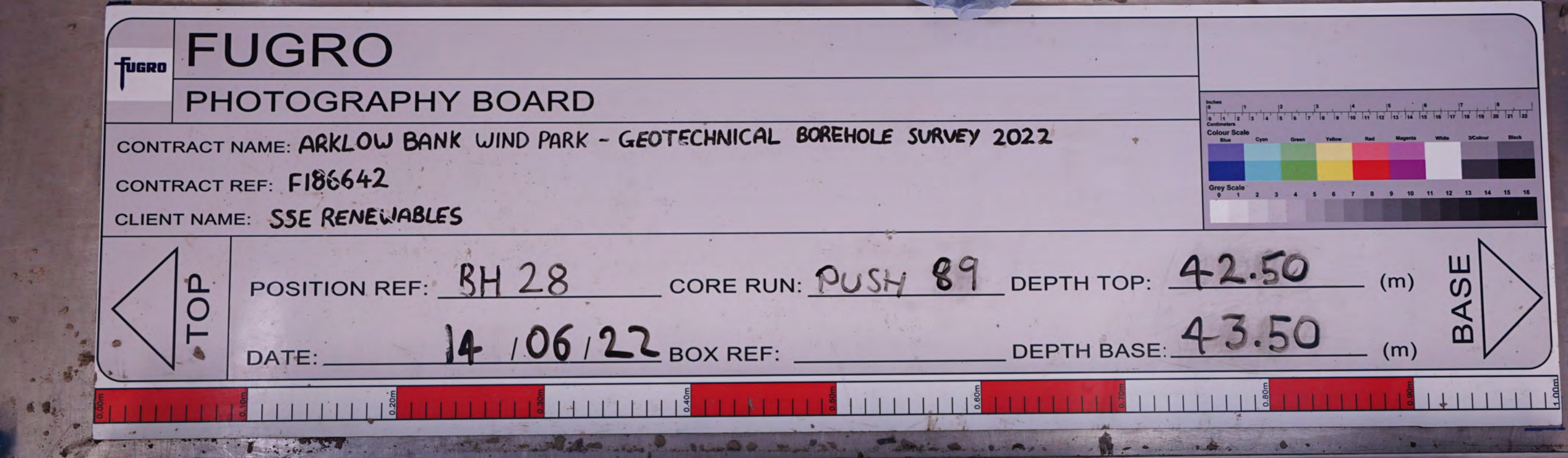

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 89
DEPTH TOP: 42.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 43.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1071


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 89
DEPTH TOP: 42.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 43.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1072

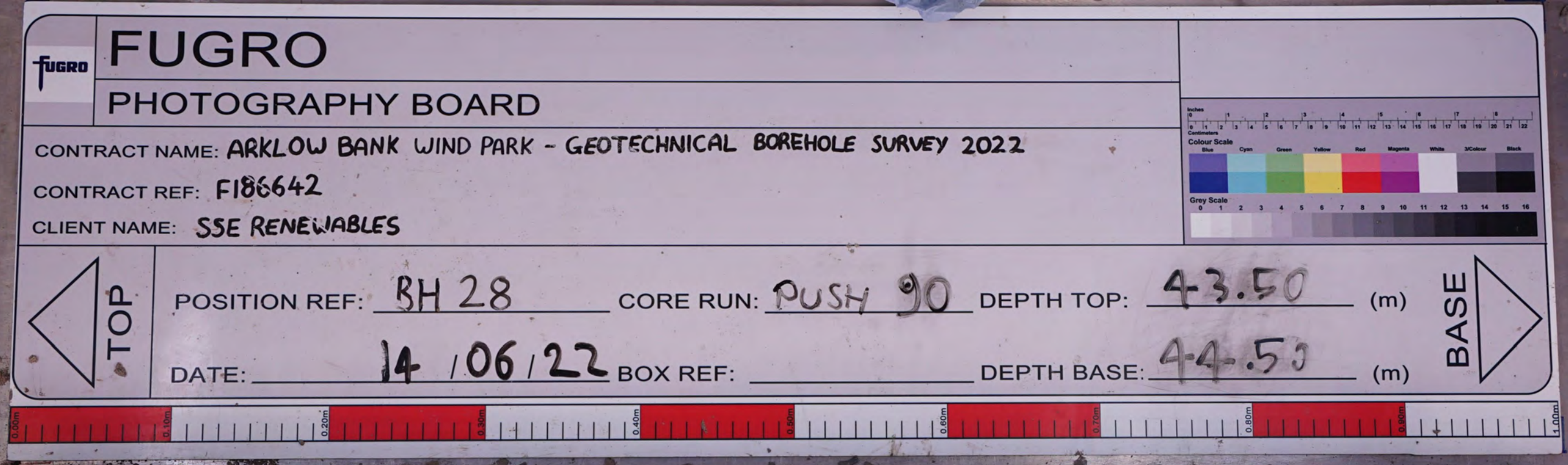

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 90
DEPTH TOP: 43.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 44.50 (m)
BASE
Colour Scale
Blue
Cyan
Green
Yellow
Red
Magenta
White
3/Colour
Black
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1073

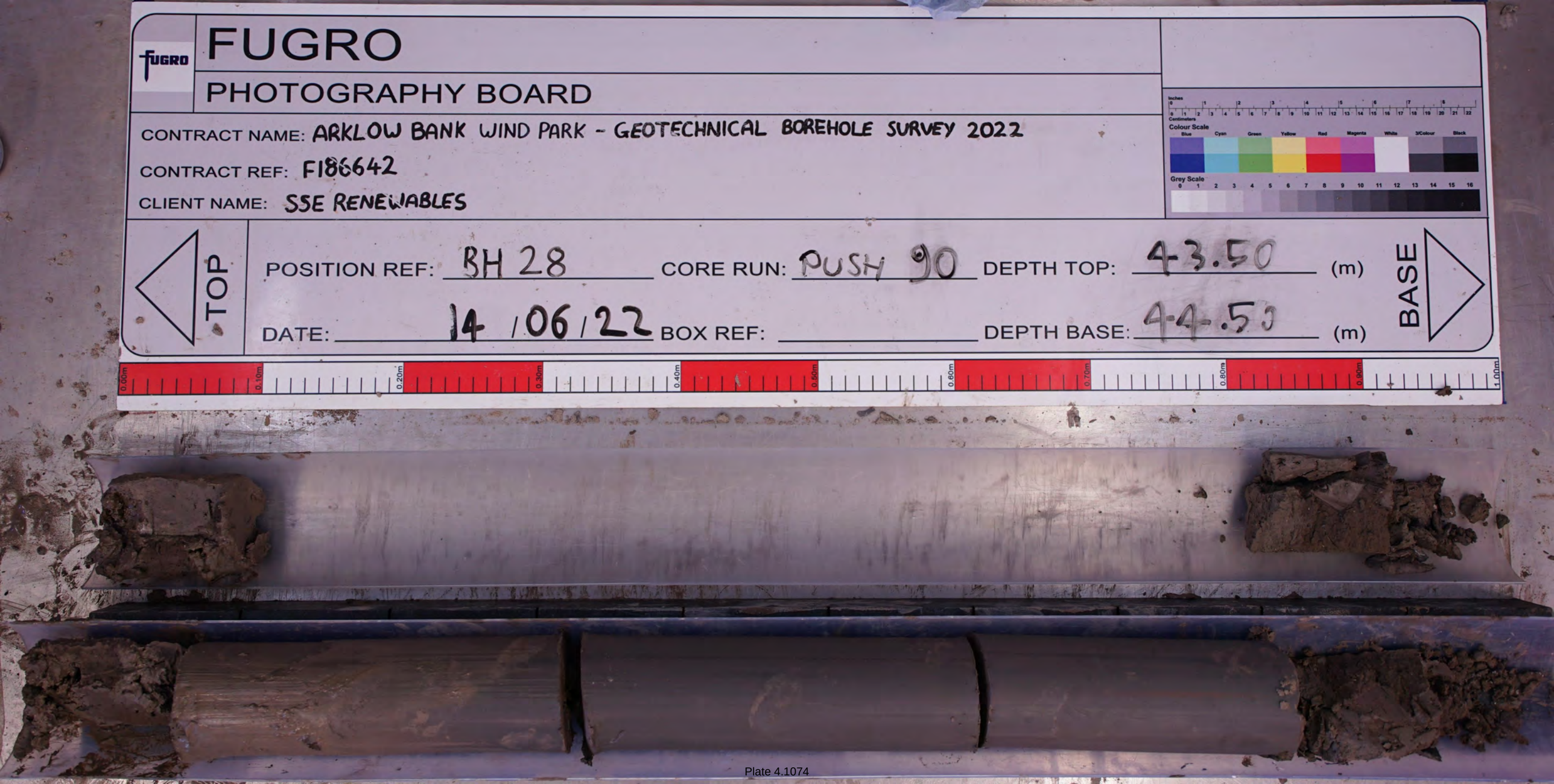
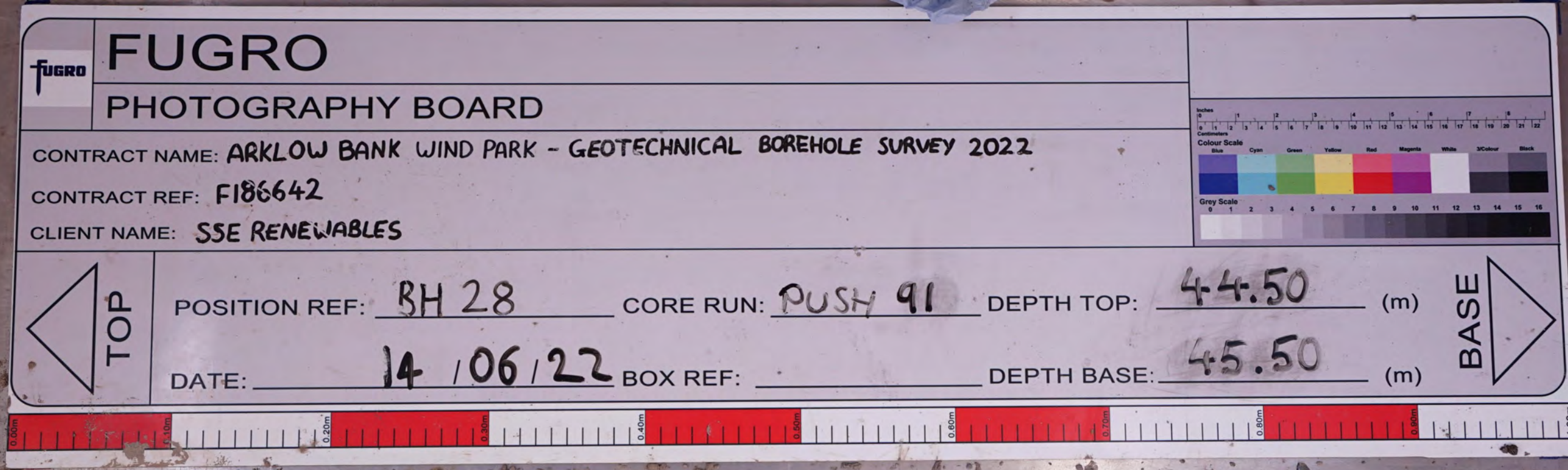

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 90
DEPTH TOP: 43.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 44.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1074


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: CR6
DEPTH TOP: 44.50 (m)
DATE: 14/06/22
BOX REF: 6
DEPTH BASE: 45.50 (m)
BASE
Colour Scale
Grey Scale
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m

Plate 4.1075


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: CR 6
DEPTH TOP: 44.50 (m)
DATE: 14/06/22
BOX REF: 6
DEPTH BASE: 45.50 (m)
BASE
0.00m
0.10m
0.20m
0.30m
0.40m
0.50m
0.60m
0.70m
0.80m
0.90m
1.00m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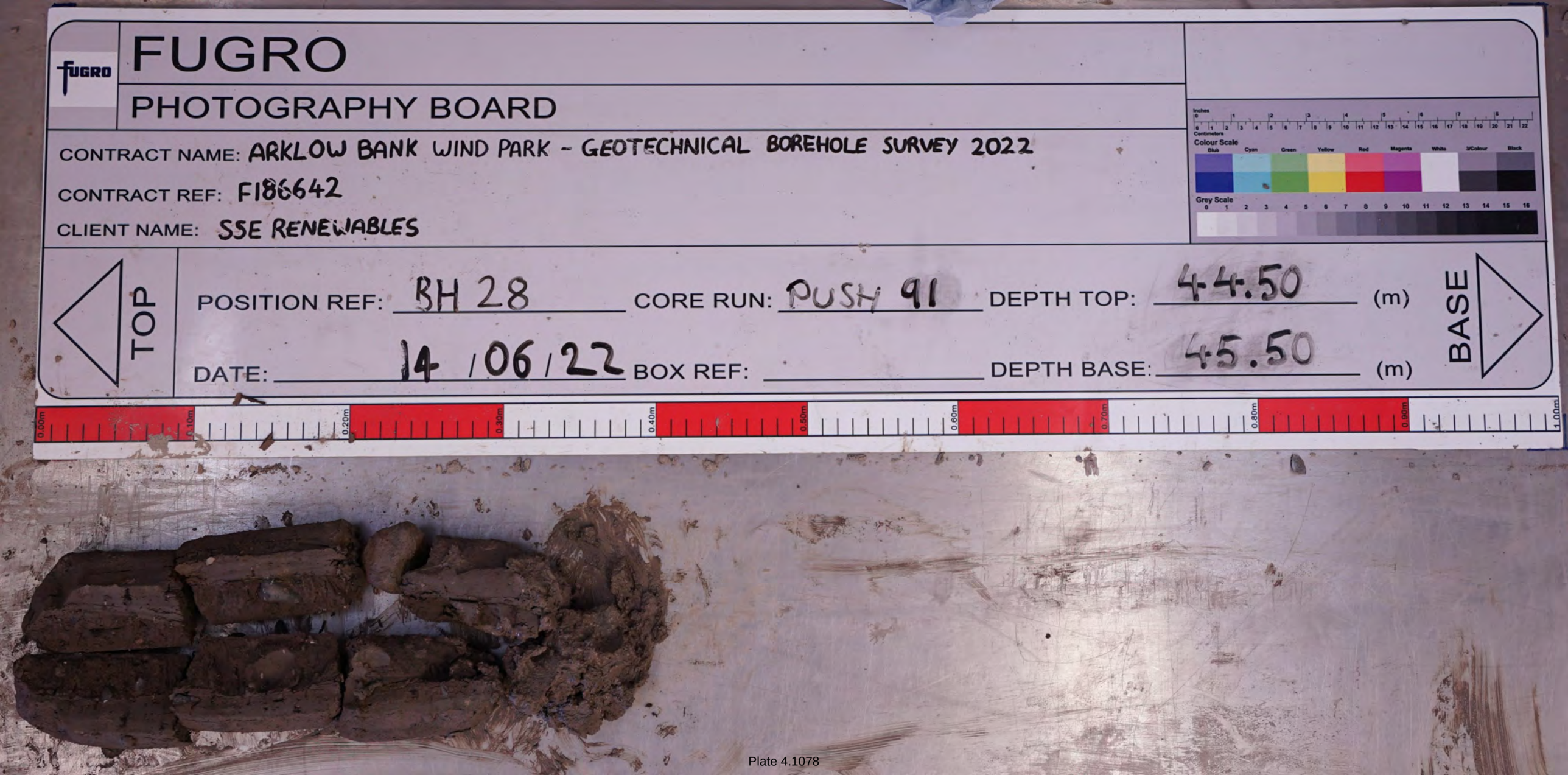
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 91
DEPTH TOP: 44.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 45.50 (m)
BASE
Colour Scale
Blue Cyan Green Yellow Red Magenta White 3/Colour Black
Grey Scale
0.00m 0.10m 0.20m 0.30m 0.40m 0.50m 0.60m 0.70m 0.80m 0.90m 1.00m

Plate 4.1077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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH 28
CORE RUN: PUSH 91
DEPTH TOP: 44.50 (m)
DATE: 14/06/22
BOX REF:
DEPTH BASE: 45.50 (m)
BASE
Colour Scale
Grey Scale

Plate 4.1078

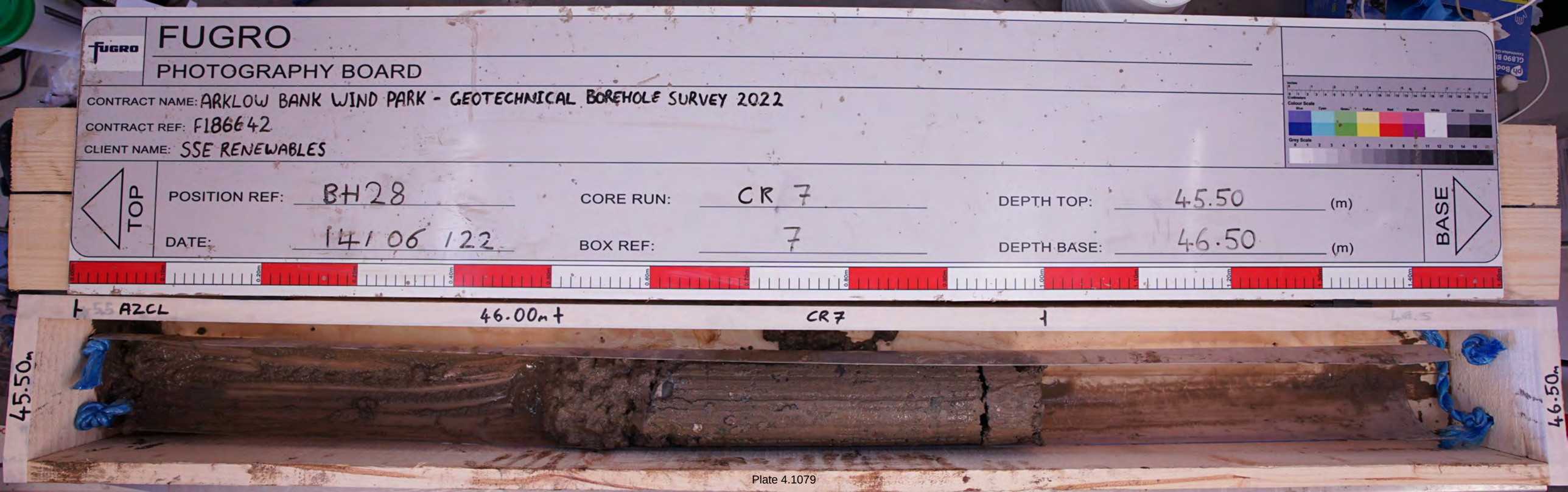

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR 7
DEPTH TOP: 45.50 (m)
DATE: 14/06/22
BOX REF: 7
DEPTH BASE: 46.50 (m)
BASE
AZCL
46.00m
CR7
45.50m
46.50m

Plate 4.1079

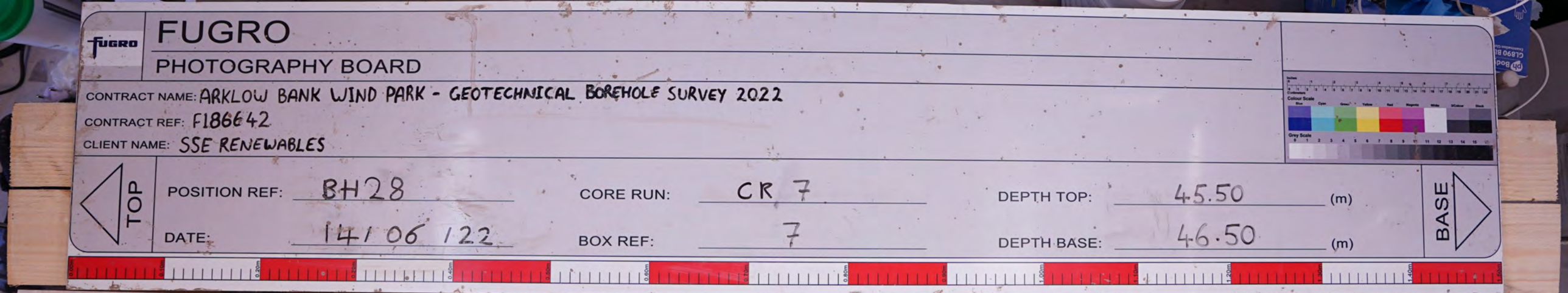
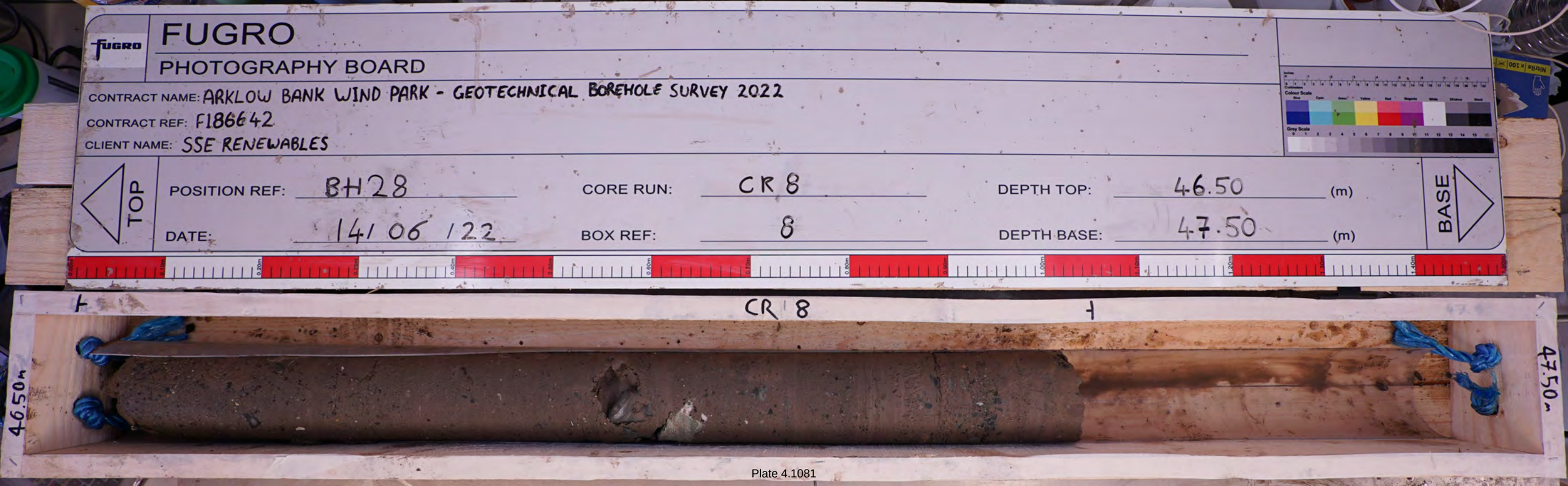

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR 7
DEPTH TOP: 45.50 (m)
DATE: 14/06/22
BOX REF: 7
DEPTH BASE: 46.50 (m)
BASE
AZCL
46.00m
CR7
45.50m
46.50m

Plate 4.1080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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 14/06/22
CORE RUN: CR8
BOX REF: 8
DEPTH TOP: 46.50 (m)
DEPTH BASE: 47.50 (m)
BASE
CR 8
46.50m
47.50m

Plate 4.1081


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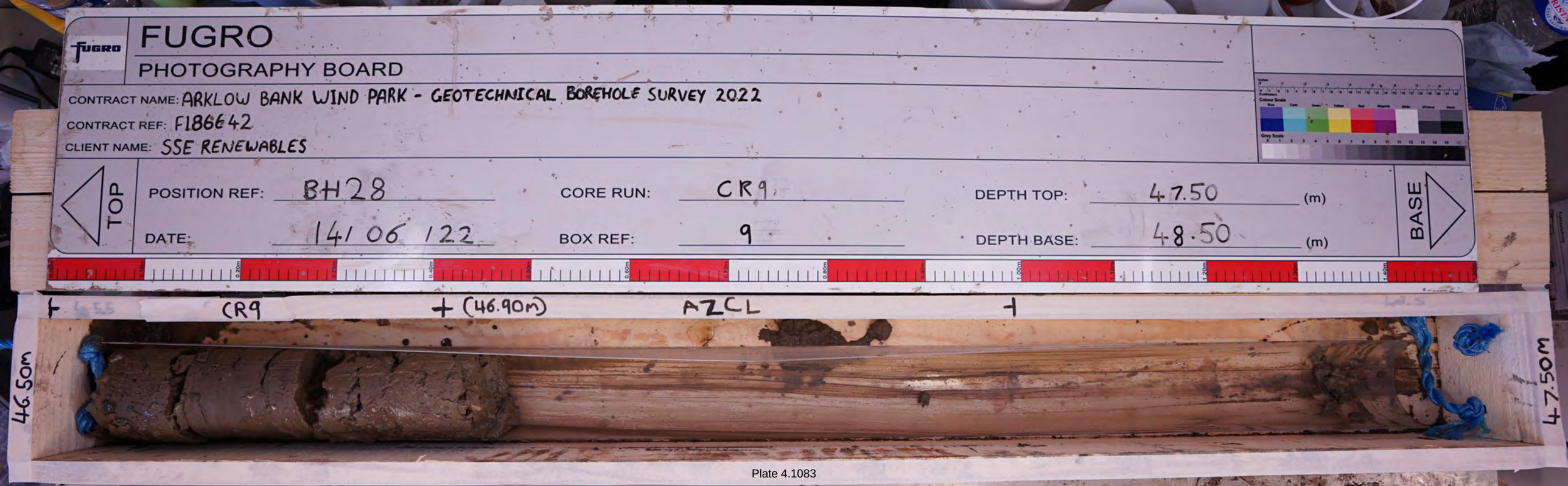
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 14/06/22
CORE RUN: CR8
BOX REF: 8
DEPTH TOP: 46.50 (m)
DEPTH BASE: 47.50 (m)
BASE
CR 8
46.50m
47.50m

Plate 4.1082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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR9
DEPTH TOP: 47.50 (m)
DATE: 14/06/22
BOX REF: 9
DEPTH BASE: 48.50 (m)
BASE
CR9
+ (46.90m)
AZCL
46.50m
47.50m

Plate 4.1083


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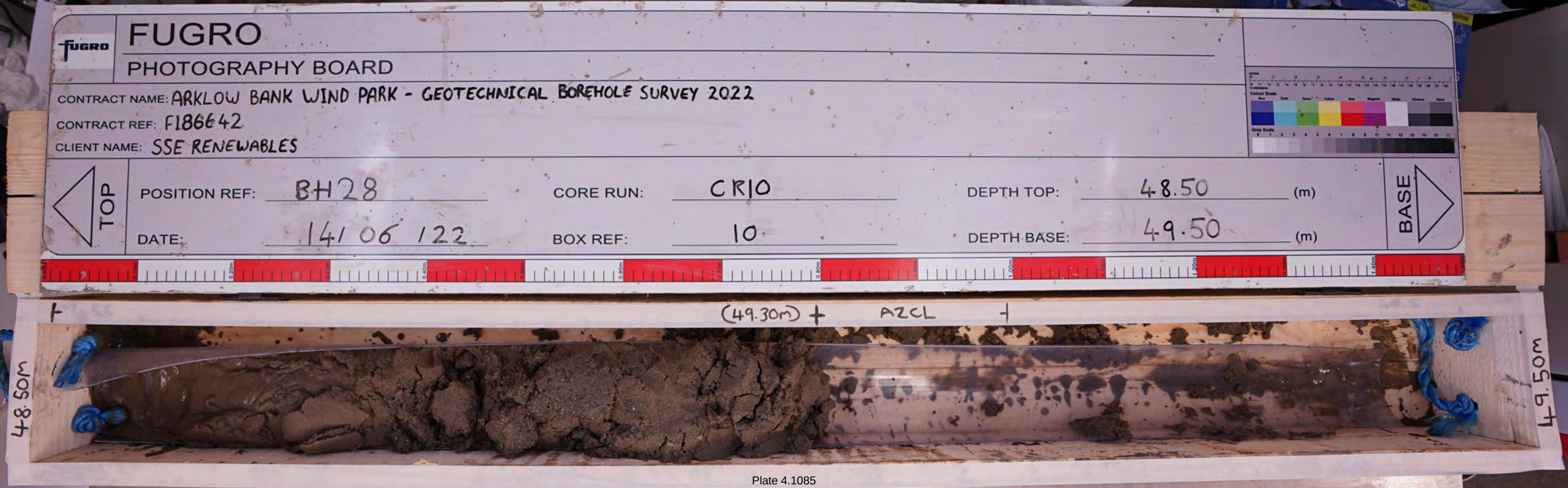
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR9
DEPTH TOP: 47.50 (m)
DATE: 14/06/22
BOX REF: 9
DEPTH BASE: 48.50 (m)
BASE
CR9
(47.90m)
AZCL
47.50m
48.50m

Plate 4.1084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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR10
DEPTH TOP: 48.50 (m)
DATE: 14/06/22
BOX REF: 10
DEPTH BASE: 49.50 (m)
BASE
(49.30m)
AZCL
48.50m
49.50m

Plate 4.1085


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR10
DEPTH TOP: 48.50 (m)
DATE: 14/06/22
BOX REF: 10
DEPTH BASE: 49.50 (m)
BASE
(49.30m)
AZCL
48.50m
49.50m

Plate 4.1086

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH28

CORE RUN: CR11

DEPTH TOP: 49.50 (m)

DATE: 14/06/22

BOX REF: 11

DEPTH BASE: 50.50 (m)

BASE

CR11

49.50m

50.50m

Plate 4.1087


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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR11
DEPTH TOP: 49.50 (m)
DATE: 14/06/22
BOX REF: 11
DEPTH BASE: 50.50 (m)
BASE
CR11
49.50m
50.50m

Plate 4.1088

FUGRO

PHOTOGRAPHY BOARD

CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH 28 CORE RUN: PUSH 15 DEPTH TOP: 5.50 (m)

DATE: 12/06/22 BOX REF: DEPTH BASE: 6.00 (m)

BASE



Plate 4.1089

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH28

CORE RUN: CR12

DEPTH TOP: 50.50 (m)

DATE: 14/06/22

BOX REF: 12

DEPTH BASE: 51.50 (m)

BASE



Plate 4.1090


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR12
DEPTH TOP: 50.50 (m)
DATE: 14/06/22
BOX REF: 12
DEPTH BASE: 51.50 (m)
BASE
CR12
50.50m
51.50m

Plate 4.1091

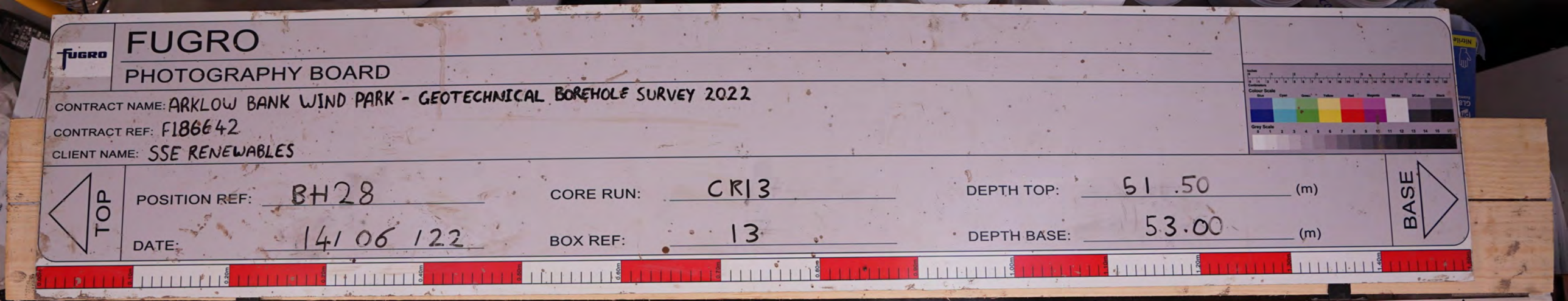
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 14/06/22
CORE RUN: CR13
BOX REF: 13
DEPTH TOP: 51.50 (m)
DEPTH BASE: 53.00 (m)
BASE
CR13
51.50m
53.00m

Plate 4.1092


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR13
DEPTH TOP: 51.50 (m)
DATE: 14/06/22
BOX REF: 13
DEPTH BASE: 53.00 (m)
BASE
CR13
51.50m
53.00m

Plate 4.1093

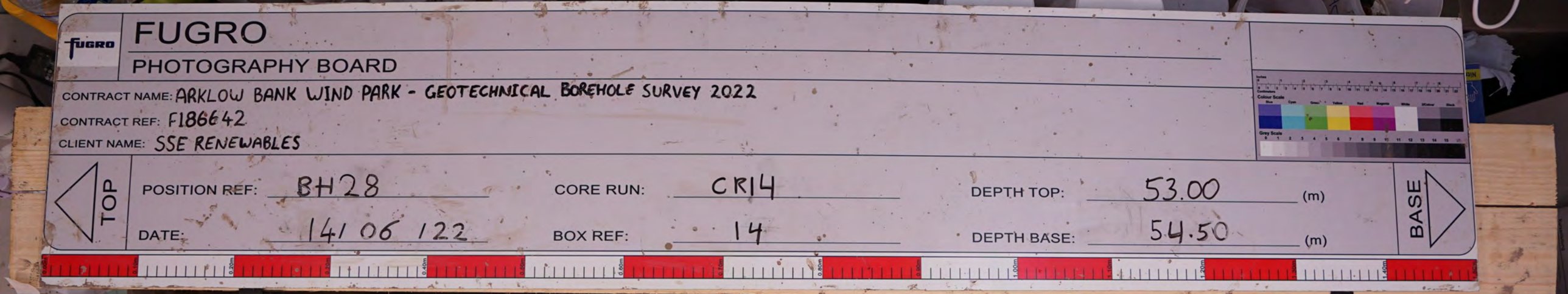
FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR14
DEPTH TOP: 53.00 (m)
DATE: 14/06/22
BOX REF: 14
DEPTH BASE: 54.50 (m)
BASE
CR14
53.00m
54.50m

Plate 4.1094


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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR14
DEPTH TOP: 53.00 (m)
DATE: 14/06/22
BOX REF: 14
DEPTH BASE: 54.50 (m)
BASE
CR14
53.00m
54.50m

Plate 4.1095

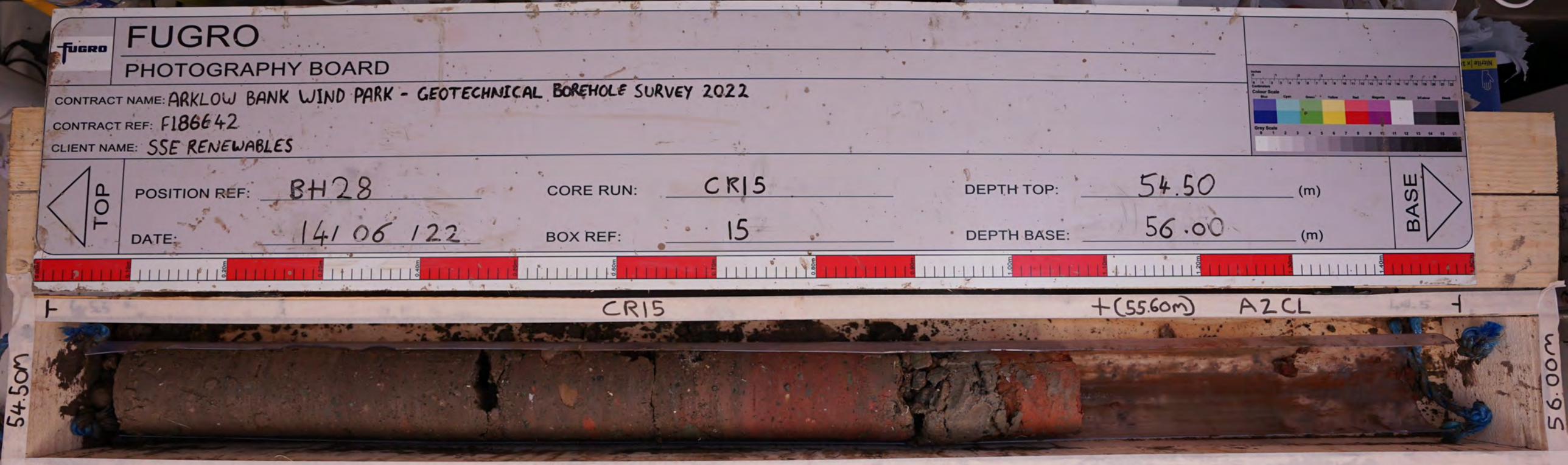
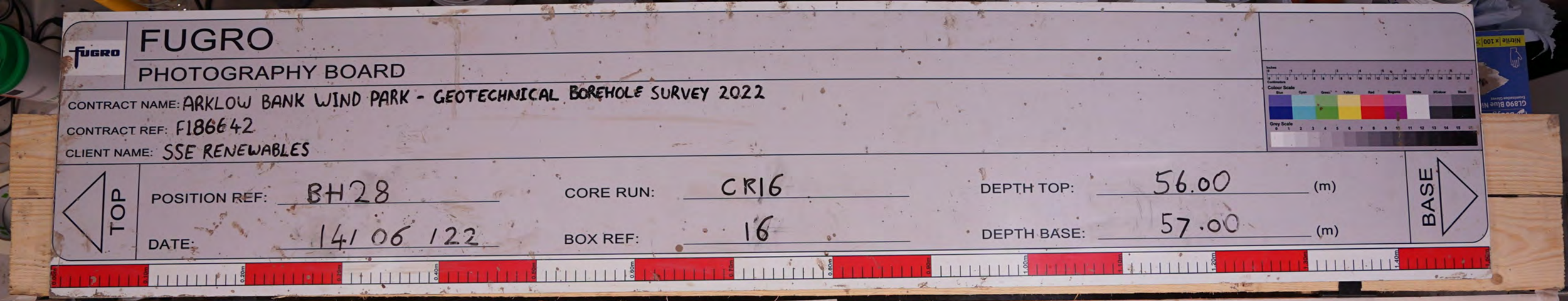

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 14/06/22
CORE RUN: CR15
BOX REF: 15
DEPTH TOP: 54.50 (m)
DEPTH BASE: 56.00 (m)
BASE
CR15
+(55.60m)
A2CL
54.50m
56.00m

Plate 4.1096


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR15
DEPTH TOP: 54.50 (m)
DATE: 14/06/22
BOX REF: 15
DEPTH BASE: 56.00 (m)
BASE
54.50m
56.00m

Plate 4.1097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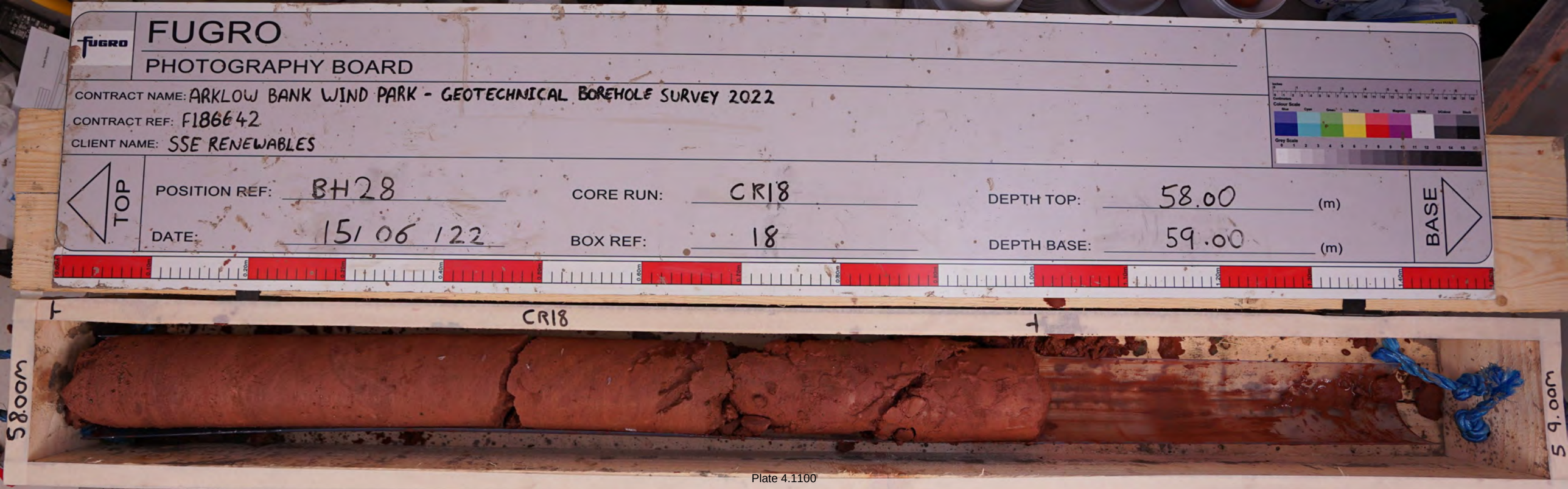
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 14/06/22
CORE RUN: CR16
BOX REF: 16
DEPTH TOP: 56.00 (m)
DEPTH BASE: 57.00 (m)
BASE
CR16 +(56.75m) A2CL
56.00m
57.00m

Plate 4.1098


FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR16
DEPTH TOP: 56.00 (m)
DATE: 14/06/22
BOX REF: 16
DEPTH BASE: 57.00 (m)
BASE
completely weathered
56.00m
57.00m

Plate 4.1099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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR18
DEPTH TOP: 58.00 (m)
DATE: 15/06/22
BOX REF: 18
DEPTH BASE: 59.00 (m)
BASE
CR18
58.00m
59.00m

Plate 4.1100


FUGRO
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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR18
DEPTH TOP: 58.00 (m)
DATE: 15/06/22
BOX REF: 18
DEPTH BASE: 59.00 (m)
BASE
CR18
58.00m
59.00m

Plate 4.1101

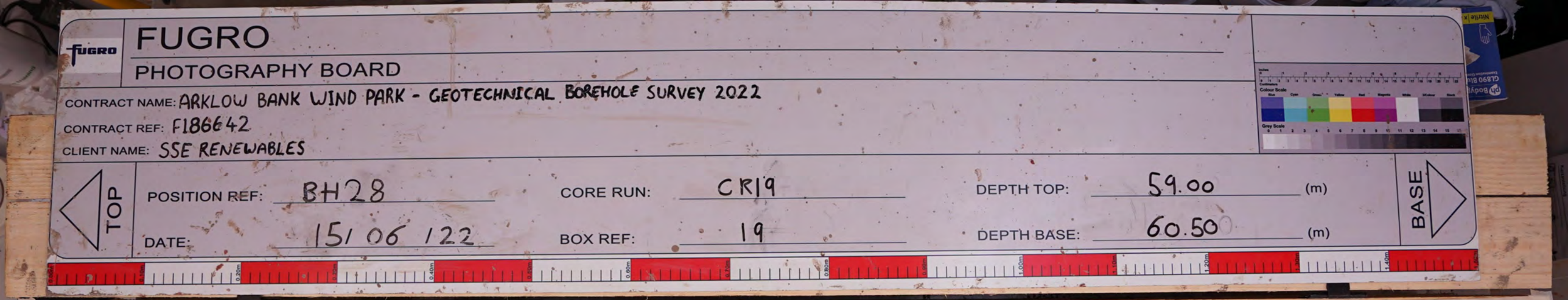
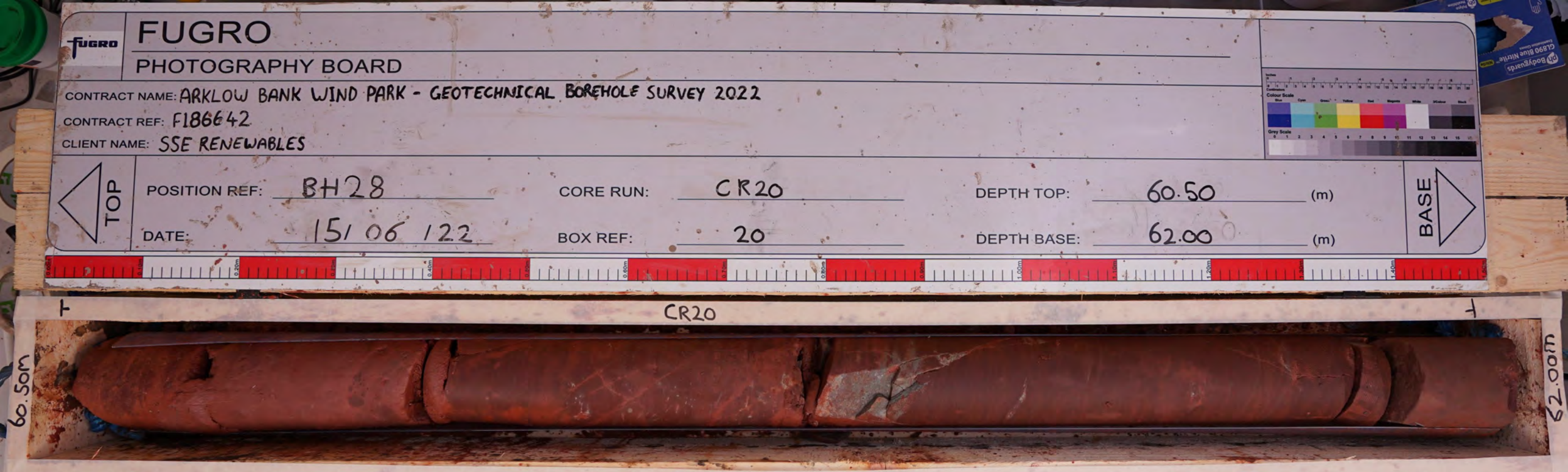

FUGRO
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
DATE: 15/06/22
CORE RUN: CR19
BOX REF: 19
DEPTH TOP: 59.00 (m)
DEPTH BASE: 60.50 (m)
BASE
CR19
59.00m
60.50m

Plate 4.1102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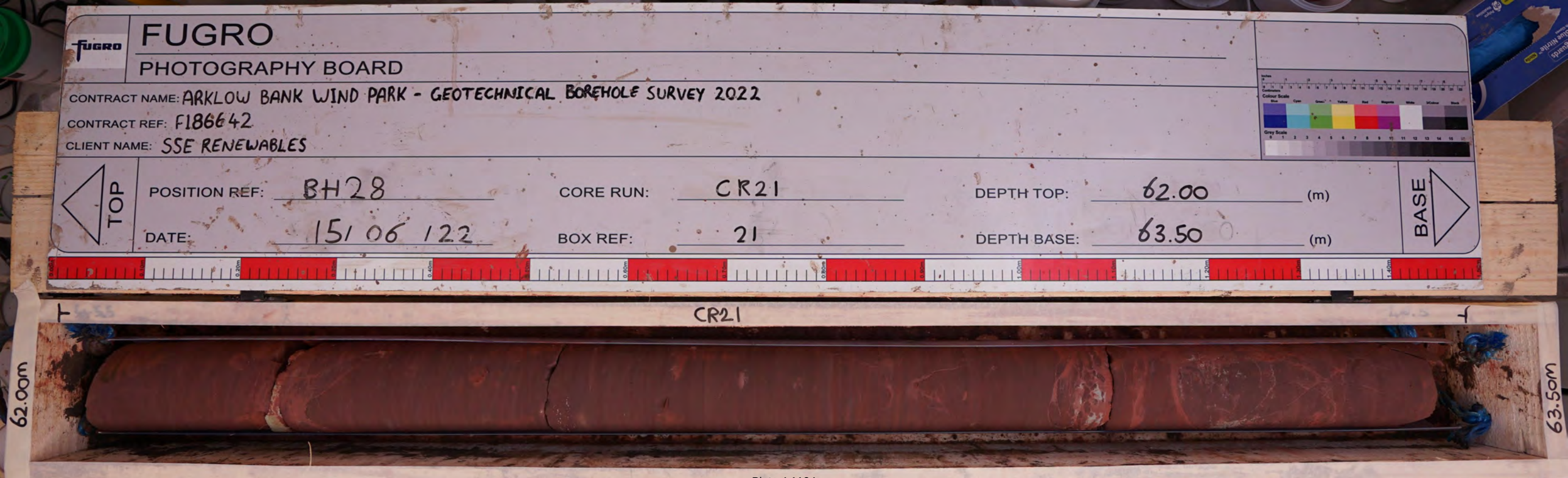
PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR20
DEPTH TOP: 60.50 (m)
DATE: 15/06/22
BOX REF: 20
DEPTH BASE: 62.00 (m)
BASE
CR20
60.50m
62.00m

Plate 4.1103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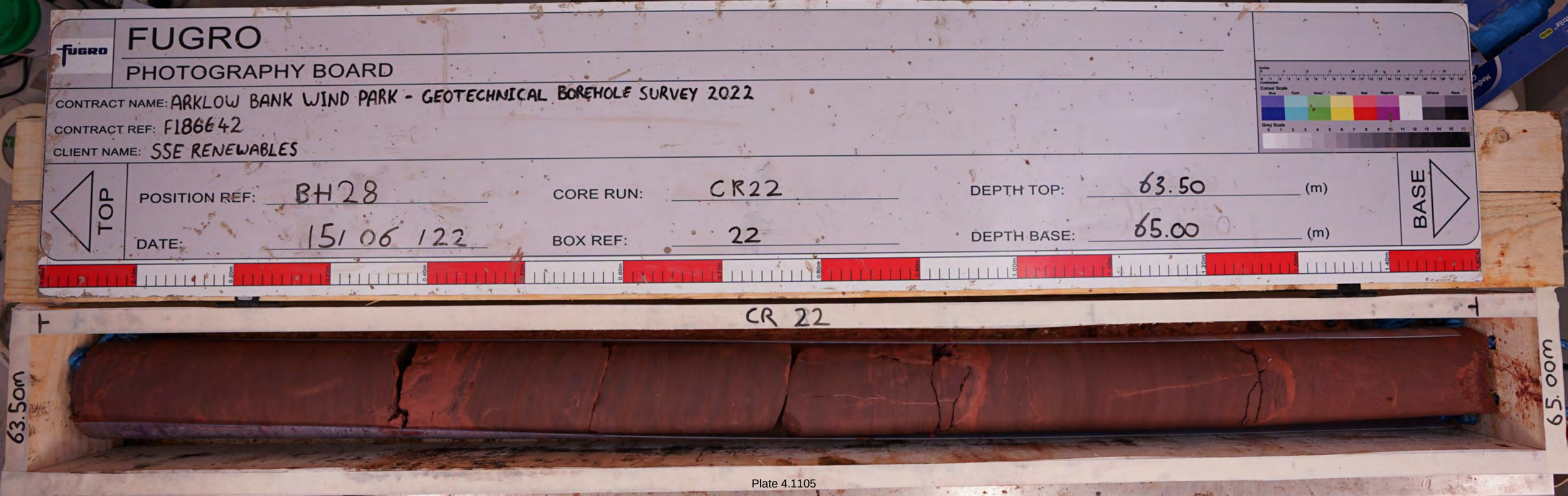
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR21
DEPTH TOP: 62.00 (m)
DATE: 15/06/22
BOX REF: 21
DEPTH BASE: 63.50 (m)
BASE
CR21
62.00m
63.50m

Plate 4.1104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PHOTOGRAPHY BOARD
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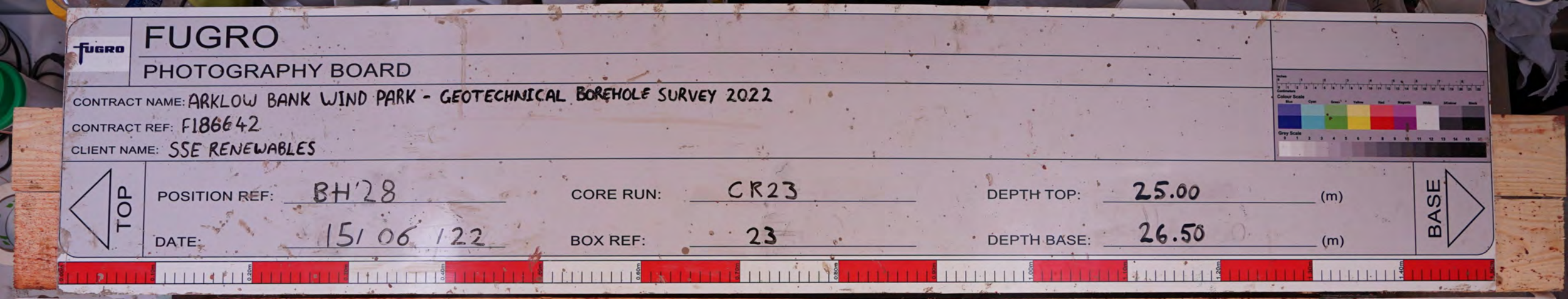
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH28
CORE RUN: CR22
DEPTH TOP: 63.50 (m)
DATE: 15/06/22
BOX REF: 22
DEPTH BASE: 65.00 (m)
BASE
CR 22
63.50m
65.00m

Plate 4.1105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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH'28
CORE RUN: CR23
DEPTH TOP: 25.00 (m)
DATE: 15/06/22
BOX REF: 23
DEPTH BASE: 26.50 (m)
BASE
CR 23
65.00
66.50

Plate 4.1106

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CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022

CONTRACT REF: F186642

CLIENT NAME: SSE RENEWABLES

TOP

POSITION REF: BH28

DATE: 15/06/22

CORE RUN: CR24

BOX REF: 24

DEPTH TOP: 26.50 (m)

DEPTH BASE: 28.00 (m)

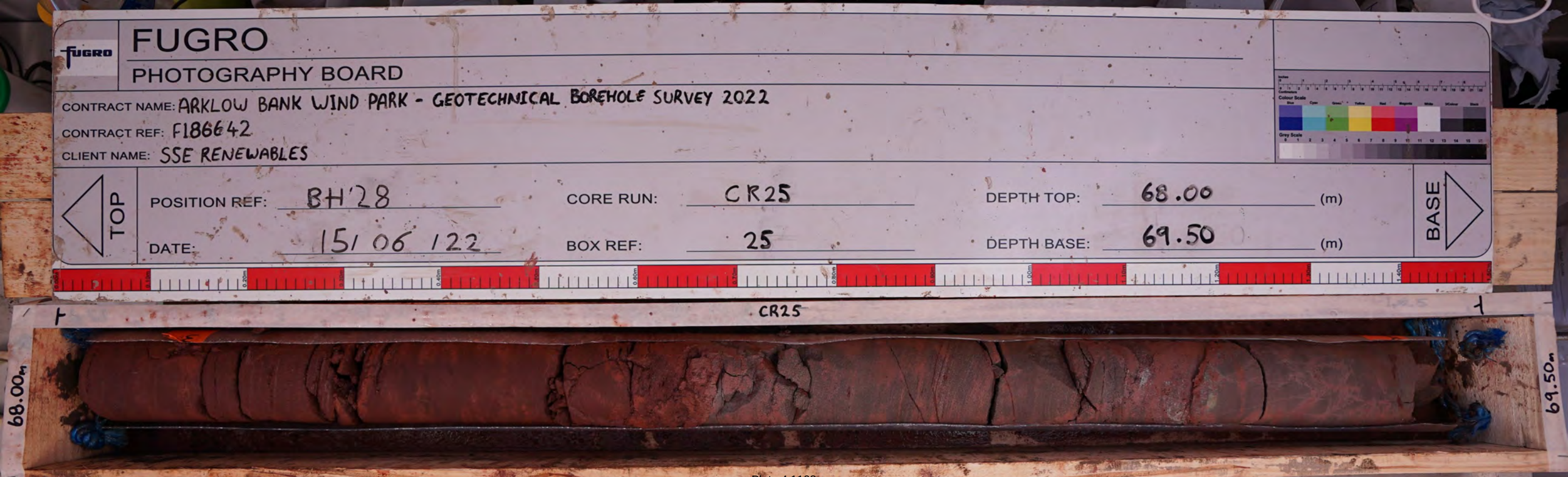
BASE

CR24

66.50m

68.00m

Plate 4.1107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PHOTOGRAPHY BOARD
CONTRACT NAME: ARKLOW BANK WIND PARK - GEOTECHNICAL BOREHOLE SURVEY 2022
CONTRACT REF: F186642
CLIENT NAME: SSE RENEWABLES
TOP
POSITION REF: BH'28
CORE RUN: CR25
DEPTH TOP: 68.00 (m)
DATE: 15/06/22
BOX REF: 25
DEPTH BASE: 69.50 (m)
BASE
CR25
68.00m
69.50m

Plate 4.1108

5. Laboratory Test Data

Title	Plate No.
Water Content Test Results	5.1 to 5.125
Bulk and Dry Density Test Results	5.126 to 5.174
Unconsolidated Undrained Triaxial Test Results	5.175 to 5.240
Rock Density Test Results	5.241 to 5.267
Point Load Test Results	5.268 to 5.292
Thermal Resistivity Test Results	5.293

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	0.15	B	2	F-ZHBFPB-A982	0.3	Dark greyish brown very silty SAND.	21.02	105	
BH01	1	B	3	F-KNFFPB-G20N	1.1	Very soft dark grey sandy SILT.	23.19	105	
BH01	1.2	B	4	F-COFFPB-6EIL	1.3	Very soft dark grey sandy SILT.	25.42	105	
BH01	1.4	B	5	F-OOFFPB-P8M7	1.5	Very soft dark grey sandy SILT.	23.18	105	
BH01	3.5	B	8	F-L2SFPB-FETU	3.78	Very dense grey slightly gravelly slightly silty SAND.	11.06	105	
BH01	5	B	10	F-7HWFPB-Y0X5	5.15	Brown and greyish brown sandy slightly silty GRAVEL.	11.57	105	
BH01	5	B	10	F-7HWFPB-Y0X5	5.45	Brown and greyish brown sandy slightly silty GRAVEL.	9.14	105	
BH01	5.75	B	12	F-GTYFPB-JU4Y	5.75	Brown and greyish brown sandy slightly silty GRAVEL.	20.92	105	
BH01	6	B	13	F-HUYFPB-7Q0Z	6	Brown and greyish brown sandy slightly silty GRAVEL.	16.14	105	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	6	B	13	F-HUYFPB-7Q0Z	6.25	Brown and greyish brown sandy slightly silty GRAVEL.	11.96	105	
BH01	6	B	13	F-HUYFPB-7Q0Z	6.15	Brown and greyish brown sandy slightly silty GRAVEL.	12.79	105	
BH01	6.5	B	14	F-0X0GPB-5CUO	6.65	Brown and greyish brown sandy slightly silty GRAVEL.	22.95	105	
BH01	7.2	B	16	F-Q03GPB-U8N2	7.2	Brown slightly silty SAND.	29.12	105	
BH01	7.4	B	17	F-213GPB-964I	7.4	Brown slightly silty SAND.	21.61	105	
BH01	7.6	B	18	F-C13GPB-IBMP	7.8	Brown slightly silty SAND.	25.04	105	
BH01	7.6	B	18	F-C13GPB-IBMP	7.6	Brown slightly silty SAND.	24.99	105	
BH01	8.2	B	20	F-HR4GPB-ZOIB	8.2	Brown slightly silty SAND.	24.66	105	
BH01	8.4	B	21	F-QR4GPB-7GTP	8.65	Brown slightly silty SAND.	24.47	105	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	8.4	B	21	F-QR4GPB-7GTP	8.4	Brown slightly silty SAND.	24.68	105	
BH01	9.25	B	23	F-VADGPB-U7Y6	9.25	Brown slightly silty SAND.	26.83	105	
BH01	9.5	B	24	F-U1EGPB-SYAO	9.5	Brown slightly silty SAND.	23.13	105	
BH01	9.75	B	25	F-82EGPB-BZOD	9.75	Brown slightly silty SAND.	26.34	105	
BH01	10	B	26	F-BKGGPB-QMFV	10	Brown slightly silty SAND.	19.53	105	
BH01	10.2	B	27	F-NKGGPB-3BOO	10.2	Brown slightly silty SAND.	29.71	105	
BH01	10.4	B	28	F-1LGGPB-1FPJ	10.5	Brown slightly silty SAND.	23.13	105	
BH01	10.4	B	28	F-1LGGPB-1FPJ	10.4	Brown slightly silty SAND.	26.33	105	
BH01	10.6	B	29	F-DLGGPB-9WQE	10.6	Brown slightly silty SAND.	24.64	105	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	11.2	B	31	F-UTIGPB-GWOB	11.2	Brown very silty SAND.	30.23	105	
BH01	11.4	B	32	F-6UIGPB-DGWC	11.4	Brown very silty SAND.	31.72	105	
BH01	11.6	B	33	F-HUIGPB-6L2Z	11.8	Brown very silty SAND.	28.12	105	
BH01	11.6	B	33	F-HUIGPB-6L2Z	11.6	Brown very silty SAND.	32.81	105	
BH01	12.25	B	35	F-U1KGPB-0XL2	12.25	Brown very silty SAND.	23.96	105	
BH01	12.5	D	36	F-92KGPB-505E	12.5	Brown very silty SAND.	31.43	105	
BH01	12.6	B	37	F-S2KGPB-IEXV	12.6	Brown very silty SAND.	21.95	105	
BH01	12.6	B	37	F-S2KGPB-IEXV	12.85	Brown very silty SAND.	16.83	105	
BH01	13	B	38	F-HBLGPB-8W9D	13.2	Brown very silty SAND.	17.9	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	13.25	B	39	F-XBLGPB-A9WT	13.4	Brown very silty SAND.	22.53	105	
BH01	13.5	B	40	F-GUOGPB-Y4IN	13.7	Dark greenish grey slightly sandy GRAVEL.	11.16	105	
BH01	16.12	B	45	F-RO1HPB-R9TY	16.16	Very dark grey GRAVEL.	19.3	105	
BH01	16.5	B	46	F-227HPB-J14A	16.7	Brown slightly silty SAND.	21.74	105	
BH01	16.75	B	47	F-W27HPB-COOQ	16.9	Brown slightly silty SAND.	21.51	105	
BH01	17	B	48	F-837HPB-7RNV	17.1	Brown slightly silty SAND.	21.99	105	
BH01	17.5	B	49	F-KZAHPB-BULG	17.6	Brown slightly silty SAND.	16.09	105	
BH01	18	B	50	F-YCCHPB-N0KS	18.1	Brown slightly silty SAND.	20.5	105	
BH01	18.25	B	51	F-C3DHPB-MPBL	18.3	Brown slightly silty SAND.	16.31	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	18.5	B	52	F-O7EHPB-ZIOD	18.55	Brown slightly silty SAND.	19.81	105	
BH01	18.7	B	53	F-58EHPB-5W7O	18.85	Brown slightly silty SAND.	19.05	105	
BH01	19	B	54	F-CJFHPB-B8BI	19.05	Brown slightly silty SAND.	20.57	105	
BH01	19.25	B	55	F-QJFHPB-VB9I	19.25	Brown slightly silty SAND.	22.26	105	
BH01	20	B	56	F-EZHHPB-M6VL	20.1	Brown slightly silty SAND.	20.02	105	
BH01	20.25	B	57	F-YZHHPB-E1FT	20.4	Brown slightly silty SAND.	17.98	105	
BH01	21	B	58	F-PJJHPB-5V9R	21.1	Stiff brown slightly sandy CLAY.	18	105	
BH01	21.25	B	60	F-TLJHPB-X5E4	21.25	Stiff brown slightly sandy CLAY.	20.25	105	
BH01	21.5	B	62	F-4ULHPB-BB82	21.7	Stiff brown slightly sandy CLAY.	19.24	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	22	B	64	F-TUMHPB-R25G	22.15	Stiff brown slightly sandy CLAY.	16.6	105	
BH01	22.18	B	65	F-FVMHPB-UP7X	22.35	Stiff brown slightly sandy CLAY.	18.43	105	
BH01	22.5	B	66	F-P9OHPB-3U79	22.6	Stiff brown slightly sandy CLAY.	18.7	105	
BH01	22.7	C	67	F-KAOHPB-NGZU	22.7	Stiff brown slightly sandy CLAY.	18.77	105	
BH01	22.9	C	68	F-BBOHPB-UZKQ	22.9	Stiff brown slightly sandy CLAY.	17.86	105	
BH01	23.1	C	69	F-NBOHPB-X5XG	23.1	Stiff brown slightly sandy CLAY.	18.81	105	
BH01	23.3	B	70	F-1COHPB-N6A2	23.4	Stiff brown slightly sandy CLAY.	18.91	105	
BH01	23.7	B	72	F-X2RHPB-9X0N	23.7	Stiff brown slightly sandy CLAY.	19.52	105	
BH01	23.9	D	73	F-F3RHPB-BYH8	23.9	Stiff brown slightly sandy CLAY.	18.48	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	24.15	C	75	F-FXRHPB-Y91V	24.15	Stiff brown slightly sandy CLAY.	19.19	105	
BH01	24.35	B	76	F-XXRHPB-CD7J	24.4	Stiff brown slightly sandy CLAY.	18.78	105	
BH01	24.6	B	78	F-9JTHPB-4OSO	24.6	Stiff brown slightly sandy CLAY.	18.45	105	
BH01	24.8	D	79	F-XJTHPB-F44Q	24.8	Stiff brown slightly sandy CLAY.	19.92	105	
BH01	24.9	C	80	F-EKTHPB-K4ZQ	24.9	Stiff brown slightly sandy CLAY.	19.05	105	
BH01	25.1	D	81	F-0LTHPB-FCJW	25.1	Stiff brown slightly sandy CLAY.	19.03	105	
BH01	25.2	B	82	F-BUUHPB-IBRG	25.3	Stiff brown slightly sandy CLAY.	20.78	105	
BH01	25.5	B	84	F-5QWHPB-4EPF	25.5	Stiff brown slightly sandy CLAY.	21.73	105	
BH01	25.7	C	85	F-MQWHPB-5RJE	25.7	Stiff brown slightly sandy CLAY.	23.8	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	25.9	C	86	F-5SWHPB-JDJM	25.9	Stiff brown slightly sandy CLAY.	23.6	105	
BH01	26.1	D	87	F-OSWHPB-5STT	26.1	Stiff brown slightly sandy CLAY.	21.34	105	
BH01	26.2	D	88	F-PQXHPB-C95T	26.2	Stiff brown slightly sandy CLAY.	23.86	105	
BH01	26.4	D	90	F-LRXHPB-UB07	26.4	Stiff brown slightly sandy CLAY.	56.27	105	
BH01	26.5	D	91	F-HYYHPB-3XHW	26.5	Stiff brown slightly sandy CLAY.	20.78	105	
BH01	26.6	B	92	F-5ZYHPB-6EJ0	26.6	Stiff brown slightly sandy CLAY.	26.26	105	
BH01	26.8	B	93	F-LZYHPB-FPLT	26.8	Stiff brown sandy SILT.	14.96	105	
BH01	27	B	94	F-KUZHPB-LL72	27	Stiff brown sandy SILT.	15.24	105	
BH01	27.2	C	95	F-AVZHPB-TWRP	27.2	Stiff brown sandy SILT.	25.74	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	27.4	D	96	F-RVZHPB-IY4U	27.4	Stiff brown sandy SILT.	15.16	105	
BH01	27.6	C	98	F-S61IPB-ZPKU	27.6	Stiff brown sandy SILT.	17.17	105	
BH01	27.8	B	99	F-971IPB-QCBL	27.8	Stiff brown sandy SILT.	18.69	105	
BH01	28	D	100	F-C42IPB-VMFQ	28	Stiff and very stiff brown CLAY.	17.9	105	
BH01	28.1	B	101	F-P42IPB-9TEN	28.1	Stiff and very stiff brown CLAY.	19.01	105	
BH01	28.25	B	102	F-752IPB-OC8N	28.25	Stiff and very stiff brown CLAY.	21.57	105	
BH01	28.4	D	103	F-M52IPB-3D6Y	28.4	Stiff and very stiff brown CLAY.	15.88	105	
BH01	28.6	C	105	F-K65IPB-SNUI	28.6	Stiff and very stiff brown CLAY.	21.69	105	
BH01	28.8	B	106	F-675IPB-AP0P	28.8	Stiff and very stiff brown CLAY.	12.92	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	29	B	107	F-FU6IPB-4Q29	29	Stiff and very stiff brown CLAY.	14.41	105	
BH01	29.2	B	108	F-VU6IPB-9L66	29.2	Stiff and very stiff brown CLAY.	29.44	105	
BH01	29.4	D	109	F-CV6IPB-G1GO	29.4	Very stiff brown slightly gravelly slightly sandy CLAY.	21.82	105	
BH01	29.5	D	110	F-E18IPB-KH5P	29.5	Very stiff brown slightly gravelly slightly sandy CLAY.	9.51	105	
BH01	29.6	B	111	F-96BIPB-GGQM	29.6	Very stiff brown slightly gravelly slightly sandy CLAY.	14.16	105	
BH01	29.8	C	112	F-47BIPB-IMAF	29.8	Very stiff brown slightly gravelly slightly sandy CLAY.	12.1	105	
BH01	30.05	C	113	F-O7BIPB-N7S8	30.05	Very stiff brown slightly gravelly slightly sandy CLAY.	9.59	105	
BH01	30.3	B	114	F-98BIPB-SXGJ	30.3	Very stiff brown slightly gravelly slightly sandy CLAY.	11.61	105	
BH01	30.7	C	116	F-8MCIPB-9YEH	30.7	Very stiff brown slightly gravelly slightly sandy CLAY.	11.17	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	30.95	B	117	F-RMCIPB-60HI	30.95	Very stiff brown slightly gravelly slightly sandy CLAY.	10.77	105	
BH01	31.2	B	118	F-POCIPB-V0JB	31.2	Very stiff brown slightly gravelly slightly sandy CLAY.	10.96	105	
BH01	31.4	D	119	F-7PCIPB-H41T	31.4	Very stiff brown slightly gravelly slightly sandy CLAY.	11.51	105	
BH01	31.7	C	121	F-OIEIPB-FNL2	31.7	Very stiff brown slightly gravelly slightly sandy CLAY.	10.64	105	
BH01	32	C	122	F-CJEIPB-TYDJ	32	Very stiff brown slightly gravelly slightly sandy CLAY.	12.5	105	
BH01	32.3	B	123	F-VJEIPB-LWWV	32.3	Very stiff brown slightly gravelly slightly sandy CLAY.	12.84	105	
BH01	33.1	C	128	F-VHGIPB-H0IM	33.1	Very stiff brown slightly gravelly slightly sandy CLAY.	14.88	105	
BH01	33.35	D	129	F-CIGIPB-CCO8	33.35	Very stiff brown slightly gravelly slightly sandy CLAY.	13.77	105	
BH01	34.25	B	131	F-UJHIPB-4NC9	34.25	Light brownish grey SAND.	24.99	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	34.5	B	132	F-J2JIPB-OKQR	34.5	Light brownish grey SAND.	21.95	105	
BH01	34.7	B	133	F-33JIPB-YODN	34.75	Light brownish grey SAND.	22.59	105	
BH01	35	B	134	F-9GKIPB-2YEB	35	Light brownish grey SAND.	23.93	105	
BH01	35.25	B	135	F-5HKIPB-6PNY	35.45	Light brownish grey SAND.	21.49	105	
BH01	35.25	B	135	F-5HKIPB-6PNY	35.25	Light brownish grey SAND.	21.84	105	
BH01	35.5	B	136	F-7KMIPB-DHDY	35.6	Light brownish grey SAND.	23.51	105	
BH01	35.7	B	137	F-NLMIPB-PT4Q	35.8	Light brownish grey SAND.	24.49	105	
BH01	36	B	138	F-72RIPB-J7U6	36.2	Light brownish grey SAND.	25.36	105	
BH01	36.25	B	139	F-O2RIPB-VMIZ	36.25	Light brownish grey SAND.	22.05	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	37	B	141	F-ZO3JPB-VRFT	37	Light brownish grey SAND.	23.03	105	
BH01	37.13	B	142	F-VP3JPB-MUJD	37.2	Light brownish grey SAND.	17.81	105	
BH01	37.25	B	143	F-8Q3JPB-XD1Y	37.25	Light brownish grey SAND.	23.32	105	
BH01	37.5	B	145	F-MG5JPB-9DJV	37.6	Stiff brownish grey CLAY.	20.76	105	
BH01	37.7	C	146	F-AH5JPB-F08R	37.7	Stiff brownish grey CLAY.	22.21	105	
BH01	37.9	B	147	F-PH5JPB-U7SG	37.9	Stiff brownish grey CLAY.	21.2	105	
BH01	38.1	C	148	F-2I5JPB-FF5P	38.1	Stiff brownish grey CLAY.	22.36	105	
BH01	38.3	B	149	F-XK5JPB-PC2L	38.4	Stiff brownish grey CLAY.	19.97	105	
BH01	38.5	B	150	F-7IFJPB-2KBV	38.6	Stiff brownish grey CLAY.	18.81	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	39.1	C	152	F-7K1KPB-5WVW	39.1	Very stiff brown slightly sandy CLAY.	20.23	105	
BH01	39.3	B	153	F-4L1KPB-1WPS	39.3	Very stiff brown slightly sandy CLAY.	12.99	105	
BH01	39.5	D	154	F-OL1KPB-Y4VV	39.5	Very stiff brown slightly sandy CLAY.	20.16	105	
BH01	39.6	D	155	F-RU2KPB-JNZF	39.6	Very stiff brown slightly sandy CLAY.	26.26	105	
BH01	39.8	C	157	F-595KPB-7C8Y	39.8	Very stiff brown slightly sandy CLAY.	18.4	105	
BH01	40	D	158	F-BA5KPB-VZJP	40	Very stiff brown slightly sandy CLAY.	14.25	105	
BH01	40.4	C	160	F-527KPB-73MX	40.4	Very stiff brown slightly sandy CLAY.	20.19	105	
BH01	40.6	D	161	F-N27KPB-CVFJ	40.6	Very stiff brown slightly sandy CLAY.	19.17	105	
BH01	40.7	D	162	F-A29KPB-PDRK	40.7	Very stiff brown slightly sandy CLAY.	19.39	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	40.8	B	163	F-T29KPB-G72F	40.8	Very stiff brown slightly sandy CLAY.	23.26	105	
BH01	41	B	164	F-V39KPB-LWS6	41	Very stiff brown slightly sandy CLAY.	18.5	105	
BH01	41.2	C	165	F-D49KPB-SAXT	41.2	Very stiff brown slightly sandy CLAY.	18.16	105	
BH01	42	B	168	F-36QKPB-J6NF	42.2	Brown slightly silty SAND.	27.79	105	
BH01	42.75	B	171	F-K7QKPB-LOHN	42.85	Stiff very dark grey thinly laminated silty CLAY.	27.12	105	
BH01	43.75	B	173	F-XO1LPB-WEWW	43.75	Stiff very dark grey thinly laminated silty CLAY.	26.79	105	
BH01	43.75	B	173	F-XO1LPB-WEWW	43.9	Stiff very dark grey thinly laminated silty CLAY.	27.02	105	
BH01	44	B	174	F-7P1LPB-5SAF	44	Stiff very dark grey thinly laminated silty CLAY.	27.25	105	
BH01	44.25	B	175	F-JP1LPB-UC6O	44.25	Stiff very dark grey thinly laminated silty CLAY.	26.51	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	44.5	B	176	F-F73LPB-MH1A	44.5	Greyish brown SAND.	28.17	105	
BH01	44.75	B	177	F-V73LPB-KMDK	44.9	Greyish brown SAND.	23.72	105	
BH01	45.2	B	179	F-793LPB-I38Z	45.35	Stiff very dark grey thinly laminated silty CLAY.	26.7	105	
BH01	45.5	B	180	F-HC4LPB-FD68	45.6	Stiff very dark grey thinly laminated silty CLAY.	27.83	105	
BH01	46.4	B	184	F-FH4LPB-8373	46.4	Stiff very dark grey thinly laminated silty CLAY.	26.08	105	
BH01	47.5	B	190	F-WN7LPB-4WZT	47.7	Stiff very dark grey slightly gravelly slightly sandy CLAY.	14.93	105	
BH01	47.8	D	191	F-BS7LPB-B5T7	47.85	Stiff very dark grey slightly gravelly slightly sandy CLAY.	12.25	105	
BH01	47.95	C	192	F-ET7LPB-885E	47.95	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.6	105	
BH01	48.3	B	193	F-WT7LPB-V4C8	48.3	Stiff very dark grey slightly gravelly slightly sandy CLAY.	14.54	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	48.9	B	195	F-JW7LPB-C29S	48.95	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.86	105	
BH01	48.9	B	195	F-JW7LPB-C29S	48.9	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.49	105	
BH01	49	B	196	F-QG9LPB-C9NG	49.1	Stiff and very stiff very dark grey gravelly CLAY.	15.61	105	
BH01	49.3	C	197	F-4H9LPB-MV4A	49.3	Stiff and very stiff very dark grey gravelly CLAY.	13.41	105	
BH01	49.6	C	198	F-HH9LPB-C7ZP	49.6	Stiff and very stiff very dark grey gravelly CLAY.	12.66	105	
BH01	49.9	C	199	F-VH9LPB-79XL	49.9	Stiff and very stiff very dark grey gravelly CLAY.	13.14	105	
BH01	50.2	B	200	F-BI9LPB-P22M	50.3	Stiff and very stiff very dark grey gravelly CLAY.	11.89	105	
BH01	50.5	B	201	F-B9CLPB-C05G	50.6	Stiff and very stiff very dark grey gravelly CLAY.	11.66	105	
BH01	51	B	203	F-YBCLPB-HDN1	51	Stiff and very stiff very dark grey gravelly CLAY.	13.71	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	51	B	203	F-YBCLPB-HDN1	51.3	Stiff and very stiff very dark grey gravelly CLAY.	13.09	105	
BH01	52.1	C	205	F-NWFLPB-HDLC	52.1	Stiff and very stiff very dark grey gravelly CLAY.	14.55	105	
BH01	52.35	C	206	F-5XFLPB-4V2O	52.35	Stiff and very stiff very dark grey gravelly CLAY.	13.32	105	
BH01	52.6	B	207	F-0YFLPB-5M10	52.6	Stiff and very stiff very dark grey gravelly CLAY.	17.75	105	
BH01	52.85	D	208	F-MYFLPB-YVNA	52.85	Stiff and very stiff very dark grey gravelly CLAY.	16.21	105	
BH01	53.2	C	210	F-4QHLPB-37HU	53.2	Stiff and very stiff very dark grey gravelly CLAY.	20.97	105	
BH01	53.45	C	211	F-0RHLPB-OTSY	53.45	Stiff and very stiff very dark grey gravelly CLAY.	13.9	105	
BH01	53.7	C	212	F-JRHLPB-JY2Z	53.7	Stiff and very stiff very dark grey gravelly CLAY.	15.29	105	
BH01	54.35	B	214	F-WRHLPB-GQIG	54.35	Stiff and very stiff very dark grey gravelly CLAY.	11.78	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	54.5	B	215	F-9WILPB-XHAC	54.5	Stiff and very stiff very dark grey gravelly CLAY.	12.07	105	
BH01	54.7	C	216	F-QWILPB-Q7BL	54.7	Stiff and very stiff very dark grey gravelly CLAY.	11.86	105	
BH01	55	C	217	F-9XILPB-PD00	55	Stiff and very stiff very dark grey gravelly CLAY.	13.36	105	
BH01	55.3	C	218	F-NXILPB-R5Z9	55.3	Stiff and very stiff very dark grey gravelly CLAY.	12.49	105	
BH01	55.6	D	219	F-9YILPB-VQNA	55.6	Stiff and very stiff very dark grey gravelly CLAY.	17.55	105	
BH01	56.1	C	222	F-FUJLPB-RBTA	56.1	Stiff and very stiff very dark grey gravelly CLAY.	14.5	105	
BH01	56.5	C	223	F-GVJLPB-4YEM	56.5	Stiff and very stiff very dark grey gravelly CLAY.	13.08	105	
BH01	56.9	B	224	F-0WJLPB-W53H	56.9	Stiff and very stiff very dark grey gravelly CLAY.	12.56	105	
BH01	57.3	D	225	F-NWJLPB-I785	57.3	Stiff and very stiff very dark grey gravelly CLAY.	23.23	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	57.6	C	227	F-F2LLPB-VUGP	57.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	30.01	105	
BH01	57.9	C	228	F-W2LLPB-27ET	57.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.12	105	
BH01	57.9	C	228	F-W2LLPB-27ET	58.2	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	27.14	105	
BH01	58.6	C	231	F-9JMLPB-KQWS	58.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.91	105	
BH01	58.9	B	232	F-1KMLPB-RDCQ	58.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	25.22	105	
BH01	59.2	B	233	F-PKMLPB-N6RV	59.2	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	25.79	105	
BH01	59.4	D	234	F-3LMLPB-VZ9J	59.4	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.09	105	
BH01	59.6	B	236	F-YBOLPB-U38W	59.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.94	105	
BH01	59.8	B	237	F-9COLPB-KKAS	59.8	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.12	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	60.2	B	238	F-LCOLPB-DEIB	60.2	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.49	105	
BH01	60.6	B	239	F-MDOLPB-CTL6	60.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	29.06	105	
BH01	60.8	D	240	F-XDOLPB-4FUI	60.8	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.11	105	
BH01	61.3	B	242	F-KJQLPB-FIXC	61.3	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	35.56	105	
BH01	61.5	B	243	F-YJQLPB-U8WC	61.5	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.97	105	
BH01	61.8	B	244	F-QKQLPB-YYKG	61.8	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.35	105	
BH01	62.1	C	245	F-SKQLPB-IZ76	62.1	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.91	105	
BH01	62.4	D	246	F-TKQLPB-3JD9	62.4	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	31.53	105	
BH01	62.6	C	248	F-DURLPB-D3ED	62.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	29.35	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	62.9	B	249	F-0XRLPB-RQD4	62.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	30.91	105	
BH01	63.3	B	250	F-PXRLPB-0CG2	63.3	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	32.48	105	
BH01	63.7	B	251	F-6ZRLPB-NXY4	63.7	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	27.74	105	
BH01	64.1	B	253	F-2JULPB-84O5	64.1	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	44.39	105	
BH01	64.5	B	254	F-UJULPB-8NFY	64.5	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	29.59	105	
BH01	64.9	B	255	F-BKULPB-DT7Z	64.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	31.41	105	
BH01	65.3	B	256	F-UKULPB-ZVZQ	65.3	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	27.13	105	
BH01	65.6	C	258	F-S9WLPB-KGG6	65.8	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.75	105	
BH01	65.6	C	258	F-S9WLPB-KGG6	65.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.62	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	66.26	C	260	F-MBWLPB-L8RI	66.26	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.84	105	
BH01	66.51	B	261	F-6CWLPB-35T8	66.8	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.34	105	
BH01	66.51	B	261	F-6CWLPB-35T8	66.51	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	27.67	105	
BH01	67	D	263	F-VTXLPB-BFQ7	67	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	40.8	105	
BH01	67.1	B	285	F-KMIMPB-JV33	74.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	17.29	105	
BH01	67.85	B	264	F-FVZLPB-4H3R	67.95	Brown and dark brown gravelly very silty SAND.	24.98	105	
BH01	68.15	B	265	F-DWZLPB-X7AX	68.15	Brown and dark brown gravelly very silty SAND.	23.8	105	
BH01	68.5	B	266	F-UWZLPB-J4TS	68.65	Brown and dark brown gravelly very silty SAND.	20.33	105	
BH01	69.05	B	268	F-CX0MPB-49D4	69.05	Brown and dark brown gravelly very silty SAND.	21.02	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	69.5	B	269	F-M11MPB-1OWT	69.5	Brown and dark brown gravelly very silty SAND.	20.55	105	
BH01	69.7	B	270	F-V61MPB-1QBL	69.75	Dark grey and grey very clayey SAND.	20.19	105	
BH01	69.7	B	270	F-V61MPB-1QBL	69.7	Dark grey and grey very clayey SAND.	19.66	105	
BH01	69.9	B	271	F-671MPB-EIX5	69.9	Dark grey and grey very clayey SAND.	20.28	105	
BH01	70.5	B	273	F-Y86MPB-1R8D	70.5	Recovered as brown silty gravelly SAND.	19.34	105	
BH01	70.9	B	274	F-I96MPB-XUZY	70.9	Stiff dark grey and grey mottled slightly sandy CLAY.	18.8	105	
BH01	71.3	D	275	F-W96MPB-C1KX	71.3	Stiff dark grey and grey mottled slightly sandy CLAY.	18.43	105	
BH01	71.8	B	277	F-PV7MPB-2L5G	71.8	Stiff dark grey and grey mottled slightly sandy CLAY.	19.42	105	
BH01	72.6	D	279	F-D69MPB-VOI1	72.7	Stiff dark grey and grey mottled slightly sandy CLAY.	14.58	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH01	74	B	281	F-W8GMPB-GL0C	74.15	Stiff dark greyish brown slightly gravelly CLAY.	18.92	105	
BH01	74.25	B	282	F-CAGMPB-1Z77	74.4	Stiff dark greyish brown slightly gravelly CLAY.	19.66	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	0	B	1	F-7RM7RB-36HK	0	Yellowish brown slightly gravelly SAND.	23.57	105	
BH08	1	B	3	F-1AO7RB-IA4Q	1	Yellowish brown slightly gravelly SAND.	18.11	105	
BH08	2	B	5	F-1EP7RB-4EUM	2	Yellowish brown slightly gravelly SAND.	28.94	105	
BH08	2.8	B	6	F-17Y7RB-XUEC	3	Very dense greyish brown slightly gravelly slightly silty SAND.	24.44	105	
BH08	4.3	B	7	F-EG08RB-T1I9	4.6	Very dense greyish brown slightly gravelly slightly silty SAND.	19.9	105	
BH08	5.3	B	8	F-A818RB-T0I1	5.4	Very dense greyish brown slightly gravelly slightly silty SAND.	23.97	105	
BH08	5.5	B	9	F-X818RB-E5RE	5.7	Very dense greyish brown slightly gravelly slightly silty SAND.	22.09	105	
BH08	5.8	B	10	F-IS18RB-PCPA	5.9	Very dense greyish brown slightly gravelly slightly silty SAND.	21.11	105	
BH08	6.1	B	11	F-4T18RB-93PZ	6.2	Very dense greyish brown slightly gravelly slightly silty SAND.	20.42	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	6.8	B	12	F-FE48RB-W7ZH	6.9	Very dense greyish brown slightly gravelly slightly silty SAND.	12.9	105	
BH08	7	B	13	F-4F48RB-59RD	7.2	Very dense greyish brown slightly gravelly slightly silty SAND.	20.43	105	
BH08	8.3	B	14	F-N998RB-CV18	8.5	Very dense greyish brown slightly gravelly slightly silty SAND.	20.62	105	
BH08	9.3	B	15	F-D8A8RB-S5RD	9.4	Very dense greyish brown slightly gravelly slightly silty SAND.	22.41	105	
BH08	9.5	B	16	F-09A8RB-YMDH	9.7	Very dense greyish brown slightly gravelly slightly silty SAND.	22.61	105	
BH08	10	B	18	F-SPA8RB-QOWS	10	Very dense greyish brown slightly gravelly slightly silty SAND.	22	105	
BH08	10	B	18	F-SPA8RB-QOWS	10.2	Very dense greyish brown slightly gravelly slightly silty SAND.	17.8	105	
BH08	10.8	B	19	F-ILD8RB-OKDT	10.9	Very dense greyish brown slightly gravelly slightly silty SAND.	22.01	105	
BH08	11.1	B	20	F-BMD8RB-5EFM	11.4	Very dense greyish brown slightly gravelly slightly silty SAND.	22.99	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	12.3	B	21	F-VNG8RB-104K	12.5	Very dense greyish brown slightly gravelly slightly silty SAND.	14.71	105	
BH08	12.7	B	22	F-4RG8RB-95OI	12.9	Very dense greyish brown slightly gravelly slightly silty SAND.	19.08	105	
BH08	13.3	B	23	F-DWH8RB-3IMK	13.6	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	21.21	105	
BH08	14	B	25	F-9OI8RB-P88T	14.2	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	23.39	105	
BH08	14	B	25	F-9OI8RB-P88T	14	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	23.6	105	
BH08	14.8	B	26	F-QDL8RB-UGRH	14.9	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	19.73	105	
BH08	15.2	B	27	F-MEL8RB-CZOS	15.3	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	22.3	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	16.3	B	28	F-F7Q8RB-I73D	16.5	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	32.39	105	
BH08	17.25	AMAL	1	Borehole Sample_BH08_01	17.25	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	13.46	105	
BH08	17.32	C	31	F-4FR8RB-ETF7	17.32	Firm greyish brown slightly gravelly slightly sandy CLAY.	14.37	105	
BH08	17.56	B	32	F-DGR8RB-1C6C	17.56	Firm greyish brown slightly gravelly slightly sandy CLAY.	16.31	105	
BH08	17.8	C	33	F-PJS8RB-8Q3W	17.8	Firm greyish brown slightly gravelly slightly sandy CLAY.	19.35	105	
BH08	18.3	D	34	F-FAT8RB-6MRL	18.3	Firm greyish brown slightly gravelly slightly sandy CLAY.	18.84	105	
BH08	18.35	C	35	F-YAT8RB-9M89	18.35	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.26	105	
BH08	18.55	C	36	F-XBT8RB-HW0V	18.55	Firm greyish brown slightly gravelly slightly sandy CLAY.	18.22	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	18.55	C	36	F-XBT8RB-HW0V	18.75	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.92	105	
BH08	18.85	C	39	F-IFU8RB-0ME1	18.85	Firm greyish brown slightly gravelly slightly sandy CLAY.	18	105	
BH08	19.05	C	40	F-YFU8RB-1KGZ	19.25	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.67	105	
BH08	19.05	C	40	F-YFU8RB-1KGZ	19.05	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.67	105	
BH08	19.8	B	42	F-3CX8RB-4663	20.3	Firm greyish brown slightly gravelly slightly sandy CLAY.	21.11	105	
BH08	20.8	B	43	F-BSY8RB-EQOW	20.95	Firm greyish brown slightly gravelly slightly sandy CLAY.	20.87	105	
BH08	21.1	B	45	F-E0Z8RB-SJSS	21.1	Firm greyish brown slightly gravelly slightly sandy CLAY.	19.59	105	
BH08	21.3	B	46	F-7B09RB-IQBU	21.4	Firm greyish brown slightly gravelly slightly sandy CLAY.	15.24	105	
BH08	21.6	C	48	F-7D09RB-7PKO	21.6	Firm greyish brown slightly gravelly slightly sandy CLAY.	16.75	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	21.6	C	48	F-7D09RB-7PKO	21.79	Firm greyish brown slightly gravelly slightly sandy CLAY.	16.44	105	
BH08	21.94	C	50	F-VW09RB-C9R8	21.94	Firm greyish brown slightly gravelly slightly sandy CLAY.	23.23	105	
BH08	22.08	C	51	F-HX09RB-2Q1A	22.08	Firm greyish brown slightly gravelly slightly sandy CLAY.	20.46	105	
BH08	22.52	C	53	F-IT19RB-IW8H	22.52	Stiff greyish brown thinly laminated CLAY.	19.57	105	
BH08	22.52	C	53	F-IT19RB-IW8H	22.72	Stiff greyish brown thinly laminated CLAY.	21.92	105	
BH08	23.3	B	55	F-8V69RB-0P4X	23.6	Stiff greyish brown thinly laminated CLAY.	23.53	105	
BH08	24.52	B	57	F-4S89RB-6ZQD	24.72	Stiff greyish brown thinly laminated CLAY.	19.68	105	
BH08	24.52	B	57	F-4S89RB-6ZQD	24.52	Stiff greyish brown thinly laminated CLAY.	24.42	105	
BH08	24.96	C	60	F-4I99RB-O14E	24.96	Stiff greyish brown thinly laminated CLAY.	20.94	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	25.16	C	61	F-OI99RB-VU2B	25.16	Stiff greyish brown thinly laminated CLAY.	20.74	105	
BH08	25.3	B	62	F-RXA9RB-H2WH	25.3	Stiff greyish brown thinly laminated CLAY.	22.12	105	
BH08	25.47	C	63	F-OYA9RB-RE5M	25.47	Stiff greyish brown thinly laminated CLAY.	22.3	105	
BH08	25.67	C	64	F-OZA9RB-4TYG	25.67	Stiff greyish brown thinly laminated CLAY.	20.39	105	
BH08	25.8	D	65	F-NTB9RB-TD4Q	25.8	Stiff greyish brown thinly laminated CLAY.	19.83	105	
BH08	25.85	C	66	F-EUB9RB-HXKK	25.85	Stiff greyish brown thinly laminated CLAY.	22.22	105	
BH08	26.05	C	67	F-4VB9RB-QOP8	26.05	Stiff greyish brown thinly laminated CLAY.	18.32	105	
BH08	26.25	D	68	F-NVB9RB-YODY	26.25	Stiff greyish brown thinly laminated CLAY.	20.25	105	
BH08	26.8	B	69	F-UEG9RB-LQ1G	27.05	Stiff greyish brown thinly laminated CLAY.	15.59	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	27.8	B	70	F-19I9RB-JK73	27.85	Very stiff greyish brown slightly gravelly CLAY.	18.17	105	
BH08	27.9	B	71	F-JAI9RB-28L3	28.1	Very stiff greyish brown slightly gravelly CLAY.	14.85	105	
BH08	28.3	B	72	F-O9J9RB-SIFY	28.6	Very stiff greyish brown slightly gravelly CLAY.	17.29	105	
BH08	28.89	C	74	F-9VJ9RB-WDXX	28.89	Very stiff greyish brown slightly gravelly CLAY.	10.8	105	
BH08	29.1	C	75	F-6XJ9RB-AIKS	29.1	Very stiff greyish brown slightly gravelly CLAY.	24.11	105	
BH08	29.26	D	76	F-XXJ9RB-COJ2	29.26	Very stiff greyish brown slightly gravelly CLAY.	6.18	105	
BH08	29.5	B	78	F-ZEM9RB-SIW8	29.65	Very stiff greyish brown slightly gravelly CLAY.	19.21	105	
BH08	30.4	B	81	F-4ER9RB-9RMP	30.05	Stiff dark greyish brown gravelly sandy CLAY.	10.02	105	
BH08	31.5	C	84	F-GFS9RB-ZFQD	31.5	Stiff dark greyish brown gravelly sandy CLAY.	10.81	105	

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BH08	31.94	C	86	F-WGS9RB-H153	31.94	Stiff dark greyish brown gravelly sandy CLAY.	13.54	105	
BH08	32.4	C	89	F-IRT9RB-QDJK	32.4	Stiff dark greyish brown gravelly sandy CLAY.	12.24	105	
BH08	32.64	C	90	F-YRT9RB-1UDY	32.64	Stiff dark greyish brown gravelly sandy CLAY.	12.5	105	
BH08	33.04	B	92	F-1TT9RB-BU9Q	32.89	Stiff dark greyish brown gravelly sandy CLAY.	12.93	105	
BH08	33.04	B	92	F-1TT9RB-BU9Q	33.04	Stiff dark greyish brown gravelly sandy CLAY.	13.39	105	
BH08	33.3	B	93	F-FGV9RB-AAIS	33.5	Stiff dark greyish brown gravelly sandy CLAY.	18.49	105	
BH08	33.3	B	93	F-FGV9RB-AAIS	33.5	Stiff dark greyish brown gravelly sandy CLAY.	18.39	105	
BH08	33.3	B	93	F-FGV9RB-AAIS	33.3	Stiff dark greyish brown gravelly sandy CLAY.	12.66	105	
BH08	34.1	B	94	F-ZGV9RB-E6Q7	34.4	Stiff dark greyish brown gravelly sandy CLAY.	24.44	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	34.8	B	95	F-ZQW9RB-MJCZ	34.96	Stiff dark greyish brown gravelly sandy CLAY.	16.35	105	
BH08	34.8	B	95	F-ZQW9RB-MJCZ	34.8	Stiff dark greyish brown gravelly sandy CLAY.	21.8	105	
BH08	35.05	C	96	F-JRW9RB-W6I3	35.05	Stiff dark greyish brown gravelly sandy CLAY.	16.15	105	
BH08	35.36	B	97	F-8SW9RB-HCBM	35.5	Dense to very dense locally medium dense brown silty SAND.	24.83	105	
BH08	35.8	B	98	F-06Y9RB-V5CV	36.2	Dense to very dense locally medium dense brown silty SAND.	19.46	105	
BH08	35.8	B	98	F-06Y9RB-V5CV	36	Dense to very dense locally medium dense brown silty SAND.	19.55	105	
BH08	36.4	B	100	F-STY9RB-GHRH	36.4	Dense to very dense locally medium dense brown silty SAND.	22.83	105	
BH08	36.4	B	100	F-STY9RB-GHRH	36.6	Dense to very dense locally medium dense brown silty SAND.	23.77	105	
BH08	36.8	B	101	F-DJ1ARB-GELF	37	Dense to very dense locally medium dense brown silty SAND.	24.82	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	37.6	B	102	F-3L1ARB-6TFJ	38	Dense to very dense locally medium dense brown silty SAND.	23.49	105	
BH08	38.3	B	103	F-AH3ARB-NBYI	38.5	Dense to very dense locally medium dense brown silty SAND.	18.09	105	
BH08	38.8	B	105	F-BI3ARB-BI6Z	39.5	Dense to very dense locally medium dense brown silty SAND.	26.05	105	
BH08	41.3	B	107	F-ZE6ARB-YNMA	41.4	Dense to very dense locally medium dense brown silty SAND.	18	105	
BH08	41.6	B	108	F-RF6ARB-Q2R4	41.9	Dense to very dense locally medium dense brown silty SAND.	24.64	105	
BH08	42.8	B	109	F-799ARB-SVJI	42.9	Dense to very dense locally medium dense brown silty SAND.	23.29	105	
BH08	43.3	B	110	F-HE9ARB-XSZJ	43.4	Dense to very dense locally medium dense brown silty SAND.	23.41	105	
BH08	43.8	B	111	F-TDCARB-7UET	43.9	Dense to very dense locally medium dense brown silty SAND.	18.24	105	
BH08	44.2	B	113	F-UJCARB-ASYU	44.25	Dense to very dense locally medium dense brown silty SAND.	17.79	105	

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BH08	44.6	B	115	F-3ADARB-65SK	44.6	Dense to very dense locally medium dense brown silty SAND.	23.6	105	
BH08	44.6	B	115	F-3ADARB-65SK	44.7	Dense to very dense locally medium dense brown silty SAND.	22.43	105	
BH08	45.3	B	116	F-JXDARB-UJD8	45.4	Dense to very dense locally medium dense brown silty SAND.	24.43	105	
BH08	45.7	B	117	F-NEFARB-3LGW	46	Dense to very dense locally medium dense brown silty SAND.	23.89	105	
BH08	46.8	B	118	F-3FLARB-V4TZ	47.1	Dense to very dense locally medium dense brown silty SAND.	19.09	105	
BH08	47.8	B	120	F-U6NARB-QCFS	47.9	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.5	105	
BH08	48.07	C	122	F-Z7NARB-AD8Z	48.07	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.87	105	
BH08	48.3	B	123	F-SGOARB-W3UY	48.5	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	10.58	105	
BH08	49.06	B	125	F-RZPARB-BXAM	49.3	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	12.12	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH08	50.57	B	127	F-XPTARB-6DTL	50.58	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	13.31	105	
BH08	50.97	B	128	F-XGVARB-RF7P	51.1	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	30.5	105	
BH08	50.97	B	128	F-XGVARB-RF7P	51.3	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	9.08	105	
BH08	51.55	B	130	F-HIVARB-RC2Q	51.55	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	8.02	105	
BH08	51.8	C	131	F-LKVARB-CGZS	51.8	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	9.34	105	
BH08	52.05	C	132	F-9LVARB-AVL7	52.05	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.98	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	1	B	2	F-7HB0QB-UN9V	1.35	Greyish brown slightly gravelly slightly silty SAND.	23.11	105	
BH09	1	B	2	F-7HB0QB-UN9V	1.1	Greyish brown slightly gravelly slightly silty SAND.	20.41	105	
BH09	4.2	AMAL	1	Borehole Sample_BH09_01	4.2	Greyish brown slightly gravelly slightly silty SAND.	24.29	105	
BH09	5	B	5	F-XBM0QB-ZMIN	5	Greyish brown slightly gravelly slightly silty SAND.	30.26	105	
BH09	5.35	D	6	F-FCM0QB-G68K	5.4	Firm dark brown slightly gravelly sandy SILT.	19.92	105	
BH09	5.7	B	8	F-QXO0QB-Q58C	5.7	Greyish brown slightly silty SAND.	18.88	105	
BH09	5.7	B	8	F-QXO0QB-Q58C	5.9	Greyish brown slightly silty SAND.	23.65	105	
BH09	6.5	B	9	F-ZXR0QB-S1QR	6.7	Greyish brown slightly silty SAND.	23.93	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	6.7	B	10	F-GYR0QB-EAO8	6.9	Greyish brown slightly silty SAND.	24.11	105	
BH09	8	B	11	F-9LU0QB-JYBF	8.35	Greyish brown slightly silty SAND.	15.74	105	
BH09	9	B	12	F-ERV0QB-ZKR0	9.3	Greyish brown slightly silty SAND.	20.42	105	
BH09	9	B	12	F-ERV0QB-ZKR0	9	Greyish brown slightly silty SAND.	25.94	105	
BH09	9.5	B	13	F-EIW0QB-3FBN	9.7	Greyish brown slightly silty SAND.	27.04	105	
BH09	9.7	B	14	F-LNW0QB-240W	9.9	Greyish brown slightly silty SAND.	25.78	105	
BH09	10.5	B	15	F-WDZ0QB-N69G	10.7	Greyish brown slightly silty SAND.	26.17	105	
BH09	10.7	B	16	F-IEZ0QB-I859	10.95	Greyish brown slightly silty SAND.	25.95	105	
BH09	12.1	B	18	F-HG21QB-GDJO	12.1	Firm brown slightly sandy CLAY.	15.68	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	12.3	B	19	F-ZG21QB-XA3I	12.3	Firm brown slightly sandy CLAY.	18.98	105	
BH09	12.3	B	19	F-ZG21QB-XA3I	12.5	Firm brown slightly sandy CLAY.	15.37	105	
BH09	12.5	B	20	F-EH21QB-VSKQ	12.7	Firm brown slightly sandy CLAY.	15.8	105	
BH09	12.7	B	21	F-UH21QB-L4XA	12.9	Firm brown slightly sandy CLAY.	18.35	105	
BH09	13.1	C	23	F-A541QB-1T48	13.1	Firm brown slightly sandy CLAY.	18.65	105	
BH09	13.1	C	23	F-A541QB-1T48	13.25	Firm brown slightly sandy CLAY.	20.74	105	
BH09	13.3	C	24	F-R541QB-08QB	13.3	Firm brown slightly sandy CLAY.	17.48	105	
BH09	13.6	B	26	F-8Y51QB-5BJQ	13.6	Firm brown slightly sandy CLAY.	16.53	105	
BH09	13.6	B	26	F-8Y51QB-5BJQ	13.6	Firm brown slightly sandy CLAY.	21.75	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	14	B	27	F-3N81QB-WNPS	14.1	Firm brown slightly sandy CLAY.	19.24	105	
BH09	14.12	C	28	F-ZN81QB-1I1U	14.3	Firm brown slightly sandy CLAY.	19.33	105	
BH09	14.5	B	30	F-PS91QB-BUGG	14.62	Firm locally thinly laminated dark grey CLAY.	21.92	105	
BH09	14.8	B	32	F-KU91QB-8ANP	14.96	Firm locally thinly laminated dark grey CLAY.	18.88	105	
BH09	14.8	B	32	F-KU91QB-8ANP	14.8	Firm locally thinly laminated dark grey CLAY.	18.64	105	
BH09	16.5	D	34	F-AZD1QB-ESLA	16.55	Firm locally thinly laminated dark grey CLAY.	16.5	105	
BH09	16.75	D	36	F-D1E1QB-VHMJ	16.75	Firm locally thinly laminated dark grey CLAY.	15.68	105	
BH09	17	B	37	F-CNE1QB-S9MH	17.15	Firm locally thinly laminated dark grey CLAY.	22.73	105	
BH09	17	B	37	F-CNE1QB-S9MH	17.4	Firm locally thinly laminated dark grey CLAY.	18.38	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	17.5	D	39	F-A0G1QB-LXUD	17.59	Firm locally thinly laminated dark grey CLAY.	19.74	105	
BH09	17.82	B	41	F-54G1QB-Z078	17.82	Firm locally thinly laminated dark grey CLAY.	16.57	105	
BH09	18.5	B	42	F-IQM1QB-S7GT	18.8	Firm locally thinly laminated dark grey CLAY.	20.97	105	
BH09	19.5	D	43	F-98O1QB-XKT4	19.56	Firm locally thinly laminated dark grey CLAY.	26.26	105	
BH09	19.76	C	45	F-U9O1QB-5UUY	19.76	Firm locally thinly laminated dark grey CLAY.	21.11	105	
BH09	19.96	C	46	F-8AO1QB-O5B8	19.96	Firm very dark grey sandy CLAY.	12.29	105	
BH09	20.16	B	47	F-QAO1QB-SR8H	20.16	Firm very dark grey sandy CLAY.	16.86	105	
BH09	20.5	D	49	F-GAP1QB-OR6V	20.54	Firm very dark grey sandy CLAY.	13.8	105	
BH09	20.76	B	51	F-8BP1QB-TTKS	20.85	Firm very dark grey sandy CLAY.	15.54	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	23	B	54	F-TTU1QB-2JXU	23	Firm very dark grey slightly gravelly slightly sandy CLAY.	13.41	105	
BH09	23	B	54	F-TTU1QB-2JXU	21.35	Firm very dark grey slightly gravelly slightly sandy CLAY.	20.83	105	
BH09	23.25	D	56	F-LUU1QB-ZYVP	23.1	Firm very dark grey slightly gravelly slightly sandy CLAY.	12.5	105	
BH09	23.25	D	56	F-LUU1QB-ZYVP	23.25	Firm very dark grey slightly gravelly slightly sandy CLAY.	15.56	105	
BH09	23.3	B	57	F-GQV1QB-86GP	23.85	Firm very dark grey slightly gravelly slightly sandy CLAY.	16.99	105	
BH09	24	B	58	F-C8X1QB-4P5R	24.15	Firm very dark grey slightly gravelly slightly sandy CLAY.	18.1	105	
BH09	24.27	D	60	F-U9X1QB-LJPX	24.27	Firm very dark grey slightly gravelly slightly sandy CLAY.	16.22	105	
BH09	24.32	B	61	F-FAX1QB-AX5J	24.4	Firm very dark grey slightly gravelly slightly sandy CLAY.	16.19	105	
BH09	24.48	B	62	F-BDY1QB-Z9K4	24.95	Firm very dark grey slightly gravelly slightly sandy CLAY.	18.5	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	25.5	B	63	F-NF02QB-TB6A	25.7	Firm very dark grey slightly gravelly slightly sandy CLAY.	18.19	105	
BH09	25.85	B	64	F-4G02QB-XPKV	25.9	Firm very dark grey slightly gravelly slightly sandy CLAY.	24.49	105	
BH09	26	B	65	F-XH02QB-YUKC	26.15	Firm very dark grey slightly gravelly slightly sandy CLAY.	17.99	105	
BH09	27.4	B	68	F-R862QB-E285	26.6	Dark grey and grey slightly sandy slightly clayey GRAVEL .	11	105	
BH09	27.5	B	69	F-DE72QB-AIQ2	27.5	Dark grey and grey slightly sandy slightly clayey GRAVEL .	10.08	105	
BH09	28.5	B	72	F-J992QB-IVTD	28.5	Reddish brown silty SAND.	12.77	105	
BH09	28.5	B	72	F-J992QB-IVTD	28.6	Reddish brown silty SAND.	24.11	105	
BH09	29	B	73	F-94C2QB-Q9XR	29.1	Reddish brown silty SAND.	13.63	105	
BH09	29	B	73	F-94C2QB-Q9XR	29	Reddish brown silty SAND.	9.15	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH09	29	B	73	F-94C2QB-Q9XR	29.45	Reddish brown silty SAND.	9.93	105	
BH09	30	B	74	F-MEG2QB-YDIJ	30	Reddish brown silty SAND.	27.3	105	
BH09	30.2	B	75	F-2FG2QB-QI9H	30.4	Reddish brown silty SAND.	23.48	105	
BH09	32	B	78	F-ZRO2QB-YI1L	32	Reddish brown silty SAND.	25.95	105	
BH09	32	B	78	F-ZRO2QB-YI1L	32.3	Reddish brown silty SAND.	26.43	105	
BH09	32.5	B	79	F-OFR2QB-3MQ3	32.7	Reddish brown silty SAND.	23.36	105	
BH09	32.5	B	79	F-OFR2QB-3MQ3	32.55	Reddish brown silty SAND.	19.45	105	
BH09	33	B	80	F-V3U2QB-VD3D	33.1	Reddish brown silty SAND.	17.01	105	
BH09	35	B	82	F-LR53QB-5H6W	35.1	Reddish brown silty SAND.	17.33	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	1.5	B	3	F-HVSMQB-DXHG	1.5	Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND.	18.19	105	
BH10	2	B	4	F-20UMQB-SSC0	2	Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND.	17.73	105	
BH10	2.5	B	5	F-7GXMQB-9R3U	2.5	Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND.	16.78	105	
BH10	3.5	B	6	F-DJ4NQB-W70D	3.5	Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND.	21.26	105	
BH10	6	B	8	F-91GNQB-K853	6.1	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	21.69	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	6.5	B	9	F-3FGNQB-O6IF	6.6	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	21.17	105	
BH10	7.5	B	10	F-ZVJNQB-9K2G	7.6	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	15.97	105	
BH10	7.7	B	11	F-KWJNQB-NYM3	8	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	23.05	105	
BH10	9	B	12	F-YLMNQB-OZTF	9.2	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	18.96	105	
BH10	9.45	B	13	F-TMMNQB-HOID	9.6	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	16.91	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	10.2	B	15	F-ITNNQB-2EU2	10.25	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	19.15	105	
BH10	10.5	PS	14	F-HOMNQB-UDLH	10.5	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	24.44	105	
BH10	10.7	B	17	F-HMONQB-SERL	10.95	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	14.94	105	
BH10	10.7	B	17	F-HMONQB-SERL	10.8	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	17.61	105	
BH10	11.5	B	18	F-B7VNQB-AWQP	11.7	Stiff thinly to thickly laminated dark grey clayey SILT.	17.26	105	
BH10	12	B	19	F-18VNQB-PM7Y	12.4	Stiff thinly to thickly laminated dark grey clayey SILT.	17.39	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	13	B	20	F-8QXNQB-KXOA	13.2	Stiff thinly to thickly laminated dark grey clayey SILT.	17.54	105	
BH10	13.5	B	21	F-RQXNQB-8CKV	13.8	Stiff thinly to thickly laminated dark grey clayey SILT.	17.37	105	
BH10	14	B	22	F-5LYNQB-QR7E	14.12	Stiff thinly laminated dark grey CLAY.	25.69	105	
BH10	14	B	22	F-5LYNQB-QR7E	14.1	Stiff thinly laminated dark grey CLAY.	24.49	105	
BH10	14.32	C	24	F-QMYNQB-PZLD	14.32	Stiff thinly laminated dark grey CLAY.	23.3	105	
BH10	15	B	25	F-080OQB-PIAA	15.05	Very stiff dark greyish brown slightly gravelly sandy CLAY.	28.19	105	
BH10	15.1	B	26	F-L80OQB-785L	15.3	Very stiff dark greyish brown slightly gravelly sandy CLAY.	30.03	105	
BH10	15.1	B	26	F-L80OQB-785L	15.1	Very stiff dark greyish brown slightly gravelly sandy CLAY.	27.89	105	
BH10	15.5	B	28	F-C51OQB-32K4	15.7	Very stiff dark greyish brown slightly gravelly sandy CLAY.	27.34	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	15.5	B	28	F-C51OQB-32K4	15.6	Very stiff dark greyish brown slightly gravelly sandy CLAY.	26.11	105	
BH10	16.5	B	30	F-WA3OQB-PCE1	16.7	Very stiff dark greyish brown slightly gravelly sandy CLAY.	20.06	105	
BH10	17	B	31	F-OB3OQB-6DFW	17.4	Very stiff dark greyish brown slightly gravelly sandy CLAY.	16.75	105	
BH10	17.5	B	32	F-EA4OQB-JVZP	17.6	Very stiff dark greyish brown slightly gravelly sandy CLAY.	18.06	105	
BH10	17.5	B	32	F-EA4OQB-JVZP	17.8	Very stiff dark greyish brown slightly gravelly sandy CLAY.	15	105	
BH10	18	B	34	F-KB5OQB-ME20	18.1	Very stiff dark greyish brown slightly gravelly sandy CLAY.	11.42	105	
BH10	18.2	B	35	F-BC5OQB-7YYX	18.2	Very stiff dark greyish brown slightly gravelly sandy CLAY.	10.89	105	
BH10	18.5	PS	23	F-PM4OQB-1W2F	18.5	Very stiff dark greyish brown slightly gravelly sandy CLAY.	11.79	105	
BH10	19	B	37	F-EA8OQB-S864	19.2	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	11.55	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	20	AMAL	179	Borehole Sample_BH10_01	20.02	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	12.68	105	
BH10	20	AMAL	179	Borehole Sample_BH10_01	20.7	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	12.95	105	
BH10	21	C	42	F-Z7FOQB-TIIA	21	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	15.08	105	
BH10	21.25	B	43	F-Z8FOQB-IUAQ	21.25	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	12.93	105	
BH10	21.51	B	44	F-0AFOQB-EGY8	21.68	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	17.07	105	
BH10	22.1	C	46	F-VRFOQB-OVKY	22.1	Very stiff greyish brown gravelly sandy silty CLAY.	11.26	105	
BH10	22.98	C	49	F-T3HOQB-977Y	22.98	Very stiff greyish brown gravelly sandy silty CLAY.	6.86	105	
BH10	23.23	C	50	F-UEHOQB-XV43	23.5	Very stiff greyish brown gravelly sandy silty CLAY.	7.92	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	23.23	C	50	F-UEHOQB-XV43	23.24	Very stiff greyish brown gravelly sandy silty CLAY.	6.42	105	
BH10	23.74	B	52	F-8IHOQB-QVMB	23.75	Very stiff greyish brown gravelly sandy silty CLAY.	11.16	105	
BH10	24.17	C	54	F-L2LOQB-BWTF	24.17	Very stiff greyish brown slightly gravelly sandy SILT.	17.45	105	
BH10	24.42	D	55	F-Q5LOQB-4QDY	24.42	Very stiff greyish brown slightly gravelly sandy SILT.	11.48	105	
BH10	24.57	B	57	F-L8LOQB-K41A	24.91	Very stiff greyish brown slightly gravelly sandy SILT.	10.51	105	
BH10	24.57	B	57	F-L8LOQB-K41A	24.57	Very stiff greyish brown slightly gravelly sandy SILT.	10.45	105	
BH10	25.31	B	59	F-6ILOQB-CUIZ	25.32	Very stiff greyish brown slightly gravelly sandy SILT.	11.92	105	
BH10	26.3	C	61	F-A0OOQB-8955	26.3	Very stiff greyish brown slightly gravelly sandy SILT.	11.01	105	
BH10	26.51	C	62	F-33OOQB-VA1D	26.51	Very stiff greyish brown slightly gravelly sandy SILT.	13.59	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	26.64	B	63	F-96OOQB-EST6	26.64	Very stiff greyish brown slightly gravelly sandy SILT.	10.75	105	
BH10	27.3	B	67	F-HQSOQB-5GBG	27.35	Very stiff greyish brown slightly gravelly sandy SILT.	12.56	105	
BH10	29.1	B	70	F-3TWOQB-4Z2A	29.15	Dark grey very gravelly clayey fine to coarse predominately coarse SAND.	10.47	105	
BH10	29.55	B	72	F-OA0PQB-IM06	29.55	Brownish grey gravelly fine to coarse SAND.	22.68	105	
BH10	30.44	B	74	F-ON3PQB-30ZV	30.64	Stiff brownish grey slightly gravelly sandy silty CLAY.	23.08	105	
BH10	30.88	C	76	F-EP3PQB-YLZL	30.88	Stiff brownish grey slightly gravelly sandy silty CLAY.	20.51	105	
BH10	32.06	B	80	F-9U5PQB-HVXI	32.45	Stiff brownish grey slightly gravelly sandy silty CLAY.	23.42	105	
BH10	32.06	B	80	F-9U5PQB-HVXI	32.15	Stiff brownish grey slightly gravelly sandy silty CLAY.	18.65	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	32.6	B	82	F-YKAPQB-OM75	32.8	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	23.76	105	
BH10	33.1	B	83	F-6EBPQB-R8IO	33.4	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	26.25	105	
BH10	33.6	B	84	F-T3DPQB-ISEP	33.8	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	27.47	105	
BH10	34	B	85	F-D4DPQB-SIYU	34.3	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	27.3	105	
BH10	35	B	86	F-5SGPQB-AVCM	35.4	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	33.75	105	
BH10	35.75	B	87	F-3TGPQB-ZWWK	36.3	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	34.73	105	
BH10	37	B	88	F-ICIPQB-30J7	37.2	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	33.08	105	
BH10	37.8	AMAL	180	Borehole Sample_BH10_02	37.8	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	27.11	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	38	PS	28	F-J0IPQB-BCSE	38	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	32.72	105	
BH10	38.15	B	91	F-ETJPQB-4JNS	38.2	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	24.92	105	
BH10	39.8	C	94	F-3MPPQB-CMQP	39.8	Stiff greyish brown slightly sandy CLAY.	15.28	105	
BH10	40.1	B	95	F-8RRPQB-R4LV	40.2	Very stiff thinly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	8.99	105	
BH10	41.15	B	96	F-WBTPQB-BXLH	41.3	Very stiff thinly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	12.74	105	
BH10	41.75	C	97	F-OYUPQB-969W	41.75	Very stiff dark brown slightly sandy very gravelly CLAY.	13	105	
BH10	41.92	B	98	F-DZUPQB-LMGM	42.1	Very stiff dark brown slightly sandy very gravelly CLAY.	9.6	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	41.92	B	98	F-DZUPQB-LMGM	42.22	Very stiff dark brown slightly sandy very gravelly CLAY.	9.08	105	
BH10	42.5	B	100	F-XLXPQB-8J65	42.8	Very stiff dark brown slightly sandy very gravelly CLAY.	9.43	105	
BH10	42.5	B	100	F-XLXPQB-8J65	43	Very stiff dark brown slightly sandy very gravelly CLAY.	8.9	105	
BH10	43.6	B	103	F-BJZPQB-57K9	43.8	Very stiff dark brown slightly sandy very gravelly CLAY.	9.34	105	
BH10	43.6	B	103	F-BJZPQB-57K9	44	Very stiff dark brown slightly sandy very gravelly CLAY.	11.82	105	
BH10	44.18	B	105	F-QKZPQB-X5J8	44.4	Very stiff dark brown slightly sandy very gravelly CLAY.	9.48	105	
BH10	44.5	B	106	F-YZ0QQB-KPV3	44.57	Very stiff dark brown slightly sandy very gravelly CLAY.	10	105	
BH10	44.5	B	106	F-YZ0QQB-KPV3	44.55	Very stiff dark brown slightly sandy very gravelly CLAY.	9.53	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	44.85	B	108	F-211QQB-YZG8	44.9	Very stiff dark brown slightly sandy very gravelly CLAY.	9.68	105	
BH10	45	B	109	F-R32QQB-XGKV	45.2	Very stiff dark brown slightly sandy very gravelly CLAY.	9.56	105	
BH10	45	B	109	F-R32QQB-XGKV	45.1	Very stiff dark brown slightly sandy very gravelly CLAY.	9.26	105	
BH10	45.4	C	111	F-252QQB-BGQE	45.4	Very stiff dark brown slightly sandy very gravelly CLAY.	9.07	105	
BH10	45.8	B	112	F-P52QQB-16JH	45.9	Very stiff dark brown slightly sandy very gravelly CLAY.	9.24	105	
BH10	45.8	B	112	F-P52QQB-16JH	46	Very stiff dark brown slightly sandy very gravelly CLAY.	9.5	105	
BH10	46.4	B	114	F-C72QQB-0YKL	46.45	Very stiff dark brown slightly sandy very gravelly CLAY.	9.5	105	
BH10	46.8	B	115	F-H83QQB-KRJ9	46.9	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.	24.67	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH10	47.6	B	119	F-OG3QQB-HUW4	47.6	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.	24	105	
BH10	47.6	B	119	F-OG3QQB-HUW4	47.95	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.	21.88	105	
BH10	48.7	B	121	F-1Y6QQB-0BMG	48.7	Reddish brown slightly gravelly clayey fine grained SAND.	15.82	105	
BH10	48.7	B	121	F-1Y6QQB-0BMG	49.1	Reddish brown slightly gravelly clayey fine grained SAND.	17.77	105	
BH10	49.5	B	123	F-VI8QQB-WYAB	49.9	Reddish brown slightly gravelly clayey fine grained SAND.	16.8	105	
BH10	50.3	B	124	F-ZJ8QQB-GEWD	50.4	Reddish brown extremely weak fine and medium grained SAND.	17.66	105	
BH10	50.85	B	127	F-LN8QQB-FWM5	50.95	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	17.41	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	1.5	B	1	F-GHT6QB-NEMB	1.7	Very dense greyish brown and brownish grey SAND.	25.98	105	
BH12	2	B	2	F-9GU6QB-TJJI	2.15	Very dense greyish brown and brownish grey SAND.	23.61	105	
BH12	3	B	3	F-W867QB-N3E5	3.3	Very dense greyish brown and brownish grey SAND.	24.43	105	
BH12	4.5	B	4	F-EU77QB-8UCW	4.8	Very dense greyish brown and brownish grey SAND.	25.35	105	
BH12	5.5	B	5	F-NS87QB-U431	5.7	Very dense greyish brown and brownish grey SAND.	25.86	105	
BH12	5.75	B	6	F-3V87QB-QS03	5.9	Very dense greyish brown and brownish grey SAND.	25.55	105	
BH12	6	B	7	F-IA97QB-I5MM	6.2	Very dense greyish brown and brownish grey SAND.	27.58	105	
BH12	6.25	B	8	F-2B97QB-CVHA	6.35	Very dense greyish brown and brownish grey SAND.	24.09	105	
BH12	7	B	9	F-ZCB7QB-RGYV	8.9	Very dense greyish brown and brownish grey SAND.	24.64	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	7	B	9	F-ZCB7QB-RGYV	7.4	Very dense greyish brown and brownish grey SAND.	24.96	105	
BH12	9.5	B	11	F-ZEI7QB-DM49	9.6	Very dense greyish brown and brownish grey SAND.	27.53	105	
BH12	10	B	12	F-IOI7QB-C6Q1	10.2	Very dense greyish brown and brownish grey SAND.	26.63	105	
BH12	10.3	B	13	F-O0J7QB-5KWJ	10.3	Very dense greyish brown and brownish grey SAND.	26.19	105	
BH12	11	B	14	F-BXK7QB-JF0I	11.2	Very dense greyish brown and brownish grey locally silty SAND.	25.79	105	
BH12	12.5	B	15	F-6XQ7QB-GSTD	12.75	Very dense greyish brown and brownish grey locally silty SAND.	23.08	105	
BH12	13.5	B	16	F-SHS7QB-D253	13.63	Very dense greyish brown and brownish grey locally silty SAND.	23.48	105	
BH12	13.75	B	17	F-PIS7QB-NERP	13.75	Very dense greyish brown and brownish grey locally silty SAND.	23.28	105	
BH12	14	B	18	F-KYS7QB-L5N4	14.1	Very dense greyish brown and brownish grey locally silty SAND.	31.42	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	14.2	B	20	F-JST7QB-ELGR	14.3	Very dense greyish brown and brownish grey locally silty SAND.	23.14	105	
BH12	15	B	21	F-DPW7QB-YXZ5	15.25	Very dense greyish brown and brownish grey locally silty SAND.	20.96	105	
BH12	16.5	B	22	F-KSZ7QB-WXBU	16.6	Very dense greyish brown and brownish grey locally silty SAND.	21.31	105	
BH12	17.5	B	23	F-RL38QB-40HK	17.7	Very dense greyish brown and brownish grey locally silty SAND.	25.48	105	
BH12	17.75	B	24	F-OM38QB-SRWA	17.9	Very dense greyish brown and brownish grey locally silty SAND.	17.89	105	
BH12	19.05	B	26	F-X688QB-S6Y5	19.15	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	23.68	105	
BH12	21	B	27	F-XBC8QB-XFCT	21.2	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	22.97	105	
BH12	21.5	B	28	F-ISE8QB-OO3V	21.6	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.44	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	21.65	C	29	F-4TE8QB-C2EF	21.65	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.62	105	
BH12	21.86	D	30	F-WUE8QB-2Z6P	21.86	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	15.3	105	
BH12	22	D	31	F-QAG8QB-3WLL	22	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	16.24	105	
BH12	22.05	C	32	F-FDG8QB-N3CW	22.05	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	16.31	105	
BH12	22.15	C	33	F-8FG8QB-THAR	22.15	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	17.42	105	
BH12	22.36	D	34	F-2HG8QB-7PYR	22.36	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.05	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	22.4	B	35	F-NMG8QB-ZU8H	22.45	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	25.1	105	
BH12	23	B	36	F-M1I8QB-KH6F	23.02	Dense to very dense locally medium dense SAND.	20.79	105	
BH12	23.05	B	37	F-E3I8QB-WM8Q	23.2	Dense to very dense locally medium dense SAND.	22.26	105	
BH12	24.67	B	39	F-Y9O8QB-GPNW	24.9	Dense to very dense locally medium dense SAND.	21.6	105	
BH12	25.6	C	41	F-A3P8QB-3FZ6	25.6	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	19.01	105	
BH12	25.8	C	42	F-R3P8QB-ECOM	25.8	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.71	105	
BH12	26	B	43	F-ADQ8QB-RP4L	26	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	20.94	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	26	B	43	F-ADQ8QB-RP4L	26.11	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	19.65	105	
BH12	26.19	C	44	F-95Q8QB-3MF8	26.19	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	20.23	105	
BH12	26.19	C	44	F-95Q8QB-3MF8	26.39	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	18.45	105	
BH12	26.59	B	46	F-S9R8QB-A8BH	26.59	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.62	105	
BH12	26.59	B	46	F-S9R8QB-A8BH	26.6	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.22	105	
BH12	26.76	C	47	F-CCR8QB-226M	26.96	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	19.2	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	26.76	C	47	F-CCR8QB-226M	26.76	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	18.02	105	
BH12	27	B	48	F-VJS8QB-CEE5	27.1	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.34	105	
BH12	27.27	C	49	F-IKS8QB-IZ1K	27.27	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	18.21	105	
BH12	27.36	D	50	F-TMS8QB-YLNP	27.36	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	15.75	105	
BH12	28	B	51	F-8SU8QB-1YAR	28.25	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	15.49	105	
BH12	29	B	52	F-XSV8QB-K16F	29.1	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	20.38	105	
BH12	29.2	C	53	F-PUV8QB-OGYH	29.2	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	20.62	105	
BH12	29.4	D	55	F-6VV8QB-WNW5	29.4	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	18.71	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	29.5	B	56	F-INW8QB-06J0	29.55	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	21.2	105	
BH12	29.6	C	57	F-7OW8QB-GTWC	29.8	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	19.81	105	
BH12	30	B	59	F-YZX8QB-4439	30.1	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	16.75	105	
BH12	30.2	B	61	F-Q0Y8QB-YTBB	30.4	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	20.34	105	
BH12	30.2	B	61	F-Q0Y8QB-YTBB	30.2	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	16.88	105	
BH12	30.5	B	62	F-KJY8QB-YKX1	30.55	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	21.89	105	
BH12	30.6	C	63	F-6KY8QB-WQXW	30.6	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	22.16	105	
BH12	30.8	D	64	F-4LY8QB-FW9U	30.8	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	19.98	105	
BH12	31.5	B	65	F-P539QB-2WJR	31.7	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	12.1	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	32.8	AMAL	1	Borehole sample_BH12	32.8	Brown slightly gravelly clayey SAND.	15.72	105	
BH12	33.2	B	69	F-6K59QB-CPJ2	33.2	Brown slightly gravelly clayey SAND.	23.05	105	
BH12	33.5	B	70	F-W179QB-CL6G	33.7	Brown slightly gravelly clayey SAND.	21.92	105	
BH12	34.5	B	71	F-MRA9QB-8I3Q	34.6	Brown slightly gravelly clayey SAND.	19.74	105	
BH12	34.86	B	72	F-6SA9QB-W0XE	34.9	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	12.67	105	
BH12	35.2	B	73	F-08C9QB-Q9N7	35.3	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	12.39	105	
BH12	35.4	C	74	F-3JC9QB-LB7B	35.4	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	12.38	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	35.6	D	75	F-4KC9QB-K380	35.6	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.17	105	
BH12	35.7	C	76	F-SKC9QB-4C4H	35.7	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	12.88	105	
BH12	35.9	D	77	F-CLC9QB-FDJP	35.9	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.42	105	
BH12	36	B	78	F-YCE9QB-D6IH	36.1	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.05	105	
BH12	36.2	C	79	F-LEE9QB-P2IJ	36.2	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.62	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	36.4	B	80	F-MFE9QB-IIB2	36.4	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.59	105	
BH12	36.5	B	81	F-93F9QB-Z1UO	36.6	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.68	105	
BH12	36.7	B	82	F-04F9QB-R3Y1	36.7	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.52	105	
BH12	36.9	B	83	F-Q4F9QB-I7H8	36.9	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.06	105	
BH12	37	D	85	F-ZII9QB-C5CW	37	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	17.28	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	37.04	C	86	F-NKI9QB-DMBJ	37.04	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.76	105	
BH12	37.24	C	88	F-MLI9QB-G70J	37.24	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.55	105	
BH12	38.5	B	90	F-2GL9QB-SNT1	38.85	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.94	105	
BH12	39.07	C	92	F-40N9QB-HGPB	39.07	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.74	105	
BH12	39.27	C	93	F-X0N9QB-EH76	39.28	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.09	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	39.72	C	95	F-E0O9QB-QM5V	39.92	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	15.52	105	
BH12	39.72	C	95	F-E0O9QB-QM5V	39.72	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14	105	
BH12	40.09	B	99	F-6CP9QB-1BXL	40.09	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.01	105	
BH12	40.29	C	98	F-UCP9QB-LG8U	40.29	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	15.14	105	
BH12	40.41	B	100	F-HGP9QB-EFG6	40.42	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.6	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH12	40.54	C	102	F-BJQ9QB-XZ4Y	40.54	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.22	105	
BH12	40.74	C	103	F-YJQ9QB-0UTG	40.74	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.8	105	
BH12	40.94	B	104	F-GKQ9QB-1XS6	40.94	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.17	105	
BH12	41.05	B	106	F-E7V9QB-K816	41.5	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.7	105	
BH12	41.85	B	107	F-18V9QB-I3PY	42.1	Very stiff brownish red slightly gravelly slightly sandy CLAY.	13.45	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	0.8	B	2	F-N7MTQB-CVZW	0.8	Very dense greyish brown to light brown slightly gravelly fine to coarse SAND.	22.57	105	
BH13	1.3	B	3	F-CANTQB-37FA	1.3	Very dense greyish brown to light brown slightly gravelly fine to coarse SAND.	15.98	105	
BH13	1.7	B	4	F-Y4OTQB-D9C6	1.8	Very dense greyish brown to light brown slightly gravelly fine to coarse SAND.	13.18	105	
BH13	2.1	B	5	F-EAPTQB-0RLT	2.3	Very dense greyish brown to light brown slightly gravelly fine to coarse SAND.	13.7	105	
BH13	3	B	6	F-A70UQB-XF71	3.5	Stiff and very stiff thinly laminated greyish brown slightly gravelly slightly sandy CLAY.	18.04	105	
BH13	4.3	B	8	F-NW2UQB-H58I	4.45	Greyish brown slightly gravelly fine SAND.	21.92	105	
BH13	5.5	B	10	F-P16UQB-16LX	5.7	Greyish brown slightly silty locally very silty fine SAND.	22.46	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	7	B	11	F-DLAUQB-QM94	7.6	Greyish brown slightly silty locally very silty fine SAND.	21.33	105	
BH13	8	B	12	F-2JBUQB-0JD0	8.5	Greyish brown slightly silty locally very silty fine SAND.	18.52	105	
BH13	8.5	B	13	F-MCCUQB-27RG	8.95	Greyish brown slightly silty locally very silty fine SAND.	25.56	105	
BH13	9.7	B	15	F-OXEUQB-V0LX	10	Greyish brown slightly silty locally very silty fine SAND.	21.66	105	
BH13	11	B	16	F-HAHUQB-WGEX	11.4	Greyish brown slightly silty locally very silty fine SAND.	26.37	105	
BH13	12.1	C	18	F-B1JUQB-T34T	12.1	Stiff dark greyish brown silty CLAY.	17.02	105	
BH13	12.37	C	19	F-P2JUQB-6O2A	12.37	Stiff dark greyish brown silty CLAY.	18.68	105	
BH13	12.64	C	20	F-F5JUQB-6313	12.64	Stiff dark greyish brown silty CLAY.	15.23	105	
BH13	12.9	B	21	F-36JUQB-1ZH9	12.9	Stiff dark greyish brown silty CLAY.	16.5	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	13.14	B	23	F-3YKUQB-56D1	13.14	Stiff dark greyish brown silty CLAY.	24.32	105	
BH13	13.33	C	24	F-SYKUQB-LN1A	13.33	Stiff dark greyish brown silty CLAY.	17.47	105	
BH13	13.5	B	25	F-B0MUQB-8B44	13.5	Stiff dark greyish brown silty CLAY.	18.32	105	
BH13	13.85	C	26	F-W2MUQB-BQ6Y	13.85	Stiff dark greyish brown silty CLAY.	20.97	105	
BH13	14	B	27	F-V4SUQB-2XAO	14.3	Stiff dark greyish brown silty CLAY.	19.22	105	
BH13	15.1	B	28	F-84TUQB-PA2R	15.4	Stiff dark greyish brown silty CLAY.	19.86	105	
BH13	15.5	B	29	F-95UUQB-ZIWW	15.55	Stiff thinly laminated dark greyish brown CLAY.	21.36	105	
BH13	15.6	C	30	F-W5UUQB-Y4J8	15.6	Stiff thinly laminated dark greyish brown CLAY.	18.85	105	
BH13	15.8	B	31	F-F6UUQB-PXGN	15.8	Stiff thinly laminated dark greyish brown CLAY.	18.52	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	16	B	32	F-JWUUQB-P38I	16	Stiff thinly laminated dark greyish brown CLAY.	21.62	105	
BH13	16.16	C	33	F-LXUUQB-MS2U	16.16	Stiff thinly laminated dark greyish brown CLAY.	18.32	105	
BH13	16.16	C	33	F-LXUUQB-MS2U	16.4	Stiff thinly laminated dark greyish brown CLAY.	25.31	105	
BH13	16.6	C	35	F-6YVUQB-TI6G	16.6	Stiff thinly laminated dark greyish brown CLAY.	25	105	
BH13	16.8	B	36	F-OYVUQB-GILV	16.8	Stiff thinly laminated dark greyish brown CLAY.	29.37	105	
BH13	17.05	C	38	F-S1XUQB-Q4B3	17.05	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	21.11	105	
BH13	17.25	C	39	F-E2XUQB-RWED	17.4	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	16.07	105	
BH13	17.5	B	40	F-NE0VQB-AJ9Y	17.9	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	13.11	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	18.2	B	41	F-2G0VQB-PR1W	18.5	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	14.24	105	
BH13	19	B	42	F-R31VQB-87S2	19.1	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	20.85	105	
BH13	19.2	C	43	F-841VQB-RM3G	19.4	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	24.38	105	
BH13	19.7	B	45	F-FU1VQB-CLJ3	19.7	Stiff thinly laminated dark greyish brown CLAY.	23.38	105	
BH13	20	C	46	F-XD2VQB-26RI	20	Stiff thinly laminated dark greyish brown CLAY.	26.63	105	
BH13	20.2	C	47	F-PE2VQB-HY22	20.2	Stiff thinly laminated dark greyish brown CLAY.	23.55	105	
BH13	20.5	B	48	F-NZ2VQB-IE0A	20.55	Stiff thinly laminated dark greyish brown CLAY.	24.59	105	
BH13	20.8	C	50	F-T03VQB-HOMW	20.8	Stiff thinly laminated dark greyish brown CLAY.	26.58	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	21	B	51	F-YH5VQB-TYA4	21.3	Stiff thinly laminated dark greyish brown CLAY.	28.38	105	
BH13	21.5	D	52	F-GI5VQB-0U5O	21.5	Stiff thinly laminated dark greyish brown CLAY.	14.75	105	
BH13	21.8	B	53	F-TB9VQB-470O	22	Stiff thinly laminated dark greyish brown CLAY.	25.9	105	
BH13	22.3	B	54	F-EO9VQB-Z6WI	22.4	Brown slightly gravelly SAND.	18.24	105	
BH13	23	B	57	F-UJBVQB-MT7P	23.4	Brown slightly gravelly SAND.	18.57	105	
BH13	24.9	B	58	F-FZFVQB-B2PO	25	Stiff dark brown thinly laminated slightly gravelly CLAY.	26.42	105	
BH13	26	B	60	F-USGVQB-VNHM	26	Very stiff dark greyish brown CLAY .	24.84	105	
BH13	26.1	C	61	F-JTGVQB-SDXA	26.1	Very stiff dark greyish brown CLAY .	21.18	105	
BH13	26.3	C	62	F-8UGVQB-DBA2	26.45	Very stiff dark greyish brown CLAY .	20.59	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	26.5	B	63	F-ARHVQB-B9OY	26.55	Very stiff dark greyish brown CLAY .	23.7	105	
BH13	26.7	C	64	F-5THVQB-8CR3	26.7	Very stiff dark greyish brown CLAY .	23.08	105	
BH13	27	D	66	F-RLIVQB-MFD2	27	Very stiff dark greyish brown CLAY .	23.8	105	
BH13	27.15	C	68	F-ONIVQB-WTMC	27.15	Very stiff dark greyish brown CLAY .	22.71	105	
BH13	27.33	D	69	F-COIVQB-0THR	27.35	Very stiff dark greyish brown CLAY .	21.08	105	
BH13	27.5	B	70	F-9PJVQB-SAZA	27.6	Greyish brown silty fine SAND.	24.28	105	
BH13	27.65	B	71	F-UUJVQB-J4E2	27.8	Greyish brown silty fine SAND.	20.82	105	
BH13	28.5	B	72	F-D4MVQB-DRGM	29.2	Greyish brown silty fine SAND.	23.95	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH13	28.5	B	72	F-D4MVQB-DRGM	29.5	Greyish brown silty fine SAND.	19.39	105	
BH13	30	B	73	F-BSTVQB-V5OX	30.12	Greyish brown silty fine SAND.	22.35	105	
BH13	31.19	C	75	F-DYVVQB-0VS1	31.19	Very stiff light reddish brown gravelly slightly sandy silty CLAY.	9.17	105	
BH13	32.02	C	84	F-BE0WQB-HXOM	32.02	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE.	17.22	105	
BH13	32.22	C	85	F-5K0WQB-YWG1	32.22	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE.	18.59	105	
BH13	33	B	90	F-7G7WQB-GFDW	33.13	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE.	17.75	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	0	B	1	F-8IQZQB-AHDT	0	Yellowish brown gravelly SAND.	25.18	105	
BH20	1	B	3	F-8CTZQB-8YRH	1	Greyish brown to yellowish brown gravelly to very gravelly SAND.	7.91	105	
BH20	2.6	B	6	F-BEF0RB-QN68	2.7	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	8.7	105	
BH20	4.1	B	7	F-ETJ0RB-4HK5	4.2	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	8.21	105	
BH20	4.6	D	8	F-JUK0RB-HYZ0	4.6	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	11.89	105	
BH20	4.75	D	9	F-BVK0RB-3TYS	4.8	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	23.9	105	
BH20	5.2	B	10	F-CZL0RB-9ITK	5.3	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	17.68	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	5.2	B	10	F-CZL0RB-9ITK	5.25	Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL.	17.79	105	
BH20	5.6	B	12	F-3SN0RB-ENM5	5.8	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18.94	105	
BH20	6.6	B	13	F-TMR0RB-XAQZ	6.75	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18.19	105	
BH20	7.1	B	14	F-ONR0RB-WT6M	7.5	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.16	105	
BH20	7.6	D	15	F-8NT0RB-A4PT	7.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18.39	105	
BH20	7.65	B	16	F-VOT0RB-3JZ9	7.65	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.84	105	
BH20	7.65	B	16	F-VOT0RB-3JZ9	7.85	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.08	105	
BH20	8.1	B	18	F-OKU0RB-LA0S	8.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.53	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	8.4	D	20	F-KLU0RB-NTTG	8.4	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.35	105	
BH20	8.6	B	21	F-ZAV0RB-UF77	8.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18.73	105	
BH20	8.6	B	21	F-ZAV0RB-UF77	8.7	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.09	105	
BH20	8.9	C	23	F-5CV0RB-MBH5	8.9	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.33	105	
BH20	9.1	B	24	F-D0W0RB-TZG1	9.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.31	105	
BH20	9.1	B	24	F-D0W0RB-TZG1	9.1	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.28	105	
BH20	10.1	B	26	F-XTY0RB-80KN	10.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.49	105	
BH20	10.5	B	27	F-OUY0RB-9XK8	10.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.36	105	
BH20	11.1	B	28	F-IZZ0RB-EBZH	11.1	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	19.48	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	11.2	B	29	F-L101RB-A9ZO	11.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.97	105	
BH20	11.4	C	30	F-H201RB-BS1Z	11.4	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.65	105	
BH20	11.6	B	31	F-WL01RB-M5Z9	11.77	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.97	105	
BH20	11.6	B	31	F-WL01RB-M5Z9	11.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	20.06	105	
BH20	12.1	D	33	F-BX11RB-7EZW	12.1	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	19.43	105	
BH20	12.29	C	35	F-OZ11RB-UJXA	12.29	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.55	105	
BH20	12.6	B	36	F-SK21RB-FVVB	12.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18.05	105	
BH20	12.9	C	38	F-GN21RB-0RP2	12.9	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.21	105	
BH20	13.6	B	39	F-5551RB-PF03	13.8	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	19.23	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	14	B	40	F-8651RB-1AUE	14.3	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	20.8	105	
BH20	14.6	B	41	F-7A61RB-Y40Z	14.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	15.83	105	
BH20	14.85	C	43	F-OB61RB-16UR	14.85	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.71	105	
BH20	15.1	B	44	F-1Z61RB-VQKR	15.1	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.2	105	
BH20	15.37	C	46	F-R071RB-0FFF	15.37	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	14.74	105	
BH20	15.67	C	51	F-OY91RB-54RJ	15.67	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.54	105	
BH20	16.3	C	50	F-G4B1RB-UVZA	16.3	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.24	105	
BH20	16.3	C	50	F-G4B1RB-UVZA	16.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	15.61	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	17.06	AMAL	1	Borehole Sample_BH20_01	17.06	Very dense becoming dense greyish brown slightly silty SAND.	14.25	105	
BH20	17.6	B	53	F-PAE1RB-XX6Y	17.83	Very dense becoming dense greyish brown slightly silty SAND.	20.89	105	
BH20	18.6	B	54	F-01I1RB-U9TD	18.75	Very dense becoming dense greyish brown slightly silty SAND.	18.15	105	
BH20	19.6	B	55	F-SHJ1RB-E1EI	20	Very dense becoming dense greyish brown slightly silty SAND.	17.55	105	
BH20	20.1	B	56	F-QKK1RB-PKBD	20.5	Very dense becoming dense greyish brown slightly silty SAND.	18.27	105	
BH20	21.1	B	57	F-B6N1RB-U2ZX	21.4	Very dense becoming dense greyish brown slightly silty SAND.	19.59	105	
BH20	22.6	B	58	F-PBR1RB-EA2D	22.9	Very dense becoming dense greyish brown slightly silty SAND.	20.58	105	
BH20	23.6	B	59	F-62S1RB-E8WE	23.85	Very dense becoming dense greyish brown slightly silty SAND.	25.99	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	24.1	B	60	F-VUS1RB-OMWA	24.3	Very dense becoming dense greyish brown slightly silty SAND.	26.81	105	
BH20	25.1	B	61	F-04W1RB-WLIQ	25.3	Very dense becoming dense greyish brown slightly silty SAND.	23.95	105	
BH20	26.6	B	62	F-TUY1RB-R94V	26.9	Very dense becoming dense greyish brown slightly silty SAND.	26.4	105	
BH20	27.6	B	63	F-3XZ1RB-AE5O	27.85	Very dense becoming dense greyish brown slightly silty SAND.	23.6	105	
BH20	28.1	B	64	F-J512RB-3TMA	28.3	Very dense becoming dense greyish brown slightly silty SAND.	29.17	105	
BH20	29.1	B	65	F-1Q32RB-JLFU	29.3	Very dense becoming dense greyish brown slightly silty SAND.	23.46	105	
BH20	30.6	B	66	F-7UH2RB-RLFN	30.7	Very dense becoming dense greyish brown slightly silty SAND.	29.05	105	
BH20	31	B	67	F-FVH2RB-VSKM	31.2	Very dense becoming dense greyish brown slightly silty SAND.	26.29	105	
BH20	31.6	B	68	F-RLI2RB-DEOR	31.7	Very dense becoming dense greyish brown slightly silty SAND.	19.18	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	31.8	B	69	F-GMI2RB-54M3	32	Very dense becoming dense greyish brown slightly silty SAND.	24.15	105	
BH20	32.35	B	71	F-19J2RB-X3MZ	32.6	Very dense becoming dense greyish brown slightly silty SAND.	14.87	105	
BH20	32.35	B	71	F-19J2RB-X3MZ	32.4	Very dense becoming dense greyish brown slightly silty SAND.	22.61	105	
BH20	33.1	B	72	F-AZN2RB-4EAK	33.2	Very dense becoming dense greyish brown slightly silty SAND.	19.24	105	
BH20	33.5	B	73	F-03O2RB-MLV3	33.8	Very dense becoming dense greyish brown slightly silty SAND.	21.85	105	
BH20	34.6	B	74	F-E6R2RB-62JB	34.7	Very dense becoming dense greyish brown slightly silty SAND.	25.21	105	
BH20	35	B	75	F-77R2RB-5VVY	35.2	Very dense becoming dense greyish brown slightly silty SAND.	19.96	105	
BH20	35.6	B	76	F-L7S2RB-PIIW	35.8	Dense becoming medium dense greyish brown slightly silty SAND.	26.44	105	
BH20	35.8	B	77	F-H8S2RB-QDJZ	36	Dense becoming medium dense greyish brown slightly silty SAND.	19.62	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	36.1	B	78	F-IRS2RB-7I8Y	36.2	Dense becoming medium dense greyish brown slightly silty SAND.	25.16	105	
BH20	36.35	B	79	F-DSS2RB-ZVWN	36.5	Dense becoming medium dense greyish brown slightly silty SAND.	17.39	105	
BH20	37.1	B	80	F-VIV2RB-ZGIG	37.3	Dense becoming medium dense greyish brown slightly silty SAND.	22.88	105	
BH20	37.45	B	81	F-XJV2RB-IZZR	37.7	Dense becoming medium dense greyish brown slightly silty SAND.	25.39	105	
BH20	38.6	B	82	F-14Y2RB-IKL3	38.7	Dense becoming medium dense greyish brown slightly silty SAND.	22.1	105	
BH20	38.9	B	83	F-75Y2RB-LBY6	39.1	Dense becoming medium dense greyish brown slightly silty SAND.	22.53	105	
BH20	39.6	B	84	F-I0Z2RB-PNVF	39.8	Dense becoming medium dense greyish brown slightly silty SAND.	26.78	105	
BH20	39.85	B	85	F-H1Z2RB-LP9R	40	Dense becoming medium dense greyish brown slightly silty SAND.	19.01	105	
BH20	40.1	B	86	F-AKZ2RB-VAC4	40.3	Dense becoming medium dense greyish brown slightly silty SAND.	24.36	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	40.35	B	87	F-ZKZ2RB-DW4B	40.5	Dense becoming medium dense greyish brown slightly silty SAND.	18.46	105	
BH20	41.1	B	88	F-N723RB-5VBP	41.1	Dense becoming medium dense greyish brown slightly silty SAND.	24.21	105	
BH20	41.4	B	89	F-B823RB-DEGP	41.6	Dense becoming medium dense greyish brown slightly silty SAND.	19.89	105	
BH20	42.6	B	90	F-UU73RB-JQD5	42.9	Dense becoming medium dense greyish brown slightly silty SAND.	18.52	105	
BH20	43.6	B	91	F-CP83RB-SGEW	43.9	Dense becoming medium dense greyish brown slightly silty SAND.	24.49	105	
BH20	44.1	B	92	F-WA93RB-J18B	44.4	Dense becoming medium dense greyish brown slightly silty SAND.	25.93	105	
BH20	45.1	B	93	F-2KC3RB-ZH29	45.3	Dense becoming medium dense greyish brown slightly silty SAND.	21.86	105	
BH20	46.6	B	94	F-DBF3RB-7QL7	46.9	Dense becoming medium dense greyish brown slightly silty SAND.	25.42	105	
BH20	47.6	B	95	F-GWF3RB-NUDM	47.9	Dense becoming medium dense greyish brown slightly silty SAND.	23.15	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	48	B	96	F-GJG3RB-GAXP	48.3	Dense becoming medium dense greyish brown slightly silty SAND.	22.69	105	
BH20	49.1	B	97	F-R1L3RB-Z9TB	49.3	Dense becoming medium dense greyish brown slightly silty SAND.	22.01	105	
BH20	50.6	B	98	F-UON3RB-75VU	50.8	Dense becoming medium dense greyish brown slightly silty SAND.	23.68	105	
BH20	51.6	B	99	F-8QO3RB-C3ZF	51.9	Dense becoming medium dense greyish brown slightly silty SAND.	25.36	105	
BH20	52.1	B	100	F-OZP3RB-WFKC	52.18	Dense becoming medium dense greyish brown slightly silty SAND.	23.84	105	
BH20	53.1	B	101	F-UNS3RB-OSBO	53.4	Dense becoming medium dense greyish brown slightly silty SAND.	23.29	105	
BH20	54.6	B	102	F-J1W3RB-T2IM	54.9	Dense becoming medium dense greyish brown slightly silty SAND.	20.5	105	
BH20	55.5	B	103	F-P2X3RB-S82O	55.8	Dense becoming medium dense greyish brown slightly silty SAND.	25.88	105	
BH20	55.8	B	104	F-L4X3RB-DRPH	56.05	Dense becoming medium dense greyish brown slightly silty SAND.	20.91	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH20	56.18	B	105	F-32Y3RB-IPXA	56.4	Dense becoming medium dense greyish brown slightly silty SAND.	25.77	105	
BH20	57.1	B	106	F-4H34RB-8X4U	57.2	Dense becoming medium dense greyish brown slightly silty SAND.	26.1	105	
BH20	57.35	B	107	F-3I34RB-L7X3	57.5	Dense becoming medium dense greyish brown slightly silty SAND.	24.51	105	
BH20	58.6	B	108	F-9474RB-R6B7	58.7	Medium dense dark greyish brown SAND.	31.17	105	
BH20	59	B	109	F-N574RB-A1YN	59.3	Medium dense dark greyish brown SAND.	25.88	105	
BH20	59.6	B	110	F-WD84RB-Y8VW	59.8	Medium dense dark greyish brown SAND.	22.3	105	
BH20	59.8	B	111	F-ZE84RB-R6IY	60	Medium dense dark greyish brown SAND.	26.27	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	3.5	B	2	F-ZN97PB-GJ6E	3.5	Dense to very dense light brown to greyish brown slightly silty SAND.	23.1	105	
BH26	3.7	B	3	F-3P97PB-3VOD	3.85	Dense to very dense light brown to greyish brown slightly silty SAND.	28.9	105	
BH26	5	B	4	F-K1G7PB-SAQT	5	Dense to very dense light brown to greyish brown SAND.	29.4	105	
BH26	5.72	B	6	F-4GK7PB-TNGM	5.72	Dense to very dense light brown to greyish brown slightly silty SAND.	19.6	105	
BH26	9.5	B	7	F-TNW7PB-FBIQ	9.65	Greyish brown slightly silty SAND.	25.2	105	
BH26	9.75	B	8	F-OPW7PB-2BND	9.85	Greyish brown slightly silty SAND.	24.5	105	
BH26	10	B	9	F-SPW7PB-C0X7	10	Greyish brown slightly silty SAND.	23.8	105	
BH26	11	B	10	F-2H28PB-0B88	11.1	Dense to very dense, locally medium dense greyish brown slightly silty SAND.	18.3	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	11.23	B	11	F-RH28PB-IW82	11.35	Dense to very dense, locally medium dense greyish brown slightly silty SAND.	20.2	105	
BH26	13.5	B	12	F-M478PB-09X6	13.6	Firm greyish brown slightly sandy slightly silty CLAY.	21.1	105	
BH26	13.68	C	13	F-9578PB-AR1B	13.7	Firm greyish brown slightly sandy slightly silty CLAY.	20.6	105	
BH26	13.88	B	14	F-5678PB-Y5S3	13.9	Firm greyish brown slightly sandy slightly silty CLAY.	16.2	105	
BH26	14.09	B	15	F-L678PB-SSL5	14.15	Dense to very dense greyish brown slightly clayey SAND.	20.3	105	
BH26	16.5	B	16	F-I9D8PB-1FCR	16.6	Medium dense to dense brown slightly sandy locally clayey SILT.	22.7	105	
BH26	16.7	B	17	F-KCD8PB-8B1R	16.8	Medium dense to dense brown slightly sandy locally clayey SILT.	22.2	105	
BH26	16.9	B	18	F-XCD8PB-CJTO	17	Medium dense to dense brown slightly sandy locally clayey SILT.	24.9	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	17.1	D	19	F-ADD8PB-ZZOW	17.2	Medium dense to dense brown slightly sandy locally clayey SILT.	28.6	105	
BH26	17.3	B	20	F-6ED8PB-EDL5	17.4	Medium dense to dense brown slightly sandy locally clayey SILT.	26.5	105	
BH26	17.7	B	22	F-M3H8PB-8UE7	17.7	Stiff dark grey and grey sandy SILT.	21.2	105	
BH26	17.9	C	23	F-D5H8PB-P372	17.9	Stiff dark grey and grey sandy SILT.	19.6	105	
BH26	18.1	D	24	F-F6H8PB-KHUO	18.2	Stiff dark grey and grey sandy SILT.	22.7	105	
BH26	18.3	AMAL	1	Borehole Sample	18.3	Stiff dark grey and grey sandy SILT.	21.5	105	
BH26	18.5	B	26	F-GTH8PB-HWPF	18.63	Stiff dark grey and grey sandy SILT.	23.9	105	
BH26	18.78	B	27	F-QRH8PB-85TR	18.78	Stiff brown sandy SILT.	26.3	105	
BH26	18.88	D	28	F-1UJ8PB-6FRP	18.95	Stiff brown sandy SILT.	29.5	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	18.95	C	29	F-1VJ8PB-Z1HV	19.15	Stiff brown sandy SILT.	29.4	105	
BH26	19.35	B	31	F-FVJ8PB-4LYW	19.35	Stiff brown sandy SILT.	26	105	
BH26	20.15	B	33	F-5GO8PB-IWW7	20.15	Stiff brown slightly sandy slightly gravelly CLAY.	22.5	105	
BH26	20.3	C	35	F-RGO8PB-IOCW	20.3	Stiff brown slightly sandy slightly gravelly CLAY.	18.9	105	
BH26	20.5	B	36	F-H1P8PB-0FPB	20.5	Stiff brown slightly sandy slightly gravelly CLAY.	8.7	105	
BH26	20.5	B	36	F-H1P8PB-0FPB	20.65	Stiff brown slightly sandy slightly gravelly CLAY.	9.1	105	
BH26	21.1	C	38	F-9DR8PB-BH2I	21.1	Stiff brown slightly sandy slightly gravelly CLAY.	11.6	105	
BH26	21.5	B	40	F-NDR8PB-MAND	21.5	Stiff brown slightly sandy slightly gravelly CLAY.	9.3	105	
BH26	21.7	D	41	F-X0T8PB-EG7V	21.7	Stiff brown slightly sandy slightly gravelly CLAY.	13.8	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	21.75	C	42	F-B1T8PB-KSW9	21.75	Stiff brown slightly sandy slightly gravelly CLAY.	11.8	105	
BH26	22	D	44	F-YDV8PB-PKVI	22	Stiff brown slightly sandy slightly gravelly CLAY.	11.2	105	
BH26	22.1	B	45	F-LTX8PB-48D5	22.1	Stiff brown slightly sandy slightly gravelly CLAY.	15.2	105	
BH26	22.1	B	45	F-LTX8PB-48D5	22.4	Stiff brown slightly sandy slightly gravelly CLAY.	14.8	105	
BH26	22.6	B	47	F-0T19PB-JTWK	22.6	Stiff brown slightly sandy slightly gravelly CLAY.	18.1	105	
BH26	22.8	B	48	F-PT19PB-5IL8	22.8	Stiff brown slightly sandy slightly gravelly CLAY.	11.9	105	
BH26	23.4	AMAL	2	Borehole Sample1	23.4	Stiff brown slightly sandy slightly gravelly CLAY.	10.7	105	
BH26	23.5	B	49	F-CU19PB-1YIK	23.5	Very stiff brown slightly sandy slightly gravelly CLAY.	9.5	105	
BH26	23.8	B	52	F-IT59PB-BQTF	23.81	Very stiff brown slightly sandy slightly gravelly CLAY.	14.2		

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	23.8	B	52	F-IT59PB-BQTF	24	Very stiff brown slightly sandy slightly gravelly CLAY.	10.4	105	
BH26	23.8	B	52	F-IT59PB-BQTF	23.8	Very stiff brown slightly sandy slightly gravelly CLAY.	11.5		
BH26	24.1	C	53	F-YL69PB-299D	24.1	Very stiff brown slightly sandy slightly gravelly CLAY.	14.2	105	
BH26	24.38	B	54	F-3O69PB-XHSP	24.38	Very stiff brown slightly sandy slightly gravelly CLAY.	12.7	105	
BH26	24.5	B	55	F-74A9PB-VXCR	24.5	Very stiff brown slightly sandy slightly gravelly CLAY.	13.5		
BH26	24.5	B	55	F-74A9PB-VXCR	24.51	Very stiff brown slightly sandy slightly gravelly CLAY.	11.5		
BH26	24.75	B	56	F-25A9PB-WC41	24.75	Very stiff brown slightly sandy slightly gravelly CLAY.	17.2	105	
BH26	25	B	57	F-H5A9PB-YYAQ	25	Very stiff brown slightly sandy slightly gravelly CLAY.	15.9	105	
BH26	25.25	B	58	F-H7A9PB-1BAB	25.25	Very stiff brown slightly sandy slightly gravelly CLAY.	15.4	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	25.5	B	59	F-LNI9PB-H13U	25.65	Very stiff brown slightly sandy slightly gravelly CLAY.	18.1	105	
BH26	25.5	B	59	F-LNI9PB-H13U	25.5	Very stiff brown slightly sandy slightly gravelly CLAY.	16.2	105	
BH26	27.1	C	61	F-VLJ9PB-ZGHV	27.1	Very stiff dark grey CLAY.	23.3	105	
BH26	27.3	B	62	F-ZNJ9PB-87AK	27.3	Very stiff dark grey CLAY.	22.1	105	
BH26	28.5	B	63	F-3UO9PB-6TOA	28.65	Very dense grey slightly silty SAND.	22.3	105	
BH26	28.75	B	64	F-MUO9PB-GZFP	28.85	Very dense grey slightly silty SAND.	20.3	105	
BH26	31	B	65	F-45V9PB-MPTD	31.05	Very dense grey slightly silty SAND.	25.3	105	
BH26	31.4	B	67	F-S6V9PB-ZYWW	31.4	Very dense grey slightly silty SAND.	27.5	105	
BH26	31.6	B	68	F-27V9PB-DYQ2	31.6	Very dense grey slightly silty SAND.	25.8	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	32.5	B	69	F-134APB-YKRG	32.6	Dense to very dense brown slightly silty SAND.	27.9	105	
BH26	32.9	B	71	F-Z34APB-NQK7	32.9	Dark grey slightly silty SAND.	21.3	105	
BH26	33.1	AMAL	3	Borehole Sample2	33.1	Dark grey sandy SILT.	20.2	105	
BH26	34	B	72	F-NW8APB-MZUH	34.2	Dark grey sandy SILT.	24.7	105	
BH26	34.5	B	74	F-YX8APB-ZLBX	34.6	Dark grey sandy SILT.	26.6	105	
BH26	35	B	75	F-FNBAPB-2QW9	35	Brown very silty SAND.	32.5	105	
BH26	35.25	B	76	F-KPBAPB-AE67	35.25	Firm thinly laminated brown slightly sandy CLAY.	30.9	105	
BH26	35.6	C	77	F-9QBAPB-2LCW	35.6	Firm thinly laminated brown slightly sandy CLAY.	28.8	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	35.8	D	78	F-GQBAPB-8ZVD	35.8	Firm thinly laminated brown slightly sandy CLAY.	28.1	105	
BH26	36	B	79	F-5OHAPB-W3PQ	36	Firm brown slightly sandy slightly gravelly CLAY.	27.6	105	
BH26	36.2	C	80	F-TOHAPB-I64Z	36.2	Firm brown slightly sandy slightly gravelly CLAY.	26.4	105	
BH26	36.4	C	81	F-TPHAPB-4FAZ	36.4	Firm brown slightly sandy slightly gravelly CLAY.	21.4	105	
BH26	36.6	B	82	F-8QHAPB-QI3D	36.6	Firm brown slightly sandy slightly gravelly CLAY.	20	105	
BH26	37	B	83	F-DLJAPB-8UD4	37	Brown and greyish brown silty SAND.	15.8	105	
BH26	37.3	B	84	F-WLJAPB-CJF8	37.3	Brown and greyish brown silty SAND.	21	105	
BH26	37.6	D	85	F-8MJAPB-JC50	37.6	Brown and greyish brown silty SAND.	18.2	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH26	38	B	86	F-LNNAPB-NX9L	38	Stiff reddish brown mottled grey slightly sandy slightly gravelly CLAY.	19.5	105	
BH26	38.3	B	88	F-ZYTAPB-VLFW	38.3	Stiff reddish brown mottled grey slightly sandy slightly gravelly CLAY.	20.1	105	
BH26	39.5	D	89	F-REZAPB-LX5V	38.5	ASSUMED ZONE OF CORE LOSS..	19.3	105	
BH26	39.6	B	90	F-RMZAPB-IZND	39.6	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	15.6	105	
BH26	45.9	D	117	F-APGBPB-ZFXZ	45.9	Very weak thinly and thickly laminated dark reddish grey SILTSTONE.	6.4	105	
BH26	51.2	C	133	F-Y2TBPB-XBH2	51.71	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	5	105	
BH26	52.58	B	136	F-TXUBPB-4SHV	52.68	Medium strong thinly laminated dark reddish grey SILTSTONE.	24.7	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	2	B	2	F-QKUQPB-11H9	2.1	Light brown SAND.	19.7	105	
BH28	2.5	B	3	F-Y7WQPB-BXQO	2.5	Light brown slightly gravelly slightly silty SAND.	15.99	105	
BH28	2.7	B	5	F-LE2RPB-0M02	2.9	Light brown slightly gravelly slightly silty SAND.	15.6	105	
BH28	3	B	6	F-VB3RPB-EYQM	3	Light brown slightly gravelly slightly silty SAND.	15.63	105	
BH28	3.2	B	7	F-HC3RPB-RP1H	3.3	Light brown slightly gravelly slightly silty SAND.	15.01	105	
BH28	3.2	B	7	F-HC3RPB-RP1H	3.35	Light brown slightly gravelly slightly silty SAND.	12.95	105	
BH28	3.5	B	8	F-WL5RPB-O5IB	3.5	Light brown slightly gravelly slightly silty SAND.	24.77	105	
BH28	4.25	B	10	F-AK6RPB-48B0	4.25	Light brown slightly gravelly slightly silty SAND.	16.1	105	
BH28	4.5	H	12	F-DD7RPB-136U	4.8	Light brown slightly gravelly slightly silty SAND.	15.12	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	4.5	B	11	F-FQ8RPB-IXVS	4.5	Light brown slightly gravelly slightly silty SAND.	17.79	105	
BH28	5	B	12	F-FSARPB-7T20	5.4	Grey and dark grey slightly sandy subangular to rounded fine to coarse GRAVEL.	8	105	
BH28	5.7	B	14	F-NJCRPB-U1O4	5.9	Grey and dark grey slightly sandy subangular to rounded fine to coarse GRAVEL.	11.12	105	
BH28	6.5	B	15	F-CEIRPB-UU0B	6.5	Firm dark brown slightly gravelly slightly sandy CLAY.	9.77	105	
BH28	6.7	C	16	F-PEIRPB-ZZK5	6.7	Firm dark brown slightly gravelly slightly sandy CLAY.	16.63	105	
BH28	6.9	B	17	F-LGIRPB-EE3Z	6.9	Firm dark brown slightly gravelly slightly sandy CLAY.	19.76	105	
BH28	7.1	B	18	F-DFJRPB-TKVS	7.1	Firm dark brown slightly gravelly slightly sandy CLAY.	14.36	105	
BH28	7.3	C	19	F-WFJRPB-A0JH	7.3	Firm dark brown slightly gravelly slightly sandy CLAY.	23.12	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	7.5	D	20	F-NGJRPB-3YFX	7.5	Firm dark brown slightly gravelly slightly sandy CLAY.	19.55	105	
BH28	7.6	B	21	F-Q9KRPB-N0JP	7.6	Firm dark brown slightly gravelly slightly sandy CLAY.	18.62	105	
BH28	7.8	C	22	F-8AKRPB-TLHJ	7.8	Firm dark brown slightly gravelly slightly sandy CLAY.	28.61	105	
BH28	8	P	22	F-E1LRPB-KTGR	8	Firm dark brown slightly gravelly slightly sandy CLAY.	31.72	105	
BH28	8.1	B	24	F-W9LRPB-700I	8.15	Firm dark brown slightly gravelly slightly sandy CLAY.	30.22	105	
BH28	8.5	P	23	F-VJORPB-1NKO	8.5	Brown silty SAND.	18.31	105	
BH28	8.5	B	25	F-6ZMRPB-DPDS	8.55	Brown silty SAND.	24.32	105	
BH28	8.7	B	26	F-12NRPB-Q26C	8.7	Brown silty SAND.	14.7	105	
BH28	8.85	B	27	F-83NRPB-3JMU	8.95	Brown silty SAND.	14.39	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	9	P	24	F-HKORPB-35YJ	9	Brown silty SAND.	23.04	105	
BH28	9.25	B	29	F-QSNRPB-E3NZ	9.3	Stiff dark brown and dark grey slightly sandy CLAY.	16.64	105	
BH28	9.5	P	25	F-8LORPB-XKGI	9.5	Stiff dark brown and dark grey slightly sandy CLAY.	16.45	105	
BH28	9.6	C	31	F-VNORPB-XJOM	9.6	Stiff dark brown and dark grey slightly sandy CLAY.	18.27	105	
BH28	9.8	B	32	F-AOORPB-JLLA	9.8	Stiff dark brown and dark grey slightly sandy CLAY.	14.36	105	
BH28	10	P	26	F-MLORPB-4MAY	10	Stiff dark brown and dark grey slightly sandy CLAY.	15.38	105	
BH28	10.1	B	34	F-THPRPB-KN7K	10.15	Stiff dark brown and dark grey slightly sandy CLAY.	22.13	105	
BH28	10.25	B	35	F-0JPRPB-T6M9	10.3	Stiff dark brown and dark grey slightly sandy CLAY.	14.36	105	
BH28	10.5	P	27	F-R3QRPB-RPXL	10.5	Stiff dark brown and dark grey slightly sandy CLAY.	19.31	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	10.6	B	39	F-8JQRPB-C02I	10.6	Stiff dark brown and dark grey slightly sandy CLAY.	18.07	105	
BH28	11	P	28	F-OOQRPB-SQYV	11	Stiff dark brown and dark grey slightly sandy CLAY.	17.78	105	
BH28	11.1	B	42	F-W5RRPB-YBTF	11.1	Stiff dark brown and dark grey slightly sandy CLAY.	18.55	105	
BH28	11.25	B	43	F-B6RRPB-3OBR	11.25	Stiff dark brown and dark grey slightly sandy CLAY.	16.72	105	
BH28	11.4	D	44	F-U6RRPB-V259	11.4	Stiff dark brown and dark grey slightly sandy CLAY.	16.57	105	
BH28	11.5	P	29	F-OHRRPB-WBYF	11.5	Stiff dark brown and dark grey slightly sandy CLAY.	16.78	105	
BH28	11.7	B	46	F-BESRPB-HMID	11.7	Stiff dark brown and dark grey slightly sandy CLAY.	15.05	105	
BH28	11.9	D	47	F-HFSRPB-PGXZ	11.9	Stiff dark brown and dark grey slightly sandy CLAY.	17.59	105	
BH28	12	P	30	F-8CSRPB-ULBF	12	Stiff dark brown and dark grey slightly sandy CLAY.	20.05	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	12.1	B	49	F-D3TRPB-T069	12.1	Stiff dark brown and dark grey slightly sandy CLAY.	22.11	105	
BH28	12.3	B	50	F-L4TRPB-D4BN	12.3	Stiff dark brown and dark grey slightly sandy CLAY.	25.77	105	
BH28	12.65	C	52	F-OYTRPB-U489	12.65	Stiff dark brown and dark grey slightly sandy CLAY.	21.86	105	
BH28	12.85	D	53	F-2ZTRPB-VT9A	12.85	Stiff dark brown and dark grey slightly sandy CLAY.	20.85	105	
BH28	13.1	B	56	F-PQURPB-1FSH	13.1	Stiff dark brown and dark grey slightly sandy CLAY.	21.96	105	
BH28	13.25	B	64	F-1RURPB-DUHH	13.25	Stiff dark brown and dark grey slightly sandy CLAY.	20.5	105	
BH28	13.45	D	58	F-KRURPB-NAYU	13.45	Stiff dark brown and dark grey slightly sandy CLAY.	20.14	105	
BH28	13.6	B	60	F-D7YRPB-R5IU	13.65	Stiff dark brown and dark grey slightly sandy CLAY.	34.29	105	
BH28	13.6	B	60	F-D7YRPB-R5IU	13.85	Stiff dark brown and dark grey slightly sandy CLAY.	27.72	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	13.9	B	61	F-M7YRPB-N1JL	13.95	Dark brown and grey very gravelly clayey SAND.	20.92	105	
BH28	14	D	62	F-MKZRPB-7O45	14.03	Dark brown and grey very gravelly clayey SAND.	26.18	105	
BH28	14	B	63	F-PB0SPB-CQAA	14.2	Dark brown and grey very gravelly clayey SAND.	13.03	105	
BH28	14.5	B	65	F-I43SPB-BF8X	14.85	Dark brown and grey very gravelly clayey SAND.	8.68	105	
BH28	15	B	66	F-E84SPB-CTAY	15.2	Dark brown and grey very gravelly clayey SAND.	6.36	105	
BH28	15.25	B	67	F-T84SPB-5GSK	15.35	Dark brown and grey very gravelly clayey SAND.	18.1	105	
BH28	15.5	B	68	F-896SPB-5EDZ	15.53	Dark brown and grey very gravelly clayey SAND.	15.32	105	
BH28	15.6	B	69	F-K27SPB-X4JK	15.75	Dark brown and grey very gravelly clayey SAND.	11.08	105	
BH28	19	H	48	F-NNJSPB-N36B	19.35	Dark grey and very dark grey angular to rounded fine to coarse GRAVEL.	13.84	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	19.5	B	78	F-4IMSPB-6P9F	19.55	Very stiff dark grey and dark brownish grey sandy SILT.	13.4	105	
BH28	20	B	79	F-KYOSPB-B815	20.08	Very stiff dark grey and dark brownish grey sandy SILT.	13.83	105	
BH28	20.6	C	82	F-OOQSPB-UXCZ	20.6	Very stiff dark grey and dark brownish grey sandy SILT.	12.95	105	
BH28	20.8	B	83	F-5PQSPB-CLOF	20.8	Very stiff dark grey and dark brownish grey sandy SILT.	12.14	105	
BH28	21.1	C	85	F-YSRSPB-QGFL	21.1	Very stiff dark grey and dark brownish grey sandy SILT.	12.74	105	
BH28	21.3	B	86	F-DTRSPB-3XQA	21.3	Very stiff dark grey and dark brownish grey sandy SILT.	12.86	105	
BH28	21.7	B	87	F-AHVSPB-E34F	21.8	Very stiff dark grey and dark brownish grey sandy SILT.	16.38	105	
BH28	22.3	D	90	F-2WWSPB-FZYC	22.3	Very stiff dark grey and dark brownish grey sandy SILT.	12.71	105	
BH28	22.3	D	90	F-2WWSPB-FZYC	22.4	Very stiff dark grey and dark brownish grey sandy SILT.	12.9	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	22.5	P	56	F-34XSPB-NB38	22.5	Very stiff dark grey and dark brownish grey sandy SILT.	16.78	105	
BH28	22.75	C	92	F-RFXSPB-0U9F	22.75	Very stiff dark grey and dark brownish grey sandy SILT.	19.04	105	
BH28	22.9	D	93	F-6GXSPB-G5F2	22.9	Very stiff dark grey and dark brownish grey sandy SILT.	14.27	105	
BH28	23.7	B	95	F-WAZSPB-492Q	23.7	Very stiff dark grey and dark brownish grey sandy SILT.	22.2	105	
BH28	24	B	96	F-B60TPB-SX2P	24.1	Very stiff dark grey and dark brownish grey sandy SILT.	23.37	105	
BH28	24	B	96	F-B60TPB-SX2P	24.3	Very stiff dark grey and dark brownish grey sandy SILT.	22.66	105	
BH28	24	P	59	F-Z5YSPB-VWOQ	24	Very stiff dark grey and dark brownish grey sandy SILT.	24.19	105	
BH28	24.5	P	60	F-6BYSPB-KZAY	24.5	Very stiff dark grey and dark brownish grey sandy SILT.	14.88	105	
BH28	24.59	C	99	F-LW0TPB-I2TT	24.59	Very stiff dark grey and dark brownish grey sandy SILT.	16.42	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	24.78	B	100	F-AX0TPB-269K	24.78	Very stiff dark grey and dark brownish grey sandy SILT.	14.65	105	
BH28	25	D	101	F-BQ1TPB-TPYR	25	Very stiff dark grey and dark brownish grey sandy SILT.	21.45	105	
BH28	25.26	C	103	F-0U1TPB-3H85	25.26	Very stiff dark grey and dark brownish grey sandy SILT.	13.46	105	
BH28	25.7	C	105	F-1W2TPB-65DM	25.9	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.43	105	
BH28	25.7	C	105	F-1W2TPB-65DM	25.7	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.94	105	
BH28	26.1	C	106	F-NI3TPB-QYE2	26.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.08	105	
BH28	26.1	C	106	F-NI3TPB-QYE2	26.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.28	105	
BH28	26.6	C	108	F-HA4TPB-0IX3	26.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.62	105	
BH28	26.8	D	109	F-ZA4TPB-YBIV	26.8	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.89	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	27	P	65	F-QV4TPB-YU3O	27.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.33	105	
BH28	27	B	110	F-3F5TPB-8D6J	27.2	Very stiff dark brown slightly gravelly slightly sandy CLAY.	16.45	105	
BH28	27.25	D	111	F-TF5TPB-5BUA	27.35	Very stiff dark brown slightly gravelly slightly sandy CLAY.	9.54	105	
BH28	27.5	C	112	F-CM6TPB-IYNX	27.75	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.44	105	
BH28	27.5	C	112	F-CM6TPB-IYNX	27.5	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.82	105	
BH28	28.1	B	114	F-939TPB-BV3J	28.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.33	105	
BH28	28.31	C	115	F-E39TPB-R2W6	28.31	Very stiff dark brown slightly gravelly slightly sandy CLAY.	10.76	105	
BH28	28.5	D	116	F-KNATPB-6A5E	28.5	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.46	105	
BH28	28.6	C	117	F-1OATPB-AGVU	28.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	10.79	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	28.6	C	117	F-1OATPB-AGVU	28.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	11.19	105	
BH28	29.1	C	119	F-LEBTPB-RVXC	29.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	12.61	105	
BH28	29.1	C	119	F-LEBTPB-RVXC	29.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.27	105	
BH28	29.6	C	121	F-U9DTPB-9E5D	29.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.15	105	
BH28	29.85	C	122	F-AADTPB-O2S3	29.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.7	105	
BH28	30.1	C	123	F-UADTPB-8Z35	30.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.99	105	
BH28	30.4	D	124	F-ABDTPB-H0CU	30.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.72	105	
BH28	30.6	B	126	F-WAETPB-2TAA	30.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.34	105	
BH28	30.85	C	127	F-TBETPB-7G3G	30.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	16.08	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	31.1	C	128	F-2DETPB-YRPI	31.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.93	105	
BH28	31.4	D	129	F-HDETPB-I2XS	31.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	16.41	105	
BH28	31.6	C	131	F-74GTPB-OSMN	31.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.74	105	
BH28	31.85	C	132	F-O4GTPB-E9VR	31.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	21.02	105	
BH28	32.1	B	133	F-35GTPB-I36D	32.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19	105	
BH28	32.5	C	135	F-NLHTPB-3V58	32.5	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.78	105	
BH28	32.8	C	136	F-2MHTPB-YC4G	32.8	Very stiff dark brown slightly gravelly slightly sandy CLAY.	18.52	105	
BH28	33.1	C	137	F-HMHTPB-9LNE	33.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.02	105	
BH28	33.4	D	138	F-ZMHTPB-2KPD	33.4	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.21	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	33.75	B	140	F-JPITPB-7MVY	33.75	Brown slightly silty SAND.	29.65	105	
BH28	34	B	141	F-3NJTPB-KBXU	34	Brown slightly silty SAND.	27.2	105	
BH28	34.5	P	71	F-5UITPB-V47V	34.8	Brown slightly silty SAND.	29.25	105	
BH28	35	B	142	F-66MTPB-LC80	35.2	Brown slightly silty SAND.	25.98	105	
BH28	35.7	B	144	F-DANTPB-MH9B	35.7	Brown slightly silty SAND.	25.41	105	
BH28	35.7	B	144	F-DANTPB-MH9B	35.9	Brown slightly silty SAND.	26.17	105	
BH28	36.25	B	146	F-MKOTPB-LHPY	36.25	Brown slightly silty SAND.	25.59	105	
BH28	36.5	B	147	F-21STPB-DSMI	36.5	Brown slightly silty SAND.	25.12	105	
BH28	36.5	B	147	F-21STPB-DSMI	36.6	Brown slightly silty SAND.	26.35	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	36.73	B	148	F-T1STPB-3G8G	36.8	Brown slightly silty SAND.	25.05	105	
BH28	37	B	149	F-X7UTPB-06NN	37.2	Brown slightly silty SAND.	30.66	105	
BH28	37.5	B	150	F-FTVTPB-EAVX	37.65	Brown slightly silty SAND.	28.72	105	
BH28	38	B	151	F-IG2UPB-DM2K	38.1	Brown slightly silty SAND.	25.04	105	
BH28	38.25	B	152	F-YG2UPB-VHR9	38.25	Brown slightly silty SAND.	25.25	105	
BH28	38.5	B	153	F-Q43UPB-H2M1	38.65	Brown slightly silty SAND.	25.16	105	
BH28	38.75	B	154	F-353UPB-81D3	38.75	Brown slightly silty SAND.	25.19	105	
BH28	39.2	B	156	F-XH4UPB-PPXU	39.2	Brown slightly silty SAND.	24.49	105	
BH28	39.8	B	158	F-LY7UPB-TMWD	39.95	Brown slightly silty SAND.	22.63	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	40.21	B	160	F-JZ8UPB-F43W	40.3	Brown slightly silty SAND.	28.38	105	
BH28	40.21	B	160	F-JZ8UPB-F43W	40.35	Brown slightly silty SAND.	31.85	105	
BH28	40.7	B	163	F-R1AUPB-TK1F	40.75	Firm becoming stiff thinly laminated dark brownish grey CLAY.	24.67	105	
BH28	41	B	164	F-C0BUPB-S27N	41.15	Firm becoming stiff thinly laminated dark brownish grey CLAY.	24.55	105	
BH28	41.25	C	165	F-31BUPB-P7AN	41.25	Firm becoming stiff thinly laminated dark brownish grey CLAY.	23.81	105	
BH28	41.6	C	168	F-VICUPB-LEOH	41.6	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.79	105	
BH28	41.78	C	169	F-PJCUPB-VLRC	41.78	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.47	105	
BH28	41.9	B	170	F-AKCUPB-OW02	41.9	Firm becoming stiff thinly laminated dark brownish grey CLAY.	28.8	105	
BH28	42.05	C	172	F-MMDUPB-KHL7	42.05	Firm becoming stiff thinly laminated dark brownish grey CLAY.	28.13	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	42.2	C	173	F-1NDUPB-9S97	42.2	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.44	105	
BH28	42.35	B	174	F-ENDUPB-TGMQ	42.35	Firm becoming stiff thinly laminated dark brownish grey CLAY.	26.34	105	
BH28	42.7	C	176	F-O5FUPB-FGDF	42.7	Firm becoming stiff thinly laminated dark brownish grey CLAY.	26.66	105	
BH28	42.9	C	177	F-A6FUPB-WKK6	42.9	Firm becoming stiff thinly laminated dark brownish grey CLAY.	27.58	105	
BH28	43.05	D	178	F-77FUPB-BVYT	43.05	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.6	105	
BH28	43.1	B	179	F-S7FUPB-78M0	43.1	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.06	105	
BH28	43.3	B	180	F-J8FUPB-O6AO	43.3	Firm becoming stiff thinly laminated dark brownish grey CLAY.	26.09	105	
BH28	43.6	C	182	F-YMGUPB-4GNF	43.6	Stiff very dark grey slightly gravelly slightly sandy CLAY.	23.76	105	
BH28	43.85	C	183	F-4OGUPB-Y0EJ	43.85	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.66	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	44.1	C	184	F-QOGUPB-1ENK	44.1	Stiff very dark grey slightly gravelly slightly sandy CLAY.	15.19	105	
BH28	44.3	D	185	F-DPGUPB-U7D0	43.55	Stiff very dark grey slightly gravelly slightly sandy CLAY.	16.8	105	
BH28	44.3	D	185	F-DPGUPB-U7D0	44.35	Stiff very dark grey slightly gravelly slightly sandy CLAY.	12.02	105	
BH28	44.5	B	186	F-0QHUPB-WEVE	44.7	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.29	105	
BH28	46.1	C	189	F-8SKUPB-V6YV	46.1	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.15	105	
BH28	46.45	D	190	F-MUKUPB-YLAF	46.45	Stiff very dark grey slightly gravelly slightly sandy CLAY.	12.86	105	
BH28	46.57	C	192	F-DWMUPB-GEST	46.57	Stiff very dark grey slightly gravelly slightly sandy CLAY.	12.93	105	
BH28	46.77	C	193	F-GXMUPB-L25G	46.77	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.94	105	
BH28	46.96	B	194	F-CYMUPB-S9R8	46.96	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.65	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	47.18	B	195	F-B9NUPB-O3XO	47.18	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.13	105	
BH28	47.43	D	196	F-FANUPB-G1MC	47.43	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.52	105	
BH28	47.6	B	198	F-YCPUPB-FSM9	47.6	Stiff very dark grey slightly gravelly slightly sandy CLAY.	18.92	105	
BH28	47.6	B	198	F-YCPUPB-FSM9	47.9	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.35	105	
BH28	48.5	B	199	F-WHRUPB-XX3S	48.8	Brown and grey gravelly silty SAND.	25	105	
BH28	48.9	B	200	F-NIRUPB-6LXF	49.3	Brown and grey gravelly silty SAND.	24.1	105	
BH28	49.6	C	202	F-YGUUPB-GLYL	49.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.84	105	
BH28	49.85	C	203	F-THUUPB-EQ6U	49.85	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.23	105	
BH28	50.1	B	204	F-XIUUPB-NLYV	50.1	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.11	105	

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BH28	50.4	D	206	F-WJUUPB-QXDS	50.4	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.83	105	
BH28	50.6	C	208	F-MKVUPB-6Z23	50.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.39	105	
BH28	50.9	C	209	F-ZKVUPB-5I1A	50.9	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.56	105	
BH28	51.2	C	210	F-CLVUPB-0VWD	51.2	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14	105	
BH28	51.4	D	211	F-0NVUPB-N2GP	51.4	Very stiff dark brown slightly gravelly slightly sandy CLAY .	13.59	105	
BH28	51.64	B	213	F-RCXUPB-Y79B	51.64	Very stiff dark brown slightly gravelly slightly sandy CLAY .	13.74	105	
BH28	51.9	B	214	F-9DXUPB-93OQ	51.9	Very stiff dark brown slightly gravelly slightly sandy CLAY .	21.24	105	
BH28	52.08	C	215	F-QDXUPB-T7AJ	52.08	Very stiff dark brown slightly gravelly slightly sandy CLAY .	15.17	105	
BH28	52.73	C	217	F-UEXUPB-N3O5	52.8	Very stiff dark brown slightly gravelly slightly sandy CLAY .	13.34	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Drying Temperature [°C]	Remarks
BH28	53	D	219	F-WNYUPB-YY7N	53	Very stiff dark brown slightly gravelly slightly sandy CLAY .	19.33	105	
BH28	53.1	C	220	F-FTYUPB-HO7O	53.1	Very stiff dark brown slightly gravelly slightly sandy CLAY .	11.85	105	
BH28	53.48	B	221	F-4UYUPB-A7XY	53.48	Very stiff dark brown slightly gravelly slightly sandy CLAY .	13.58	105	
BH28	53.65	C	222	F-PUYUPB-QQU2	53.65	Very stiff dark brown slightly gravelly slightly sandy CLAY .	10.78	105	
BH28	54.1	C	224	F-93ZUPB-KCBK	54.1	Very stiff dark brown slightly gravelly slightly sandy CLAY .	12.01	105	
BH28	54.4	D	226	F-G6ZUPB-2GRA	54.4	Very stiff dark brown slightly gravelly slightly sandy CLAY .	12.41	105	
BH28	54.6	C	228	F-YB0VPB-W094	54.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	11.8	105	
BH28	54.94	B	229	F-SE0VPB-0L9U	54.94	Very stiff dark brown slightly gravelly slightly sandy CLAY .	15.76	105	
BH28	55.11	C	230	F-6H0VPB-6GOX	55.11	Weak orangish brown TILLITE.	13.59	105	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	6	B	13	F-HUYFPB-7Q0Z	6.15	Brown and greyish brown sandy slightly silty GRAVEL.	16.14	1.92	1.7	Density ring	
BH01	7.4	B	17	F-213GPB-964I	7.4	Brown slightly silty SAND.	21.61	1.98	1.63	Density ring	
BH01	7.6	B	18	F-C13GPB-IBMP	7.6	Brown slightly silty SAND.	24.99	1.91	1.53	Density ring	
BH01	7.6	B	18	F-C13GPB-IBMP	7.8	Brown slightly silty SAND.	24.99	1.93	1.54	Density ring	
BH01	8.2	B	20	F-HR4GPB-ZOIB	8.2	Brown slightly silty SAND.	24.66	1.93	1.55	Density ring	
BH01	8.4	B	21	F-QR4GPB-7GTP	8.65	Brown slightly silty SAND.	24.68	1.95	1.57	Density ring	
BH01	8.4	B	21	F-QR4GPB-7GTP	8.4	Brown slightly silty SAND.	24.68	1.94	1.56	Density ring	
BH01	9.25	B	23	F-VADGPB-U7Y6	9.25	Brown slightly silty SAND.	26.83	1.92	1.51	Density ring	
BH01	9.5	B	24	F-U1EGPB-SYAO	9.5	Brown slightly silty SAND.	23.13	1.93	1.56	Density ring	
BH01	9.75	B	25	F-82EGPB-BZOD	9.75	Brown slightly silty SAND.	26.34	1.86	1.47	Density ring	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	10	B	26	F-BKGGPB-QMFV	10	Brown slightly silty SAND.	19.53	1.99	1.66	Density ring	
BH01	10.2	B	27	F-NKGGPB-3BOO	10.2	Brown slightly silty SAND.	29.71	1.95	1.51	Density ring	
BH01	10.4	B	28	F-1LGGPB-1FPJ	10.5	Brown slightly silty SAND.	26.33	1.95	1.58	Density ring	
BH01	10.4	B	28	F-1LGGPB-1FPJ	10.4	Brown slightly silty SAND.	26.33	1.9	1.5	Density ring	
BH01	10.6	B	29	F-DLGGPB-9WQE	10.6	Brown slightly silty SAND.	24.64	1.91	1.54	Density ring	
BH01	13	B	38	F-HBLGPB-8W9D	13.2	Brown very silty SAND.	17.9	2.03	1.72	Density ring	
BH01	13.25	B	39	F-XBLGPB-A9WT	13.4	Brown very silty SAND.	22.53	1.98	1.62	Density ring	
BH01	16.12	B	45	F-RO1HPB-R9TY	16.16	Very dark grey GRAVEL.	19.3	2.07	1.74	Density ring	
BH01	18.5	B	52	F-O7EHPB-ZIOD	18.55	Brown slightly silty SAND.	19.81	2.06	1.72	Density ring	
BH01	19	B	54	F-CJFHPB-B8BI	19.05	Brown slightly silty SAND.	20.57	2.03	1.69	Density ring	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	19.25	B	55	F-QJFHPB-VB9I	19.25	Brown slightly silty SAND.	22.26	1.99	1.63	Density ring	
BH01	20	B	56	F-EZHHPB-M6VL	20.1	Brown slightly silty SAND.	20.02	1.98	1.65	Density ring	
BH01	21.25	B	60	F-TLJHPB-X5E4	21.25	Stiff brown slightly sandy CLAY.	20.25	1.99	1.65	Linear	
BH01	21.5	B	62	F-4ULHPB-BB82	21.7	Stiff brown slightly sandy CLAY.	19.24	2.07	1.73	Linear	
BH01	22.7	C	67	F-KAOHPB-NGZU	22.7	Stiff brown slightly sandy CLAY.	18.77	2.2	1.85	Linear	
BH01	22.9	C	68	F-BBOHPB-UZKQ	22.9	Stiff brown slightly sandy CLAY.	17.86	2.18	1.85	Linear	
BH01	23.1	C	69	F-NBOHPB-X5XG	23.1	Stiff brown slightly sandy CLAY.	18.81	2.16	1.82	Linear	
BH01	23.7	B	72	F-X2RHPB-9X0N	23.7	Stiff brown slightly sandy CLAY.	19.52	2.14	1.79	Linear	
BH01	24.15	C	75	F-FXRHPB-Y91V	24.15	Stiff brown slightly sandy CLAY.	19.19	2.14	1.79	Linear	
BH01	24.6	B	78	F-9JTHPB-4OSO	24.6	Stiff brown slightly sandy CLAY.	18.45	2.1	1.77	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	24.9	C	80	F-EKTHPB-K4ZQ	24.9	Stiff brown slightly sandy CLAY.	19.05	2.06	1.73	Linear	
BH01	25.7	C	85	F-MQWHPB-5RJE	25.7	Stiff brown slightly sandy CLAY.	23.8	2.08	1.68	Linear	
BH01	25.9	C	86	F-5SWHPB-JDJM	25.9	Stiff brown slightly sandy CLAY.	23.6	2.09	1.69	Linear	
BH01	26.6	B	92	F-5ZYHPB-6EJ0	26.6	Stiff brown slightly sandy CLAY.	26.26	2.25	1.78	Linear	
BH01	27.2	C	95	F-AVZHPB-TWRP	27.2	Stiff brown sandy SILT.	25.74	2.15	1.71	Linear	
BH01	27.6	C	98	F-S61IPB-ZPKU	27.6	Stiff brown sandy SILT.	17.17	2.16	1.84	Linear	
BH01	28.6	C	105	F-K65IPB-SNUI	28.6	Stiff and very stiff brown CLAY.	21.69	2.11	1.73	Linear	
BH01	29.8	C	112	F-47BIPB-IMAF	29.8	Very stiff brown slightly gravelly slightly sandy CLAY.	12.1	2.37	2.12	Linear	
BH01	30.05	C	113	F-O7BIPB-N7S8	30.05	Very stiff brown slightly gravelly slightly sandy CLAY.	9.59	2.38	2.17	Linear	
BH01	30.7	C	116	F-8MCIPB-9YEH	30.7	Very stiff brown slightly gravelly slightly sandy CLAY.	11.17	2.32	2.09	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	30.95	B	117	F-RMCIPB-60HI	30.95	Very stiff brown slightly gravelly slightly sandy CLAY.	10.77	2.31	2.08	Linear	
BH01	31.7	C	121	F-OIEIPB-FNL2	31.7	Very stiff brown slightly gravelly slightly sandy CLAY.	10.64	2.36	2.13	Linear	
BH01	32	C	122	F-CJEIPB-TYDJ	32	Very stiff brown slightly gravelly slightly sandy CLAY.	12.5	2.33	2.07	Linear	
BH01	33.1	C	128	F-VHGIPB-H0IM	33.1	Very stiff brown slightly gravelly slightly sandy CLAY.	14.88	2.27	1.98	Linear	
BH01	34.25	B	131	F-UJHIPB-4NC9	34.25	Light brownish grey SAND.	24.99	1.93	1.54	Density ring	
BH01	34.5	B	132	F-J2JIPB-OKQR	34.5	Light brownish grey SAND.	21.95	1.94	1.59	Density ring	
BH01	34.7	B	133	F-33JIPB-YODN	34.75	Light brownish grey SAND.	22.59	1.96	1.6	Density ring	
BH01	35	B	134	F-9GKIPB-2YEB	35	Light brownish grey SAND.	23.93	1.92	1.55	Density ring	
BH01	35.25	B	135	F-5HKIPB-6PNY	35.25	Light brownish grey SAND.	21.84	1.96	1.61	Density ring	
BH01	35.5	B	136	F-7KMIPB-DHDY	35.6	Light brownish grey SAND.	23.51	1.92	1.56	Density ring	
BH01	36.25	B	139	F-O2RIPB-VMIZ	36.25	Light brownish grey SAND.	22.05	2.01	1.65	Density ring	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	37.25	B	143	F-8Q3JPB-XD1Y	37.25	Light brownish grey SAND.	23.32	1.92	1.56	Density ring	
BH01	37.7	C	146	F-AH5JPB-F08R	37.7	Stiff brownish grey CLAY.	22.21	2.17	1.78	Linear	
BH01	37.9	B	147	F-PH5JPB-U7SG	37.9	Stiff brownish grey CLAY.	21.2	2.1	1.74	Linear	
BH01	38.1	C	148	F-2I5JPB-FF5P	38.1	Stiff brownish grey CLAY.	22.36	2.18	1.78	Linear	
BH01	38.5	B	150	F-7IFJPB-2KBV	38.6	Stiff brownish grey CLAY.	18.81	2.37	2	Linear	
BH01	39.1	C	152	F-7K1KPB-5WVW	39.1	Very stiff brown slightly sandy CLAY.	20.23	2.1	1.75	Linear	
BH01	39.3	B	153	F-4L1KPB-1WPS	39.3	Very stiff brown slightly sandy CLAY.	12.99	2.19	1.94	Linear	
BH01	39.8	C	157	F-595KPB-7C8Y	39.8	Very stiff brown slightly sandy CLAY.	18.4	2.11	1.78	Linear	
BH01	40.4	C	160	F-527KPB-73MX	40.4	Very stiff brown slightly sandy CLAY.	20.19	2.1	1.75	Linear	
BH01	41	B	164	F-V39KPB-LWS6	41	Very stiff brown slightly sandy CLAY.	18.5	2.2	1.86	Linear	
BH01	41.2	C	165	F-D49KPB-SAXT	41.2	Very stiff brown slightly sandy CLAY.	18.16	2.1	1.77	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	43.75	B	173	F-XO1LPB-WEWW	43.9	Stiff very dark grey thinly laminated silty CLAY.	26.79	1.94	1.53	Linear	
BH01	44	B	174	F-7P1LPB-5SAF	44	Stiff very dark grey thinly laminated silty CLAY.	27.25	2.01	1.58	Linear	
BH01	45.7	C	181	F-2D4LPB-XMD4	45.7	Stiff very dark grey thinly laminated silty CLAY.		1.94		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH01	45.9	C	182	F-SD4LPB-AQA8	45.9	Stiff very dark grey thinly laminated silty CLAY.		2.05		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH01	46.25	C	183	F-NG4LPB-RMCA	46.25	Stiff very dark grey thinly laminated silty CLAY.		2.05		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH01	47.12	C	189	F-EM6LPB-6YR0	47.12	Stiff very dark grey slightly gravelly slightly sandy CLAY.		2.2		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	47.95	C	192	F-ET7LPB-885E	47.95	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.6	2.21	1.95	Linear	
BH01	48.3	B	193	F-WT7LPB-V4C8	48.3	Stiff very dark grey slightly gravelly slightly sandy CLAY.	14.54	2.29	2	Linear	
BH01	48.6	C	194	F-4W7LPB-9WHD	48.6	Stiff very dark grey slightly gravelly slightly sandy CLAY.		2.26		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH01	49.3	C	197	F-4H9LPB-MV4A	49.3	Stiff and very stiff very dark grey gravelly CLAY.	13.41	2.3	2.03	Linear	
BH01	49.6	C	198	F-HH9LPB-C7ZP	49.6	Stiff and very stiff very dark grey gravelly CLAY.	12.66	2.28	2.03	Linear	
BH01	49.9	C	199	F-VH9LPB-79XL	49.9	Stiff and very stiff very dark grey gravelly CLAY.	13.14	2.35	2.07	Linear	
BH01	52.1	C	205	F-NWFLPB-HDLC	52.1	Stiff and very stiff very dark grey gravelly CLAY.	14.55	2.09	1.83	Linear	
BH01	52.35	C	206	F-5XFLPB-4V2O	52.35	Stiff and very stiff very dark grey gravelly CLAY.	13.32	2.3	2.03	Linear	
BH01	53.2	C	210	F-4QHLPB-37HU	53.2	Stiff and very stiff very dark grey gravelly CLAY.	20.97	2.21	1.83	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	53.45	C	211	F-0RHLPB-OTSY	53.45	Stiff and very stiff very dark grey gravelly CLAY.	13.9	2.26	1.98	Linear	
BH01	53.7	C	212	F-JRHLPB-JY2Z	53.7	Stiff and very stiff very dark grey gravelly CLAY.	15.29	2.27	1.97	Linear	
BH01	54.7	C	216	F-QWILPB-Q7BL	54.7	Stiff and very stiff very dark grey gravelly CLAY.	11.86	2.3	2.05	Linear	
BH01	55	C	217	F-9XILPB-PD00	55	Stiff and very stiff very dark grey gravelly CLAY.	13.36	2.22	1.96	Linear	
BH01	55.3	C	218	F-NXILPB-R5Z9	55.3	Stiff and very stiff very dark grey gravelly CLAY.	12.49	2.22	1.97	Linear	
BH01	56.1	C	222	F-FUJLPB-RBTA	56.1	Stiff and very stiff very dark grey gravelly CLAY.	14.5	2.28	1.99	Linear	
BH01	56.5	C	223	F-GVJLPB-4YEM	56.5	Stiff and very stiff very dark grey gravelly CLAY.	13.08	2.27	2.01	Linear	
BH01	57.6	C	227	F-F2LLPB-VUGP	57.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	30.01	2.09	1.61	Linear	
BH01	57.9	C	228	F-W2LLPB-27ET	57.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	28.12	2.11	1.65	Linear	
BH01	58.6	C	231	F-9JMLPB-KQWS	58.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.91	2.03	1.62	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH01	58.9	B	232	F-1KMLPB-RDCQ	58.9	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	25.22	2.03	1.62	Linear	
BH01	62.1	C	245	F-SKQLPB-IZ76	62.1	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.91	1.98	1.56	Linear	
BH01	62.6	C	248	F-DURLPB-D3ED	62.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	29.35	1.95	1.51	Linear	
BH01	65.6	C	258	F-S9WLPB-KGG6	65.6	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	24.62	2.04	1.64	Linear	
BH01	66.26	C	260	F-MBWLPB-L8RI	66.26	Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY.	26.84	2.03	1.6	Linear	
BH01	69.7	B	270	F-V61MPB-1QBL	69.75	Dark grey and grey very clayey SAND.	19.66	1.86	1.55	Density ring	
BH01	74.5	C	283	F-TAGMPB-PYH0	74.5	Stiff dark greyish brown slightly gravelly CLAY.		2.14		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	5.3	B	8	F-A818RB-T0I1	5.4	Very dense greyish brown slightly gravelly slightly silty SAND.	23.97	2.07	1.67	Density ring	
BH08	5.5	B	9	F-X818RB-E5RE	5.7	Very dense greyish brown slightly gravelly slightly silty SAND.	22.09	2.09	1.71	Density ring	
BH08	5.8	B	10	F-IS18RB-PCPA	5.9	Very dense greyish brown slightly gravelly slightly silty SAND.	21.11	2.07	1.71	Density ring	
BH08	6.1	B	11	F-4T18RB-93PZ	6.2	Very dense greyish brown slightly gravelly slightly silty SAND.	20.42	2.08	1.73	Density ring	
BH08	9.3	B	15	F-D8A8RB-S5RD	9.4	Very dense greyish brown slightly gravelly slightly silty SAND.	22.41	2.02	1.65	Density ring	
BH08	9.5	B	16	F-09A8RB-YMDH	9.7	Very dense greyish brown slightly gravelly slightly silty SAND.	22.61	2.07	1.69	Density ring	
BH08	10	B	18	F-SPA8RB-QOWS	10	Very dense greyish brown slightly gravelly slightly silty SAND.	22	2.08	1.71	Density ring	
BH08	10	B	18	F-SPA8RB-QOWS	10.2	Very dense greyish brown slightly gravelly slightly silty SAND.	22	2.07	1.76	Density ring	
BH08	13.3	B	23	F-DWH8RB-3IMK	13.6	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	21.21	1.99	1.65	Density ring	
BH08	14	B	25	F-9OI8RB-P88T	14.2	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	23.6	1.95	1.58	Density ring	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	14	B	25	F-9OI8RB-P88T	14	Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND.	23.6	1.92	1.56	Density ring	
BH08	17.32	C	31	F-4FR8RB-ETF7	17.32	Firm greyish brown slightly gravelly slightly sandy CLAY.	14.37	2.32	2.02	Linear	
BH08	17.56	B	32	F-DGR8RB-1C6C	17.56	Firm greyish brown slightly gravelly slightly sandy CLAY.	16.31	2.27	1.95	Linear	
BH08	17.8	C	33	F-PJS8RB-8Q3W	17.8	Firm greyish brown slightly gravelly slightly sandy CLAY.	19.35	2.19	1.83	Linear	
BH08	18.35	C	35	F-YAT8RB-9M89	18.35	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.26	2.21	1.88	Linear	
BH08	18.55	C	36	F-XBT8RB-HW0V	18.55	Firm greyish brown slightly gravelly slightly sandy CLAY.	18.22	2.24	1.9	Linear	
BH08	18.85	C	39	F-IFU8RB-0ME1	18.85	Firm greyish brown slightly gravelly slightly sandy CLAY.	18	2.22	1.88	Linear	
BH08	19.05	C	40	F-YFU8RB-1KGZ	19.05	Firm greyish brown slightly gravelly slightly sandy CLAY.	17.67	2.25	1.91	Linear	
BH08	20.95	C	44	F-WTY8RB-LY4I	20.95	Firm greyish brown slightly gravelly slightly sandy CLAY.	20.9	2.12	1.76	Linear	
BH08	21.1	B	45	F-E0Z8RB-SJSS	21.1	Firm greyish brown slightly gravelly slightly sandy CLAY.	19.59	2.12	1.78	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	21.4	C	47	F-SC09RB-M6WK	21.4	Firm greyish brown slightly gravelly slightly sandy CLAY.	15.2	2.08	1.8	Linear	
BH08	21.6	C	48	F-7D09RB-7PKO	21.6	Firm greyish brown slightly gravelly slightly sandy CLAY.	16.75	2.19	1.88	Linear	
BH08	21.94	C	50	F-VW09RB-C9R8	21.94	Firm greyish brown slightly gravelly slightly sandy CLAY.	23.23	2.18	1.77	Linear	
BH08	22.08	C	51	F-HX09RB-2Q1A	22.08	Firm greyish brown slightly gravelly slightly sandy CLAY.	20.46	2.15	1.79	Linear	
BH08	22.52	C	53	F-IT19RB-IW8H	22.52	Stiff greyish brown thinly laminated CLAY.	19.57	2.15	1.8	Linear	
BH08	24.52	B	57	F-4S89RB-6ZQD	24.52	Stiff greyish brown thinly laminated CLAY.	24.42	2.17	1.74	Linear	
BH08	24.96	C	60	F-4I99RB-O14E	24.96	Stiff greyish brown thinly laminated CLAY.	20.94	2.12	1.76	Linear	
BH08	25.16	C	61	F-OI99RB-VU2B	25.16	Stiff greyish brown thinly laminated CLAY.	20.74	2.07	1.71	Linear	
BH08	25.47	C	63	F-OYA9RB-RE5M	25.47	Stiff greyish brown thinly laminated CLAY.	22.3	2.13	1.74	Linear	
BH08	25.67	C	64	F-OZA9RB-4TYG	25.67	Stiff greyish brown thinly laminated CLAY.	20.39	1.49	1.24	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	25.85	C	66	F-EUB9RB-HXKK	25.85	Stiff greyish brown thinly laminated CLAY.	22.22	2.07	1.69	Linear	
BH08	26.05	C	67	F-4VB9RB-QOP8	26.05	Stiff greyish brown thinly laminated CLAY.	18.32	2.07	1.75	Linear	
BH08	28.89	C	74	F-9VJ9RB-WDXX	28.89	Very stiff greyish brown slightly gravelly CLAY.	10.8	2.24	2.02	Linear	
BH08	29.1	C	75	F-6XJ9RB-AIKS	29.1	Very stiff greyish brown slightly gravelly CLAY.	24.11	2.35	1.89	Linear	
BH08	29.5	B	78	F-ZEM9RB-SIW8	29.65	Very stiff greyish brown slightly gravelly CLAY.	19.21	2.08	1.75	Linear	
BH08	29.8	B	80	F-7CR9RB-CGR7	30.05	Stiff dark greyish brown gravelly sandy CLAY.	10	2.31	2.1	Linear	
BH08	31.5	C	84	F-GFS9RB-ZFQD	31.5	Stiff dark greyish brown gravelly sandy CLAY.	10.81	2.35	2.12	Linear	
BH08	31.94	C	86	F-WGS9RB-H153	31.94	Stiff dark greyish brown gravelly sandy CLAY.	13.54	2.33	2.06	Linear	
BH08	32.4	C	89	F-IRT9RB-QDJK	32.4	Stiff dark greyish brown gravelly sandy CLAY.	12.24	2.25	2	Linear	
BH08	32.64	C	90	F-YRT9RB-1UDY	32.64	Stiff dark greyish brown gravelly sandy CLAY.	12.5	2.24	1.99	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	32.89	B	91	F-DST9RB-4TLO	32.89	Stiff dark greyish brown gravelly sandy CLAY.	12.9	2.27	2.01	Linear	
BH08	34.1	B	94	F-ZGV9RB-E6Q7	34.4	Stiff dark greyish brown gravelly sandy CLAY.	24.44	1.99	1.6	Linear	
BH08	34.8	B	95	F-ZQW9RB-MJCZ	34.8	Stiff dark greyish brown gravelly sandy CLAY.	21.8	2.05	1.68	Linear	
BH08	35.05	C	96	F-JRW9RB-W6I3	36	Stiff dark greyish brown gravelly sandy CLAY.	16.15	1.8	1.51	Linear	
BH08	35.05	C	96	F-JRW9RB-W6I3	35.05	Stiff dark greyish brown gravelly sandy CLAY.	16.15	2.26	1.95	Linear	
BH08	35.05	C	96	F-JRW9RB-W6I3	36.2	Stiff dark greyish brown gravelly sandy CLAY.	16.15	2.01	1.68	Linear	
BH08	36.4	B	100	F-STY9RB-GHRH	36.4	Dense to very dense locally medium dense brown silty SAND.	22.83	1.97	1.6	Density ring	
BH08	36.4	B	100	F-STY9RB-GHRH	36.6	Dense to very dense locally medium dense brown silty SAND.	22.83	1.94	1.57	Density ring	
BH08	44.2	B	113	F-UJCARB-ASYU	44.25	Dense to very dense locally medium dense brown silty SAND.	17.79	1.99	1.69	Density ring	
BH08	44.6	B	115	F-3ADARB-65SK	44.6	Dense to very dense locally medium dense brown silty SAND.	23.6	2.05	1.66	Density ring	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH08	44.6	B	115	F-3ADARB-65SK	44.7	Dense to very dense locally medium dense brown silty SAND.	23.6	2.02	1.65	Density ring	
BH08	47.8	B	120	F-U6NARB-QCFS	47.9	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.5	2.3	2.06	Linear	
BH08	48.07	C	122	F-Z7NARB-AD8Z	48.07	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.87	2.32	2.08	Linear	
BH08	50.97	B	128	F-XGVARB-RF7P	51.3	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	30.5	2.44	2.24	Linear	
BH08	51.8	C	131	F-LKVARB-CGZS	51.8	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	9.34	2.28	2.08	Linear	
BH08	52.05	C	132	F-9LVARB-AVL7	52.05	Firm greyish brown slightly gravelly slightly sandy clayey SILT.	11.98	2.27	2.02	Linear	
BH08	57.5	C	136	F-UAOBRB-V5KD	57.5	Dense to very dense ulticoloured black white dark green yellowish brown dark grey GRAVEL.		2.84		Density ring	

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BH09	5.7	B	8	F-QXO0QB-Q58C	5.9	Greyish brown slightly silty SAND.	18.88	1.94	1.57	Density ring	
BH09	5.7	B	8	F-QXO0QB-Q58C	5.7	Greyish brown slightly silty SAND.	18.88	1.94	1.64	Density ring	
BH09	5.7	B	8	F-QXO0QB-Q58C	5.9	Greyish brown slightly silty SAND..	23.7	1.94	1.57	Density ring	
BH09	9	B	12	F-ERV0QB-ZKR0	9.3	Greyish brown slightly silty SAND.	25.94	2	1.66	Density ring	
BH09	9.5	B	13	F-EIW0QB-3FBN	9.7	Greyish brown slightly silty SAND.	27.04	1.88	1.48	Density ring	
BH09	9.7	B	14	F-LNW0QB-240W	9.9	Greyish brown slightly silty SAND.	25.78	1.91	1.52	Density ring	
BH09	13	D	22	F-O441QB-TL9N	13.1	Firm brown slightly sandy CLAY.	18.6	2.15	1.82	Linear	
BH09	13.3	C	24	F-R541QB-08QB	13.3	Firm brown slightly sandy CLAY.	17.48	2.17	1.85	Linear	
BH09	13.33	D	29	F-XO81QB-LJUE	14.1	Firm brown slightly sandy CLAY.	19.2	2.12	1.78	Linear	
BH09	14.5	B	30	F-PS91QB-BUGG	14.62	Firm locally thinly laminated dark grey CLAY.	21.92	2.17	1.78	Linear	

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BH09	14.8	B	32	F-KU91QB-8ANP	14.8	Firm locally thinly laminated dark grey CLAY.	18.64	2.14	1.81	Linear	
BH09	14.96	D	33	F-0V91QB-KSPT	14.96	Firm locally thinly laminated dark grey CLAY.	18.88	2.1	1.77	Linear	
BH09	17	B	37	F-CNE1QB-S9MH	17.15	Firm locally thinly laminated dark grey CLAY.	22.73	2.04	1.67	Linear	
BH09	17.4	D	38	F-BOE1QB-DCZX	17.4	Firm locally thinly laminated dark grey CLAY.	18.38	2.14	1.8	Linear	
BH09	17.5	D	39	F-A0G1QB-LXUD	17.59	Firm locally thinly laminated dark grey CLAY.	19.74	2.15	1.8	Linear	
BH09	19.5	D	43	F-98O1QB-XKT4	19.56	Firm locally thinly laminated dark grey CLAY.	26.26	2.07	1.64	Linear	
BH09	19.76	C	45	F-U9O1QB-5UUY	19.76	Firm locally thinly laminated dark grey CLAY.	21.11	2.15	1.78	Linear	
BH09	19.96	C	46	F-8AO1QB-O5B8	19.96	Firm very dark grey sandy CLAY.	12.29	2.19	1.95	Linear	
BH09	20.16	B	47	F-QAO1QB-SR8H	20.16	Firm very dark grey sandy CLAY.	16.86	2.28	1.95	Linear	
BH09	20.5	D	49	F-GAP1QB-OR6V	20.54	Firm very dark grey sandy CLAY.	13.8	2.24	1.97	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH09	20.76	B	51	F-8BP1QB-TTKS	20.85	Firm very dark grey sandy CLAY.	15.54	2.05	1.77	Linear	
BH09	23	B	54	F-TTU1QB-2JXU	23.1	Firm very dark grey slightly gravelly slightly sandy CLAY.	20.83	2.32	2.06	Linear	
BH09	24	B	58	F-C8X1QB-4P5R	24.15	Firm very dark grey slightly gravelly slightly sandy CLAY.	18.1	2.27	1.92	Linear	
BH09	24.32	B	61	F-FAX1QB-AX5J	24.4	Firm very dark grey slightly gravelly slightly sandy CLAY.	16.19	2.04	1.76	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH10	6	B	8	F-91GNQB-K853	6.1	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	21.69	2.38	1.96	Density ring	
BH10	10.2	B	15	F-ITNNQB-2EU2	10.25	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	19.15	0	0	Density ring	
BH10	10.5	PS	14	F-HOMNQB-UDLH	10.5	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	24.44	2.14	1.72	Density ring	
BH10	10.7	B	17	F-HMONQB-SERL	10.95	Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND.	17.61	2.02	1.76	Density ring	
BH10	14	B	22	F-5LYNQB-QR7E	14.12	Stiff thinly laminated dark grey CLAY.	24.49	2.04	1.62	Linear	
BH10	14.32	C	24	F-QMYNQB-PZLD	14.32	Stiff thinly laminated dark grey CLAY.	23.3	1.97	1.6	Linear	
BH10	15.1	B	26	F-L80OQB-785L	15.3	Very stiff dark greyish brown slightly gravelly sandy CLAY.	27.89	193.34	148.68	Linear	
BH10	15.1	B	26	F-L80OQB-785L	15.1	Very stiff dark greyish brown slightly gravelly sandy CLAY.	27.89	1.98	1.54	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH10	15.5	B	28	F-C51OQB-32K4	15.7	Very stiff dark greyish brown slightly gravelly sandy CLAY.	26.11	2.02	1.58	Linear	
BH10	17.5	B	32	F-EA4OQB-JVZP	17.8	Very stiff dark greyish brown slightly gravelly sandy CLAY.	18.06	2.21	1.92	Linear	
BH10	18.2	B	35	F-BC5OQB-7YYX	18.2	Very stiff dark greyish brown slightly gravelly sandy CLAY.	10.89	2.32	2.1	Linear	
BH10	18.5	PS	23	F-PM4OQB-1W2F	18.5	Very stiff dark greyish brown slightly gravelly sandy CLAY.	11.79	2.29	2.05	Linear	
BH10	21	C	42	F-Z7FOQB-TIIA	21	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	15.08	2.24	1.95	Linear	
BH10	21.25	B	43	F-Z8FOQB-IUAQ	21.25	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	12.93	2.21	1.96	Linear	
BH10	21.51	B	44	F-0AFOQB-EGY8	21.68	Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY.	17.07	2.17	1.85	Linear	
BH10	22.1	C	46	F-VRFOQB-OVKY	22.1	Very stiff greyish brown gravelly sandy silty CLAY.	11.26	2.3	2.07	Linear	
BH10	24.17	C	54	F-L2LOQB-BWTF	24.17	Very stiff greyish brown slightly gravelly sandy SILT.	17.45	2.29	1.95	Linear	
BH10	24.57	B	57	F-L8LOQB-K41A	24.57	Very stiff greyish brown slightly gravelly sandy SILT.	10.45	2.35	2.13	Linear	

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BH10	24.57	B	57	F-L8LOQB-K41A	24.91	Very stiff greyish brown slightly gravelly sandy SILT.	10.45	2.28	2.07	Linear	
BH10	26.3	C	61	F-A0OOQB-8955	26.3	Very stiff greyish brown slightly gravelly sandy SILT.	11.01	2.09	1.89	Linear	
BH10	26.51	C	62	F-33OOQB-VA1D	26.51	Very stiff greyish brown slightly gravelly sandy SILT.	13.59	2.3	2.02	Linear	
BH10	30.44	B	74	F-ON3PQB-30ZV	30.64	Stiff brownish grey slightly gravelly sandy silty CLAY.	23.08	2.14	1.74	Linear	
BH10	30.88	C	76	F-EP3PQB-YLZL	30.88	Stiff brownish grey slightly gravelly sandy silty CLAY.	20.51	2.12	1.76	Linear	
BH10	38	PS	28	F-J0IPQB-BCSE	38	Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY.	32.72	2	1.51	Linear	
BH10	39.8	C	94	F-3MPPQB-CMQP	39.8	Stiff greyish brown slightly sandy CLAY.	15.28	1.54	1.33	Linear	
BH10	41.75	C	97	F-OYUPQB-969W	41.75	Very stiff dark brown slightly sandy very gravelly CLAY.	13	2.35	2.08	Linear	
BH10	43.6	B	103	F-BJZPQB-57K9	44	Very stiff dark brown slightly sandy very gravelly CLAY.	9.34	2.32	2.07	Linear	
BH10	44.5	B	106	F-YZ0QQB-KPV3	44.57	Very stiff dark brown slightly sandy very gravelly CLAY.	9.53	2.33	2.12	Linear	

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BH10	45	B	109	F-R32QQB-XGKV	45.2	Very stiff dark brown slightly sandy very gravelly CLAY.	9.26	2.26	2.06	Linear	
BH10	45.4	C	111	F-252QQB-BGQE	45.4	Very stiff dark brown slightly sandy very gravelly CLAY.	9.07	2.26	2.07	Linear	
BH10	46.8	B	115	F-H83QQB-KRJ9	46.9	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.	24.67	2.1	1.68	Linear	
BH10	47.1	B	117	F-ZE3QQB-QCCL	47.1	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.		2.06		Linear	
BH10	47.1	B	117	F-ZE3QQB-QCCL	47.4	Very stiff thinly to thickly laminated dark grey slightly sandy CLAY.		2.11		Linear	
BH10	48.7	B	121	F-1Y6QQB-0BMG	49.1	Reddish brown slightly gravelly clayey fine grained SAND.	15.82	2.06	1.75	Density ring	
BH10	48.7	B	121	F-1Y6QQB-0BMG	48.7	Reddish brown slightly gravelly clayey fine grained SAND.	15.82	2.15	1.86	Density ring	

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BH12	6	B	7	F-IA97QB-I5MM	6.2	Very dense greyish brown and brownish grey SAND.	27.58	2	1.56	Density ring	
BH12	6.25	B	8	F-2B97QB-CVHA	6.35	Very dense greyish brown and brownish grey SAND.	24.09	1.93	1.56	Density ring	
BH12	10	B	12	F-IOI7QB-C6Q1	10.2	Very dense greyish brown and brownish grey SAND.	26.63	1.69	1.33	Density ring	
BH12	10.3	B	13	F-O0J7QB-5KWJ	10.3	Very dense greyish brown and brownish grey SAND.	26.19	1.93	1.53	Density ring	
BH12	13.5	B	16	F-SHS7QB-D253	13.63	Very dense greyish brown and brownish grey locally silty SAND.	23.48	1.96	1.59	Density ring	
BH12	13.75	B	17	F-PIS7QB-NERP	13.75	Very dense greyish brown and brownish grey locally silty SAND.	23.28	2	1.62	Density ring	
BH12	17.5	B	23	F-RL38QB-40HK	17.7	Very dense greyish brown and brownish grey locally silty SAND.	25.48	2.05	1.63	Density ring	
BH12	17.75	B	24	F-OM38QB-SRWA	17.9	Very dense greyish brown and brownish grey locally silty SAND.	17.89	2.14	1.82	Density ring	
BH12	21.65	C	29	F-4TE8QB-C2EF	21.65	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.62	2.06	1.7	Linear	
BH12	22.05	C	32	F-FDG8QB-N3CW	22.05	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	16.31	2.16	1.85	Linear	

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BH12	22.15	C	33	F-8FG8QB-THAR	22.15	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	17.42	2.16	1.84	Linear	
BH12	22.4	B	35	F-NMG8QB-ZU8H	22.45	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	25.1	1.96	1.57	Linear	
BH12	25.6	C	41	F-A3P8QB-3FZ6	25.6	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	19.01	2.21	1.85	Linear	
BH12	25.8	C	42	F-R3P8QB-ECOM	25.8	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.71	2.16	1.77	Linear	
BH12	26.19	C	44	F-95Q8QB-3MF8	26.39	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	20.23	2.2	1.86	Linear	
BH12	26.59	B	46	F-S9R8QB-A8BH	26.6	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.62	2.13	1.75	Linear	
BH12	26.59	B	46	F-S9R8QB-A8BH	26.59	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	21.62	2.06	1.69	Linear	
BH12	26.76	C	47	F-CCR8QB-226M	26.76	Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY.	18.02	2.15	1.82	Linear	

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BH12	27.27	C	49	F-IKS8QB-IZ1K	27.27	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	18.21	2.14	1.81	Linear	
BH12	29.2	C	53	F-PUV8QB-OGYH	29.2	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	20.62	2.15	1.78	Linear	
BH12	30.2	B	61	F-Q0Y8QB-YTBB	30.2	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	16.88	2.13	1.82	Linear	
BH12	30.6	C	63	F-6KY8QB-WQXW	30.6	Stiff thinly laminated dark grey slightly gravelly silty CLAY.	22.16	2.1	1.72	Linear	
BH12	32.8	AMAL	1	Borehole sample_BH12	32.8	Brown slightly gravelly clayey SAND.	15.72	1.84	1.59	Density ring	
BH12	33.2	B	69	F-6K59QB-CPJ2	33.2	Brown slightly gravelly clayey SAND.	23.05	2	1.62	Density ring	
BH12	36.2	C	79	F-LEE9QB-P2IJ	36.2	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.62	2.26	1.99	Linear	
BH12	36.7	B	82	F-04F9QB-R3Y1	36.7	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.52	2.15	1.9	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH12	37.04	C	86	F-NKI9QB-DMBJ	37.04	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.76	2.29	2.02	Linear	
BH12	37.24	C	88	F-MLI9QB-G70J	37.24	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.55	2.32	1.99	Linear	
BH12	39.07	C	92	F-40N9QB-HGPB	39.07	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.74	2.25	1.96	Linear	
BH12	39.27	C	93	F-X0N9QB-EH76	39.28	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.09	2.21	1.95	Linear	
BH12	39.72	C	95	F-E0O9QB-QM5V	39.72	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14	2.26	1.99	Linear	
BH12	40.09	B	99	F-6CP9QB-1BXL	40.09	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	16.01	2.3	1.98	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH12	40.29	C	98	F-UCP9QB-LG8U	40.29	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	15.14	2.27	1.97	Linear	
BH12	40.54	C	102	F-BJQ9QB-XZ4Y	40.54	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	13.22	2.21	1.95	Linear	
BH12	40.74	C	103	F-YJQ9QB-0UTG	40.74	Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY.	14.8	2.31	2.01	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH13	4.3	B	8	F-NW2UQB-H58I	4.45	Greyish brown slightly gravelly fine SAND.	21.9	1.94	1.59	Density ring	
BH13	8.5	B	13	F-MCCUQB-27RG	8.5	Greyish brown slightly silty locally very silty fine SAND.	18.5	2.18	1.84	Density ring	
BH13	8.5	B	13	F-MCCUQB-27RG	8.95	Greyish brown slightly silty locally very silty fine SAND.	25.6	1.95	1.55	Density ring	
BH13	12.1	C	18	F-B1JUQB-T34T	12.1	Stiff dark greyish brown silty CLAY.	17	2.31	1.97	Linear	
BH13	12.37	C	19	F-P2JUQB-6O2A	12.37	Stiff dark greyish brown silty CLAY.	18.7	2.31	1.95	Linear	
BH13	12.64	C	20	F-F5JUQB-6313	12.64	Stiff dark greyish brown silty CLAY.	15.2	2.3	2	Linear	
BH13	13.14	B	23	F-3YKUQB-56D1	13.14	Stiff dark greyish brown silty CLAY.	24.3	2.18	1.75	Linear	
BH13	13.33	C	24	F-SYKUQB-LN1A	13.33	Stiff dark greyish brown silty CLAY.	17.5	2.22	1.89	Linear	
BH13	13.85	C	26	F-W2MUQB-BQ6Y	13.85	Stiff dark greyish brown silty CLAY.	21	2.18	1.8	Linear	
BH13	15.6	C	30	F-W5UUQB-Y4J8	15.6	Stiff thinly laminated dark greyish brown CLAY.	18.8	2.17	1.83	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH13	16.16	C	33	F-LXUUQB-MS2U	16.16	Stiff thinly laminated dark greyish brown CLAY.	18.3	2.11	1.78	Linear	
BH13	16.6	C	35	F-6YVUQB-TI6G	16.6	Stiff thinly laminated dark greyish brown CLAY.	25	2.11	1.69	Linear	
BH13	17.05	C	38	F-S1XUQB-Q4B3	17.05	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	21.1	2.06	1.7	Linear	
BH13	17.25	C	39	F-E2XUQB-RWED	17.4	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	16.1	2.25	1.94	Linear	
BH13	19.2	C	43	F-841VQB-RM3G	19.4	Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY.	24.4	2.21	1.77	Linear	
BH13	19.7	B	45	F-FU1VQB-CLJ3	19.7	Stiff thinly laminated dark greyish brown CLAY.	23.4	2.03	1.64	Linear	
BH13	20	C	46	F-XD2VQB-26RI	20	Stiff thinly laminated dark greyish brown CLAY.	26.6	2.06	1.63	Linear	
BH13	20.2	C	47	F-PE2VQB-HY22	20.2	Stiff thinly laminated dark greyish brown CLAY.	23.6	2.05	1.66	Linear	

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BH13	20.6	C	49	F-803VQB-88RO	20.6	Stiff thinly laminated dark greyish brown CLAY.		2.14		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH13	20.8	C	50	F-T03VQB-HOMW	20.8	Stiff thinly laminated dark greyish brown CLAY.	26.6	2.13	1.68	Linear	
BH13	26.1	C	61	F-JTGVQB-SDXA	26.1	Very stiff dark greyish brown CLAY .	21.2	1.98	1.64	Linear	
BH13	26.3	C	62	F-8UGVQB-DBA2	26.3	Very stiff dark greyish brown CLAY .		2.03		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH13	26.7	C	64	F-5THVQB-8CR3	26.7	Very stiff dark greyish brown CLAY .	23.1	2.1	1.71	Linear	
BH13	27.15	C	68	F-ONIVQB-WTMC	27.15	Very stiff dark greyish brown CLAY .	22.07	2.09	1.71	Linear	
BH13	27.33	D	69	F-COIVQB-0THR	27.35	Very stiff dark greyish brown CLAY .	21.1	2.02	1.67	Linear	
BH13	27.5	B	70	F-9PJVQB-SAZA	27.6	Greyish brown silty fine SAND.	24.3	2.03	1.63	Density ring	

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BH13	28.5	B	72	F-D4MVQB-DRGM	29.2	Greyish brown silty fine SAND.	23.9	2.08	1.68	Density ring	
BH13	30	B	73	F-BSTVQB-V5OX	29.5	Greyish brown silty fine SAND.	19.4	2.11	1.77	Density ring	
BH13	31	C	74	F-2UVVQB-4AZC	31	Very stiff light reddish brown gravelly slightly sandy silty CLAY.		2.38		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH13	31.19	C	75	F-DYVVQB-0VS1	31.19	Very stiff light reddish brown gravelly slightly sandy silty CLAY.	9.2	2.39	2.19	Linear	
BH13	31.35	C	77	F-ISXVQB-MCXE	31.35	Very stiff light reddish brown gravelly slightly sandy silty CLAY.		2.32		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH13	31.51	C	79	F-7YXVQB-Y8NH	31.51	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Recovered as GRAVEL in clay matrix.		2.37		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.

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BH13	31.59	C	80	F-GZXVQB-1BOQ	31.59	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Recovered as GRAVEL in clay matrix.		2.27		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH13	32.02	C	84	F-BE0WQB-HXOM	32.02	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Recovered as GRAVEL in clay matrix.	17.2	2.49	2.12	Linear	
BH13	32.22	C	85	F-5K0WQB-YWG1	32.22	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Recovered as GRAVEL in clay matrix.	18.6	2.51	2.12	Linear	

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Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH20	5.2	B	10	F-CZL0RB-9ITK	5.3	Dark brownish grey very silty fine sand with occasional pockets of clay.	17.7	2.05	1.74	Linear	
BH20	7.65	B	16	F-VOT0RB-3JZ9	7.65	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.8	2.2	1.88	Linear	
BH20	7.65	B	16	F-VOT0RB-3JZ9	7.85	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.1	2.17	1.86	Linear	
BH20	8.1	B	18	F-OKU0RB-LA0S	8.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.5	2.25	1.92	Linear	
BH20	8.6	B	21	F-ZAV0RB-UF77	8.7	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17.1	2.23	1.9	Linear	
BH20	8.9	C	23	F-5CV0RB-MBH5	8.9	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.3	2.19	1.88	Linear	
BH20	9.1	B	24	F-D0W0RB-TZG1	9.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.3	2.2	1.89	Linear	
BH20	11.1	B	28	F-IZZ0RB-EBZH	11.1	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	19.5	2.25	1.88	Linear	
BH20	11.2	B	29	F-L101RB-A9ZO	11.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	17	2.21	1.89	Linear	
BH20	11.6	B	31	F-WL01RB-M5Z9	11.77	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18	2.25	1.91	Linear	

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BH20	12.29	C	35	F-OZ11RB-UJXA	12.29	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.5	2.26	1.94	Linear	
BH20	12.6	B	36	F-SK21RB-FVVB	12.6	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	18	2.18	1.85	Linear	
BH20	12.9	C	38	F-GN21RB-0RP2	12.9	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.2	2.16	1.86	Linear	
BH20	14.65	B	42	F-PA61RB-B224	14.65	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	15.8	2.23	1.92	Linear	
BH20	14.85	C	43	F-OB61RB-16UR	14.85	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.7	2.17	1.86	Linear	
BH20	15.1	B	44	F-1Z61RB-VQKR	15.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.		2.14		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH20	15.2	C	45	F-PZ61RB-AOWT	15.2	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.		2.14		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH20	15.37	C	46	F-R071RB-0FFF	15.37	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	14.7	2.21	1.92	Linear	

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BH20	15.67	C	51	F-OY91RB-54RJ	15.67	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.5	2.25	1.93	Linear	
BH20	16.3	C	50	F-G4B1RB-UVZA	16.3	Stiff dark greyish brown slightly gravelly slightly sandy CLAY.	16.2	2.21	1.9	Linear	
BH20	19.6	B	55	F-SHJ1RB-E1EI	20	Very dense becoming dense greyish brown slightly silty SAND.	17.6	2.06	1.75	Density ring	
BH20	20.1	B	56	F-QKK1RB-PKBD	20.5	Very dense becoming dense greyish brown slightly silty SAND.	18.3	1.84	1.55	Density ring	
BH20	23.6	B	59	F-62S1RB-E8WE	23.85	Very dense becoming dense greyish brown slightly silty SAND.	26	1.9	1.51	Density ring	
BH20	24.1	B	60	F-VUS1RB-OMWA	24.3	Very dense becoming dense greyish brown slightly silty SAND.	26.8	1.88	1.48	Density ring	
BH20	27.6	B	63	F-3XZ1RB-AE5O	27.85	Very dense becoming dense greyish brown slightly silty SAND.	23.6	1.94	1.57	Density ring	
BH20	28.1	B	64	F-J512RB-3TMA	28.3	Very dense becoming dense greyish brown slightly silty SAND.	29.2	1.95	1.51	Density ring	
BH20	31.6	B	68	F-RLI2RB-DEOR	31.7	Very dense becoming dense greyish brown slightly silty SAND.	19.2	2.07	1.74	Density ring	
BH20	31.8	B	69	F-GMI2RB-54M3	32	Very dense becoming dense greyish brown slightly silty SAND.	24.1	2.03	1.63	Density ring	

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BH20	32.35	B	71	F-19J2RB-X3MZ	32.6	Very dense becoming dense greyish brown slightly silty SAND.	14.9	2.08	1.81	Density ring	
BH20	35.8	B	77	F-H8S2RB-QDJZ	36	Dense becoming medium dense greyish brown slightly silty SAND.	19.6	2.07	1.73	Density ring	
BH20	36.1	B	78	F-IRS2RB-7I8Y	36.2	Dense becoming medium dense greyish brown slightly silty SAND.	25.2	2.05	1.63	Density ring	
BH20	36.35	B	79	F-DSS2RB-ZVWN	36.5	Dense becoming medium dense greyish brown slightly silty SAND.	17.4	2.03	1.73	Density ring	
BH20	39.85	B	85	F-H1Z2RB-LP9R	40	Dense becoming medium dense greyish brown slightly silty SAND.	19	2.08	1.75	Density ring	
BH20	40.1	B	86	F-AKZ2RB-VAC4	40.3	Dense becoming medium dense greyish brown slightly silty SAND.	24.4	2.06	1.65	Density ring	
BH20	40.35	B	87	F-ZKZ2RB-DW4B	40.5	Dense becoming medium dense greyish brown slightly silty SAND.	18.5	2.03	1.71	Density ring	
BH20	43.6	B	91	F-CP83RB-SGEW	43.9	Dense becoming medium dense greyish brown slightly silty SAND.	24.5	1.83	1.47	Density ring	
BH20	44.1	B	92	F-WA93RB-J18B	44.4	Dense becoming medium dense greyish brown slightly silty SAND.	25.9	1.91	1.51	Density ring	
BH20	47.6	B	95	F-GWF3RB-NUDM	47.9	Dense becoming medium dense greyish brown slightly silty SAND.	23.2	1.97	1.6	Density ring	

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BH20	48	B	96	F-GJG3RB-GAXP	48.3	Dense becoming medium dense greyish brown slightly silty SAND.	22.7	2.08	1.7	Density ring	
BH20	51.6	B	99	F-8QO3RB-C3ZF	51.9	Dense becoming medium dense greyish brown slightly silty SAND.	25.4	1.96	1.56	Density ring	
BH20	52.1	PS	61	F-CGQ3RB-7CJO	52.18	Dense becoming medium dense greyish brown slightly silty SAND.	23.8	1.98	1.6	Density ring	
BH20	55.8	B	104	F-L4X3RB-DRPH	56.05	Dense becoming medium dense greyish brown slightly silty SAND.	20.9	1.94	1.6	Density ring	
BH20	55.8	B	104	F-L4X3RB-DRPH	55.8	Dense becoming medium dense greyish brown slightly silty SAND.	25.9	1.91	1.52	Density ring	
BH20	56.18	B	105	F-32Y3RB-IPXA	56.4	Dense becoming medium dense greyish brown slightly silty SAND.	25.8	1.89	1.51	Density ring	
BH20	59.6	B	110	F-WD84RB-Y8VW	59.8	Medium dense dark greyish brown SAND.	22.3	2	1.63	Density ring	
BH20	59.8	B	111	F-ZE84RB-R6IY	60	Medium dense dark greyish brown SAND.	26.3	1.98	1.56	Density ring	

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BH26	5.5	B	5	F-TFI7PB-0776	5.72	Dense to very dense light brown to greyish brown slightly silty SAND.	19.6	2.09	1.75	Density ring	
BH26	9.75	B	8	F-OPW7PB-2BND	9.85	Greyish brown slightly silty SAND.	24.5	1.78	1.43	Density ring	
BH26	10	B	9	F-SPW7PB-C0X7	10	Greyish brown slightly silty SAND.	23.8	1.9	1.53	Density ring	
BH26	13.68	C	13	F-9578PB-AR1B	13.7	Firm greyish brown slightly sandy slightly silty CLAY.	20.6	2.36	1.96	Linear	
BH26	13.88	B	14	F-5678PB-Y5S3	13.9	Firm greyish brown slightly sandy slightly silty CLAY.	16.2	2.2	1.89	Linear	
BH26	14.09	B	15	F-L678PB-SSL5	14.15	Dense to very dense greyish brown slightly clayey SAND.	20.3	1.96	1.63	Density ring	
BH26	17.7	B	22	F-M3H8PB-8UE7	17.7	Stiff dark grey and grey sandy SILT.	21.2	2.08	1.72	Linear	
BH26	18.95	C	29	F-1VJ8PB-Z1HV	18.95	Stiff brown sandy SILT.	29.5	1.95	1.51	Linear	
BH26	19.15	C	30	F-AVJ8PB-XUJI	21.1	Stiff brown sandy SILT.	11.6	2.09	1.87	Linear	
BH26	19.15	C	30	F-AVJ8PB-XUJI	19.15	Stiff brown sandy SILT.	29.4	1.99	1.54	Linear	

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BH26	21.3	B	39	F-DDR8PB-0YRE	21.3	Stiff brown slightly sandy slightly gravelly CLAY.	11.8	2.25	2.01	Linear	
BH26	21.75	C	42	F-B1T8PB-KSW9	21.75	Stiff brown slightly sandy slightly gravelly CLAY.	11.8	2.28	2.04	Linear	
BH26	24.1	C	53	F-YL69PB-299D	24.1	Very stiff brown slightly sandy slightly gravelly CLAY.	14.2	2.4	2.1	Linear	
BH26	27.1	C	61	F-VLJ9PB-ZGHV	27.1	Very stiff dark grey CLAY.	23.3	2.06	1.67	Linear	
BH26	31.6	B	68	F-27V9PB-DYQ2	31.6	Very dense grey slightly silty SAND.	25.8	1.95	1.55	Density ring	
BH26	35.6	C	77	F-9QBAPB-2LCW	35.6	Firm thinly laminated brown slightly sandy CLAY.	28.8	2.01	1.56	Linear	
BH26	36.2	C	80	F-TOHAPB-I64Z	36.2	Firm brown slightly sandy slightly gravelly CLAY.	26.4	1.98	1.57	Linear	
BH26	36.4	C	81	F-TPHAPB-4FAZ	36.4	Firm brown slightly sandy slightly gravelly CLAY.	21.4	2.3	1.89	Linear	
BH26	37.6	D	85	F-8MJAPB-JC50	37.6	Brown and greyish brown silty SAND.	18.2	2.01	1.7	Density ring	

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BH28	3.2	B	7	F-HC3RPB-RP1H	3.35	Light brown slightly gravelly slightly silty SAND.	12.9	2.07	1.83	Density ring	
BH28	4.5	B	11	F-FQ8RPB-IXVS	4.5	Light brown slightly gravelly slightly silty SAND.	17.79	1.94	1.65	Density ring	
BH28	6.7	C	16	F-PEIRPB-ZZK5	6.7	Firm dark brown slightly gravelly slightly sandy CLAY.	16.63	2.1	1.8	Linear	
BH28	7.8	C	22	F-8AKRPB-TLHJ	7.8	Firm dark brown slightly gravelly slightly sandy CLAY.	28.61	1.97	1.53	Linear	
BH28	8.5	B	25	F-6ZMRPB-DPDS	8.55	Brown silty SAND.	24.32	1.92	1.54	Density ring	
BH28	8.85	B	27	F-83NRPB-3JMU	8.95	Brown silty SAND.	14.39	2.08	1.82	Density ring	
BH28	9.6	C	31	F-VNORPB-XJOM	9.6	Stiff dark brown and dark grey slightly sandy CLAY.	18.27	2.12	1.79	Linear	
BH28	11.7	B	46	F-BESRPB-HMID	11.7	Stiff dark brown and dark grey slightly sandy CLAY.	15.05	2.19	1.91	Linear	
BH28	12.65	C	52	F-OYTRPB-U489	12.65	Stiff dark brown and dark grey slightly sandy CLAY.	21.86	2.09	1.71	Linear	
BH28	13.25	B	64	F-1RURPB-DUHH	13.25	Stiff dark brown and dark grey slightly sandy CLAY.	20.5	2.06	1.71	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	20	B	79	F-KYOSPB-B815	20.08	Very stiff dark grey and dark brownish grey sandy SILT.	13.83	2.23	1.96	Linear	
BH28	20.6	C	82	F-OOQSPB-UXCZ	20.6	Very stiff dark grey and dark brownish grey sandy SILT.	12.95	2.22	1.97	Linear	
BH28	21.1	C	85	F-YSRSPB-QGFL	21.1	Very stiff dark grey and dark brownish grey sandy SILT.	12.74	2.26	2.01	Linear	
BH28	22.5	P	56	F-34XSPB-NB38	22.5	Very stiff dark grey and dark brownish grey sandy SILT.	16.78	2.1	1.8	Linear	
BH28	22.75	C	92	F-RFXSPB-0U9F	22.75	Very stiff dark grey and dark brownish grey sandy SILT.	19.04	2.11	1.77	Linear	
BH28	23.7	B	95	F-WAZSPB-492Q	23.7	Very stiff dark grey and dark brownish grey sandy SILT.	22.2	1.95	1.6	Linear	
BH28	24	P	59	F-Z5YSPB-VWOQ	24	Very stiff dark grey and dark brownish grey sandy SILT.	24.19	1.91	1.54	Linear	
BH28	24	B	96	F-B60TPB-SX2P	24.3	Very stiff dark grey and dark brownish grey sandy SILT.	22.7	1.87	1.52	Linear	
BH28	24.59	C	99	F-LW0TPB-I2TT	24.59	Very stiff dark grey and dark brownish grey sandy SILT.	16.42	2.18	1.87	Linear	
BH28	25.26	C	103	F-0U1TPB-3H85	25.26	Very stiff dark grey and dark brownish grey sandy SILT.	13.46	2.24	1.97	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	25.7	C	105	F-1W2TPB-65DM	25.7	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.94	2.23	1.96	Linear	
BH28	26.1	C	106	F-NI3TPB-QYE2	26.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.28	2.3	1.93	Linear	
BH28	26.6	C	108	F-HA4TPB-0IX3	26.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.62	2.25	1.98	Linear	
BH28	27.5	C	112	F-CM6TPB-IYNX	27.5	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.82	2.21	1.94	Linear	
BH28	28.31	C	115	F-E39TPB-R2W6	28.31	Very stiff dark brown slightly gravelly slightly sandy CLAY.	10.76	2.29	2.06	Linear	
BH28	28.6	C	117	F-1OATPB-AGVU	28.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	10.79	2.28	2.05	Linear	
BH28	29.1	C	119	F-LEBTPB-RVXC	29.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	12.61	2.28	2.03	Linear	
BH28	29.6	C	121	F-U9DTPB-9E5D	29.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.15	2.22	1.93	Linear	
BH28	29.85	C	122	F-AADTPB-O2S3	29.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.7	2.23	1.95	Linear	
BH28	30.1	C	123	F-UADTPB-8Z35	30.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	13.99	2.3	2.02	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	30.6	B	126	F-WAETPB-2TAA	30.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.34	2.22	1.86	Linear	
BH28	30.85	C	127	F-TBETPB-7G3G	30.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	16.08	2.19	1.89	Linear	
BH28	31.1	C	128	F-2DETPB-YRPI	31.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	14.93	2.29	2	Linear	
BH28	31.6	C	131	F-74GTPB-OSMN	31.6	Very stiff dark brown slightly gravelly slightly sandy CLAY.	15.74	2.2	1.9	Linear	
BH28	31.85	C	132	F-O4GTPB-E9VR	31.85	Very stiff dark brown slightly gravelly slightly sandy CLAY.	21.02	1.91	1.58	Linear	
BH28	32.5	C	135	F-NLHTPB-3V58	32.5	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.78	2.15	1.79	Linear	
BH28	32.8	C	136	F-2MHTPB-YC4G	32.8	Very stiff dark brown slightly gravelly slightly sandy CLAY.	18.52	2.19	1.84	Linear	
BH28	33.1	C	137	F-HMHTPB-9LNE	33.1	Very stiff dark brown slightly gravelly slightly sandy CLAY.	19.02	2.09	1.76	Linear	
BH28	33.75	B	140	F-JPITPB-7MVY	33.75	Brown slightly silty SAND.	29.65	1.91	1.48	Density ring	
BH28	35.7	B	144	F-DANTPB-MH9B	35.7	Brown slightly silty SAND.	25.41	1.93	1.54	Density ring	
BH28	35.7	B	144	F-DANTPB-MH9B	35.9	Brown slightly silty SAND.	26.2	1.79	1.42	Density ring	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	36.25	B	146	F-MKOTPB-LHPY	36.25	Brown slightly silty SAND.	25.59	1.93	1.54	Density ring	
BH28	36.5	B	147	F-21STPB-DSMI	36.5	Brown slightly silty SAND.	25.12	1.92	1.53	Density ring	
BH28	38	B	151	F-IG2UPB-DM2K	38.1	Brown slightly silty SAND.	25.04	2	1.6	Density ring	
BH28	38.25	B	152	F-YG2UPB-VHR9	38.25	Brown slightly silty SAND.	25.25	2.01	1.61	Density ring	
BH28	38.5	B	153	F-Q43UPB-H2M1	38.65	Brown slightly silty SAND.	25.16	1.99	1.59	Density ring	
BH28	38.75	B	154	F-353UPB-81D3	38.75	Brown slightly silty SAND.	25.19	1.97	1.57	Density ring	
BH28	39.2	B	156	F-XH4UPB-PPXU	39.2	Brown slightly silty SAND.	24.49	2.04	1.64	Density ring	
BH28	39.8	B	158	F-LY7UPB-TMWD	39.95	Brown slightly silty SAND.	22.63	1.96	1.6	Density ring	
BH28	40.7	B	163	F-R1AUPB-TK1F	40.75	Firm becoming stiff thinly laminated dark brownish grey CLAY.	24.67	2.01	1.61	Linear	
BH28	41.25	C	165	F-31BUPB-P7AN	41.25	Firm becoming stiff thinly laminated dark brownish grey CLAY.	23.81	2.14	1.73	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	41.6	C	168	F-VICUPB-LEOH	41.6	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.79	2.01	1.6	Linear	
BH28	41.78	C	169	F-PJCUPB-VLRC	41.78	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.47	1.99	1.58	Linear	
BH28	42.05	C	172	F-MMDUPB-KHL7	42.05	Firm becoming stiff thinly laminated dark brownish grey CLAY.	28.13	1.96	1.53	Linear	
BH28	42.2	C	173	F-1NDUPB-9S97	42.2	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.44	2.02	1.61	Linear	
BH28	42.7	C	176	F-O5FUPB-FGDF	42.7	Firm becoming stiff thinly laminated dark brownish grey CLAY.	26.66	2.02	1.59	Linear	
BH28	42.9	C	177	F-A6FUPB-WKK6	42.9	Firm becoming stiff thinly laminated dark brownish grey CLAY.	27.58	1.95	1.53	Linear	
BH28	43.1	B	179	F-S7FUPB-78M0	43.1	Firm becoming stiff thinly laminated dark brownish grey CLAY.	25.06	2.06	1.65	Linear	
BH28	43.6	C	182	F-YMGUPB-4GNF	43.6	Stiff very dark grey slightly gravelly slightly sandy CLAY.	23.76	2.16	1.74	Linear	
BH28	43.85	C	183	F-4OGUPB-Y0EJ	43.85	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.66	2.3	2.03	Linear	
BH28	44.1	C	184	F-QOGUPB-1ENK	44.1	Stiff very dark grey slightly gravelly slightly sandy CLAY.	15.19	2.27	1.97	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	46.1	C	189	F-8SKUPB-V6YV	46.1	Stiff very dark grey slightly gravelly slightly sandy CLAY.	13.15	2.32	2.05	Linear	
BH28	46.57	C	192	F-DWMUPB-GEST	46.57	Stiff very dark grey slightly gravelly slightly sandy CLAY.	12.93	2.28	2.02	Linear	
BH28	46.77	C	193	F-GXMUPB-L25G	46.77	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.94	2.31	2.06	Linear	
BH28	47.18	B	195	F-B9NUPB-O3XO	47.18	Stiff very dark grey slightly gravelly slightly sandy CLAY.	11.13	2.27	2.04	Linear	
BH28	49.6	C	202	F-YGUUPB-GLYL	49.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.84	2.24	1.95	Linear	
BH28	49.85	C	203	F-THUUPB-EQ6U	49.85	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.23	2.25	1.97	Linear	
BH28	50.23	C	205	F-GJUUPB-IVCU	50.23	Very stiff dark brown slightly gravelly slightly sandy CLAY .		2.24		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH28	50.6	C	208	F-MKVUPB-6Z23	50.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.39	2.25	1.97	Linear	
BH28	50.9	C	209	F-ZKVUPB-5I1A	50.9	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14.56	2.27	1.98	Linear	

Tested in accordance with
BS EN ISO 17892-2:2014

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	51.2	C	210	F-CLVUPB-0VWD	51.2	Very stiff dark brown slightly gravelly slightly sandy CLAY .	14	2.19	1.92	Linear	
BH28	52.08	C	215	F-QDXUPB-T7AJ	52.08	Very stiff dark brown slightly gravelly slightly sandy CLAY .	15.17	2.39	2.07	Linear	
BH28	52.36	C	218	F-KUXUPB-KOUN	52.36	Very stiff dark brown slightly gravelly slightly sandy CLAY .		2.21		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH28	52.73	C	217	F-UEXUPB-N3O5	52.73	Very stiff dark brown slightly gravelly slightly sandy CLAY .		2.23		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH28	53.1	C	220	F-FTYUPB-HO7O	53.1	Very stiff dark brown slightly gravelly slightly sandy CLAY .	11.85	2.39	2.14	Linear	
BH28	53.65	C	222	F-PUYUPB-QQU2	53.65	Very stiff dark brown slightly gravelly slightly sandy CLAY .	10.78	2.21	2	Linear	
BH28	53.88	C	223	F-OVYUPB-TAHS	53.88	Very stiff dark brown slightly gravelly slightly sandy CLAY .		2.32		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.

Tested in accordance with
BS EN ISO 17892-2:2014

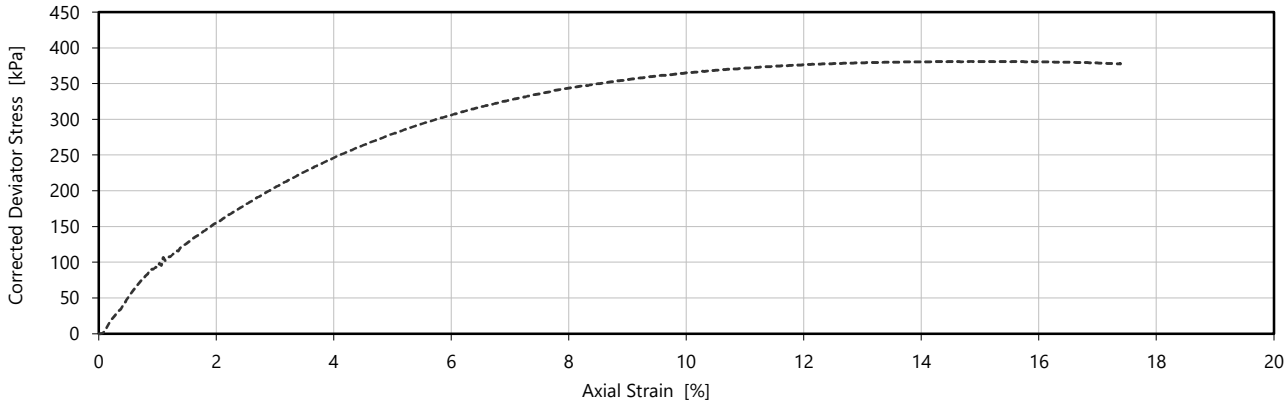
Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Moisture Content [%]	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	TestType	Remarks
BH28	54.1	C	224	F-93ZUPB-KCBK	54.1	Very stiff dark brown slightly gravelly slightly sandy CLAY .	12.01	2.34	2.09	Linear	
BH28	54.25	C	225	F-C3ZUPB-N11H	54.25	Very stiff dark brown slightly gravelly slightly sandy CLAY .		2.2		Linear	Soil core bulk density calculated from dimensions. Dry density and moisture content not determined to preserve sample for Stage 2 and 3 testing.
BH28	54.6	C	228	F-YB0VPB-W094	54.6	Very stiff dark brown slightly gravelly slightly sandy CLAY .	11.8	2.28	2.04	Linear	
BH28	55.11	C	230	F-6H0VPB-6GOX	55.11	Weak orangish brown TILLITE.	13.59	2.49	2.19	Density ring	

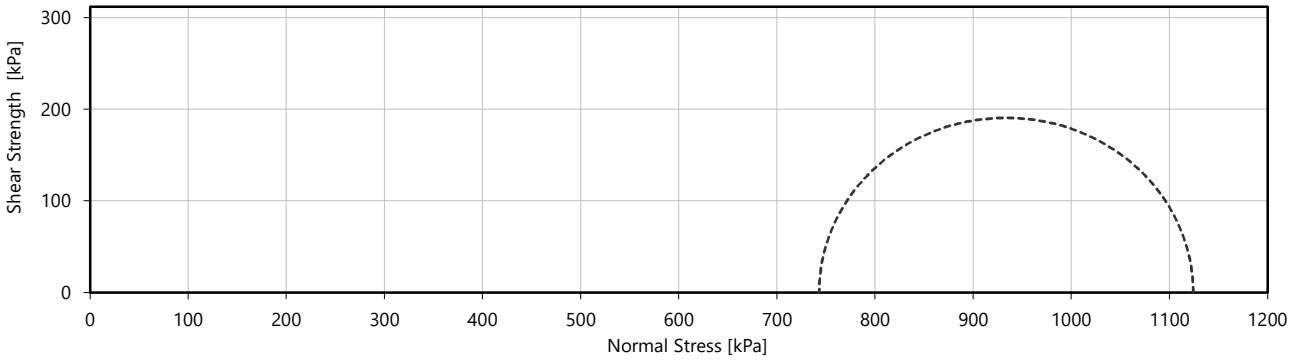
Tested in accordance with
BS EN ISO 17892-2:2014

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	23.70
Specimen Description	Stiff grey slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	23.70	Sample Reference	72





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	141.31		
Diameter [mm]	72.07		
Bulk Density [Mg/m³]	2.14		
Specimen Water Content [%]	19.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.794		
Initial Voids Ratio	0.477		
Degree of Saturation [%]	108		
Application of Deviator Stress			
Cell Pressure [kPa]	743		
Specimen Height [mm]	141.41		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	191		
Strain at Failure [%]	14.8		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

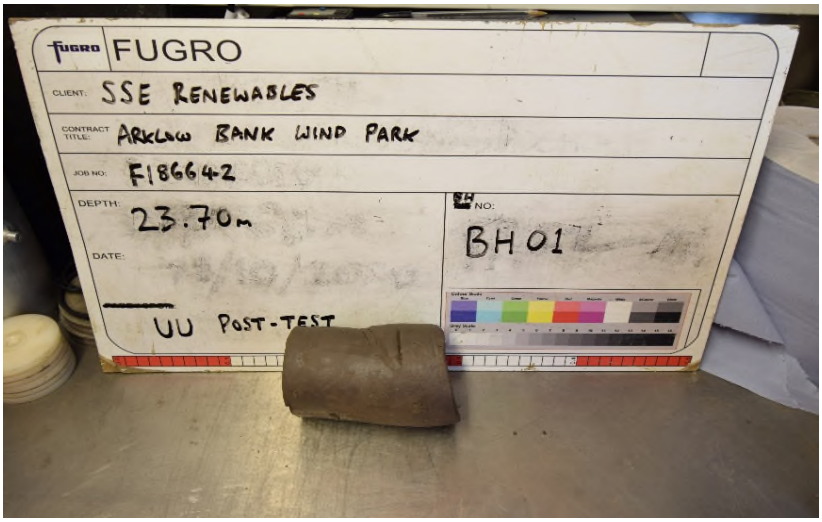
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test
BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	23.70
Specimen Description	Stiff grey slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	23.70	Sample Reference	72



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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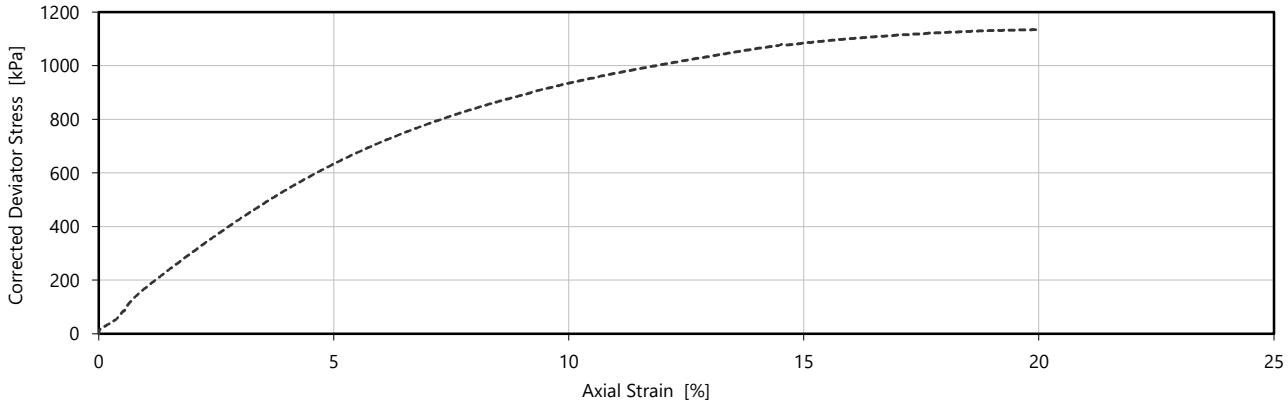
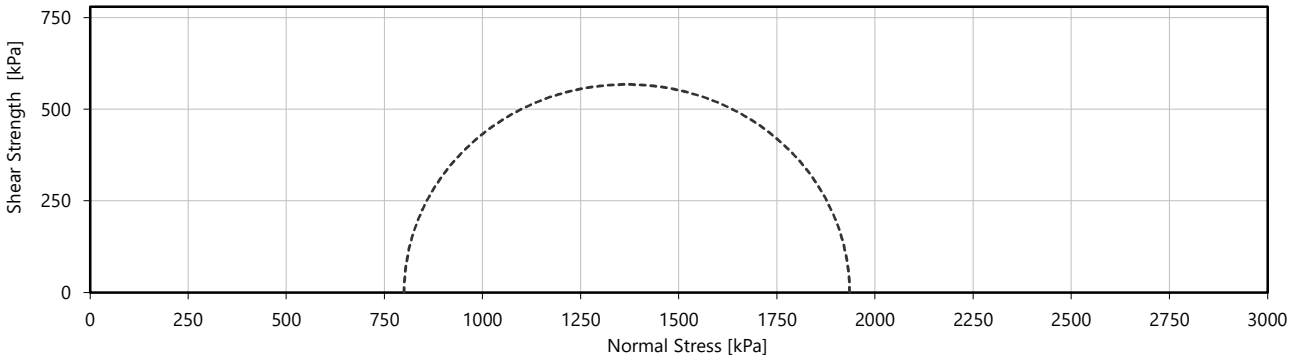
Plate 5.176

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	26.60
Specimen Description	Stiff brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	26.62	Sample Reference	92





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	147.65		
Diameter [mm]	71.85		
Bulk Density [Mg/m³]	2.245		
Specimen Water Content [%]	19.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.878		
Initial Voids Ratio	0.411		
Degree of Saturation [%]	126		
Application of Deviator Stress			
Cell Pressure [kPa]	800		
Specimen Height [mm]	147.75		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	568		
Strain at Failure [%]	19.9		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	26.60
Specimen Description	Stiff brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	26.62	Sample Reference	92



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

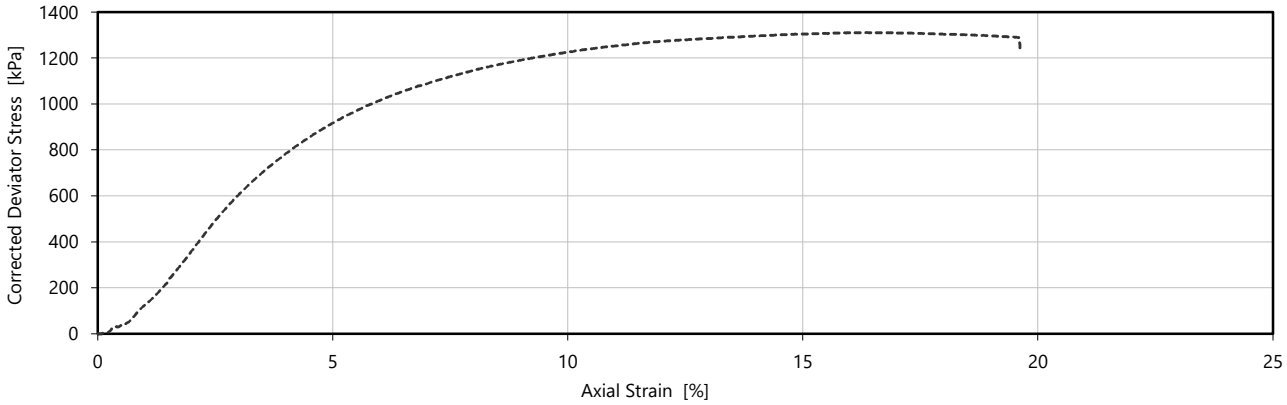
Tested offshore onboard DEME Neptune

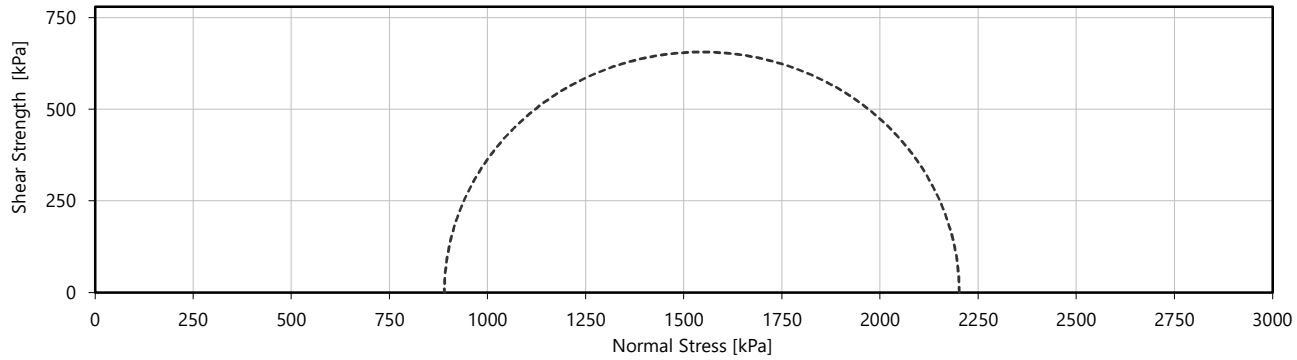
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.95
Specimen Description	Very stiff brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	31.00	Sample Reference	117





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	201.33		
Diameter [mm]	102.00		
Bulk Density [Mg/m³]	2.307		
Specimen Water Content [%]	10.8		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	2.083		
Initial Voids Ratio	0.273		
Degree of Saturation [%]	105		
Application of Deviator Stress			
Cell Pressure [kPa]	890		
Specimen Height [mm]	201.43		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	656		
Strain at Failure [%]	16.4		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.95
Specimen Description	Very stiff brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	31.00	Sample Reference	117



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

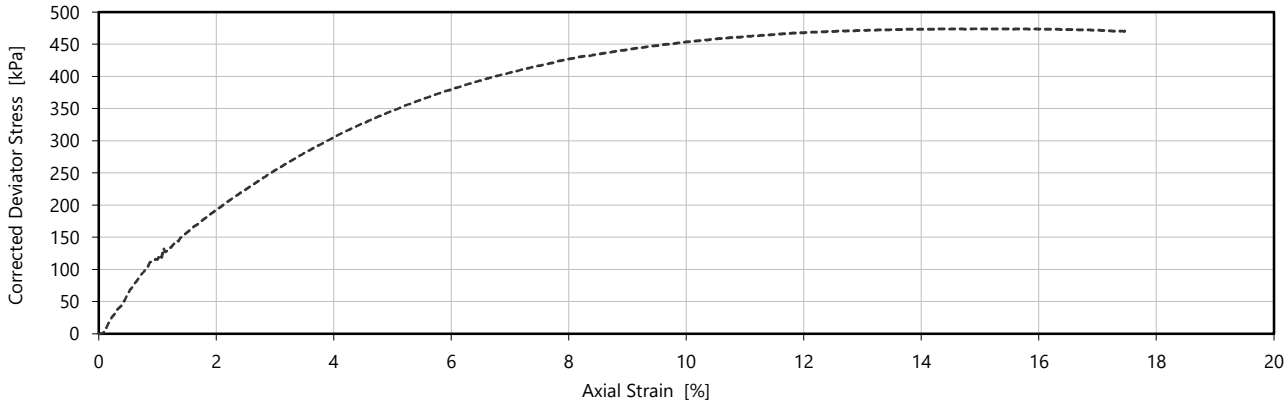
Tested offshore onboard DEME Neptune

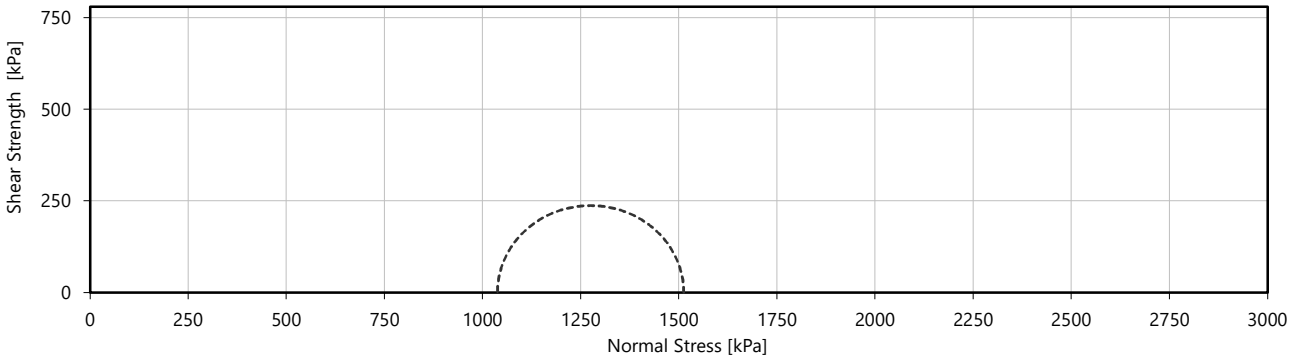
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	37.90
Specimen Description	Stiff brownish grey CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	37.90	Sample Reference	147





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.70		
Diameter [mm]	64.65		
Bulk Density [Mg/m³]	2.104		
Specimen Water Content [%]	19.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.761		
Initial Voids Ratio	0.505		
Degree of Saturation [%]	102		
Application of Deviator Stress			
Cell Pressure [kPa]	1038		
Specimen Height [mm]	140.80		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	237		
Strain at Failure [%]	14.9		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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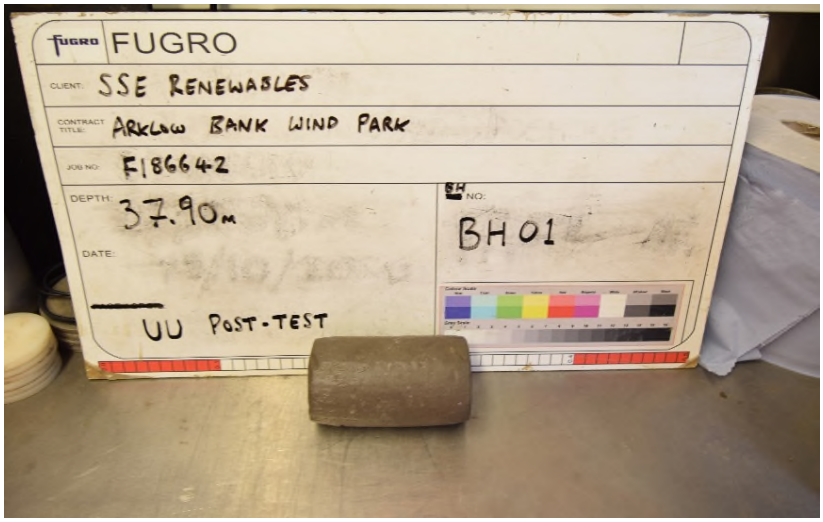
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	37.90
Specimen Description	Stiff brownish grey CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	37.90	Sample Reference	147



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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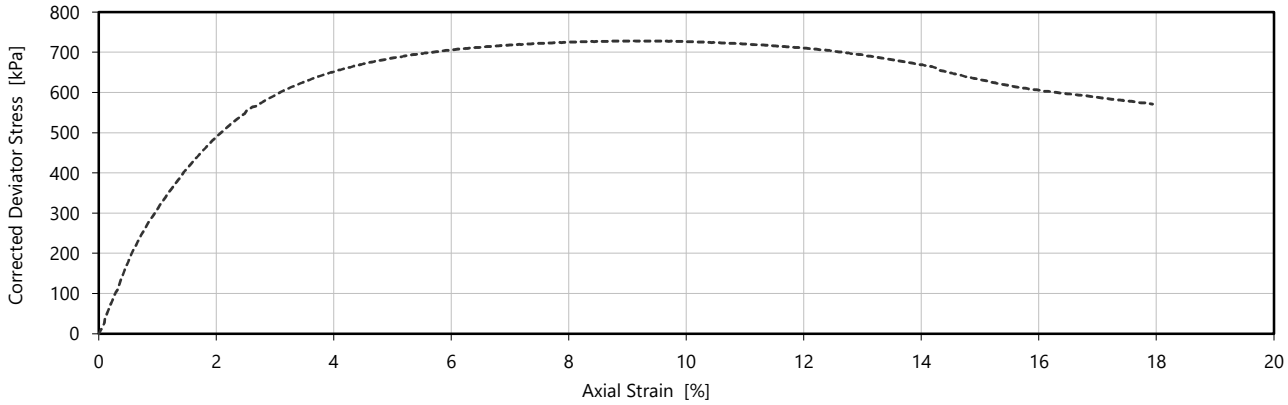
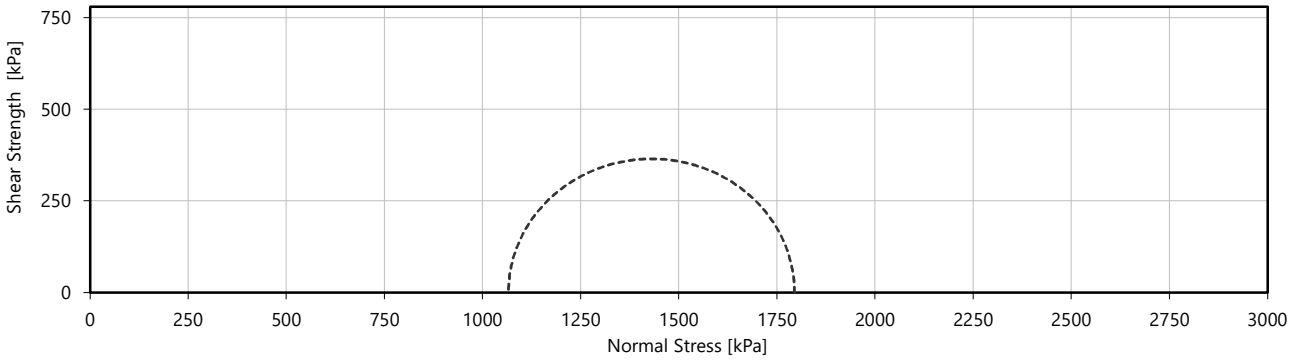
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	39.30
Specimen Description	Very stiff brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	39.32	Sample Reference	153





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	142.00		
Diameter [mm]	71.00		
Bulk Density [Mg/m³]	2.190		
Specimen Water Content [%]	13.0		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.938		
Initial Voids Ratio	0.367		
Degree of Saturation [%]	94		
Application of Deviator Stress			
Cell Pressure [kPa]	1066		
Specimen Height [mm]	142.10		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	364		
Strain at Failure [%]	9.1		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

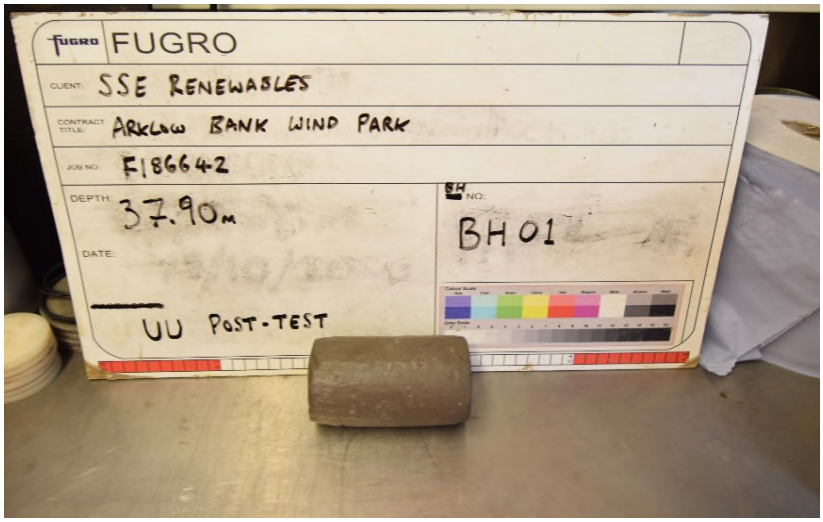
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	39.30
Specimen Description	Very stiff brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	39.32	Sample Reference	153



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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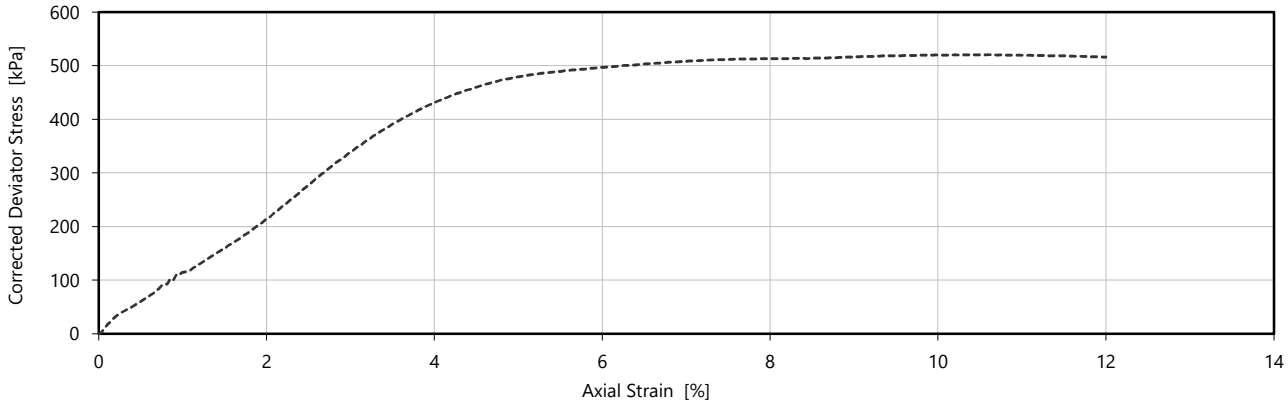
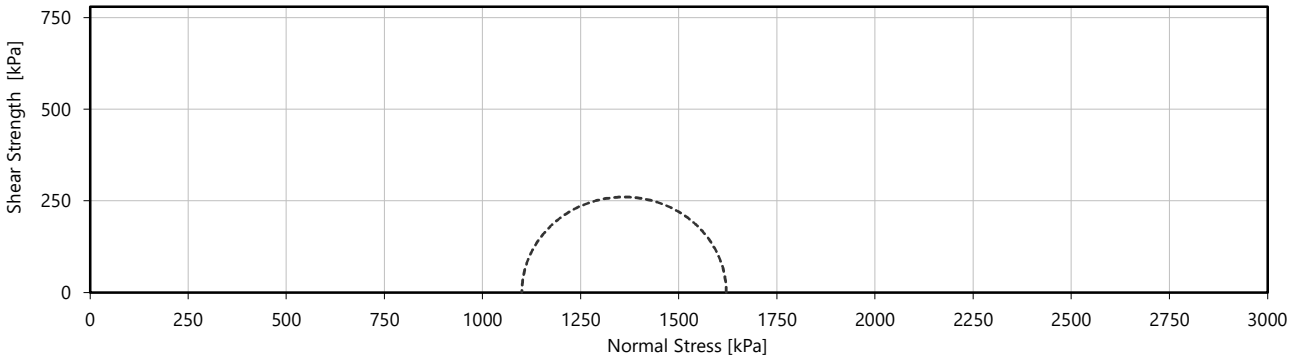
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	41.00
Specimen Description	Very stiff brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	41.00	Sample Reference	164





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	133.81		
Diameter [mm]	70.00		
Bulk Density [Mg/m³]	2.202		
Specimen Water Content [%]	18.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.858		
Initial Voids Ratio	0.426		
Degree of Saturation [%]	115		
Application of Deviator Stress			
Cell Pressure [kPa]	1100		
Specimen Height [mm]	133.91		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	260		
Strain at Failure [%]	10.6		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

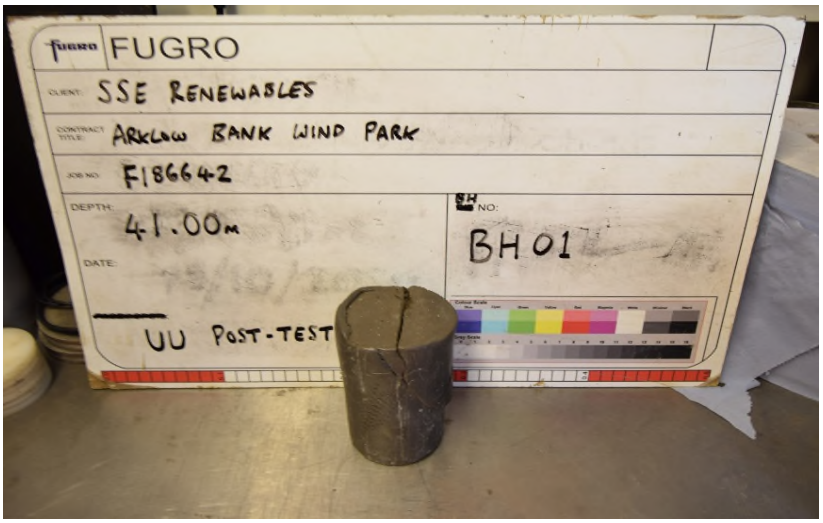
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

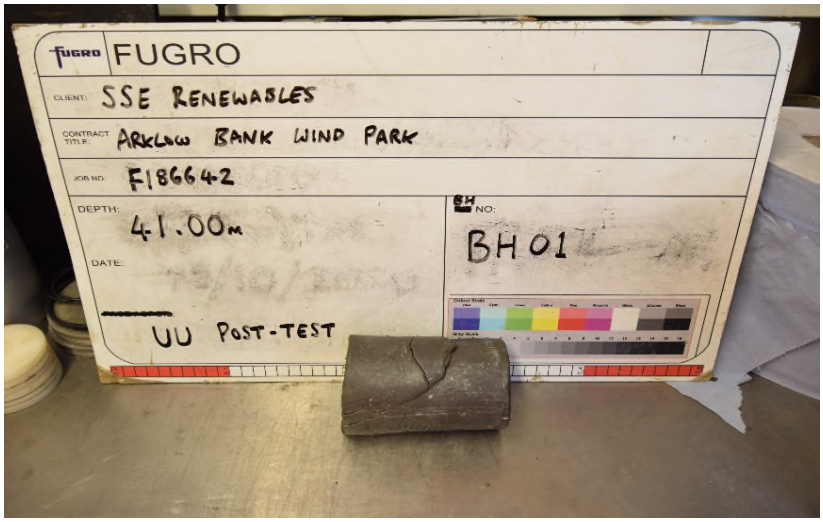
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	41.00
Specimen Description	Very stiff brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	41.00	Sample Reference	164



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

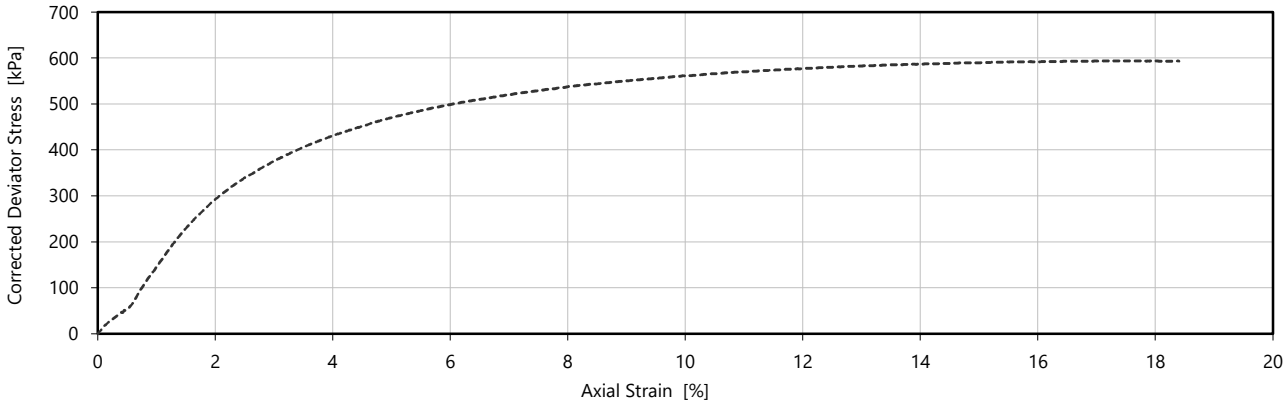
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

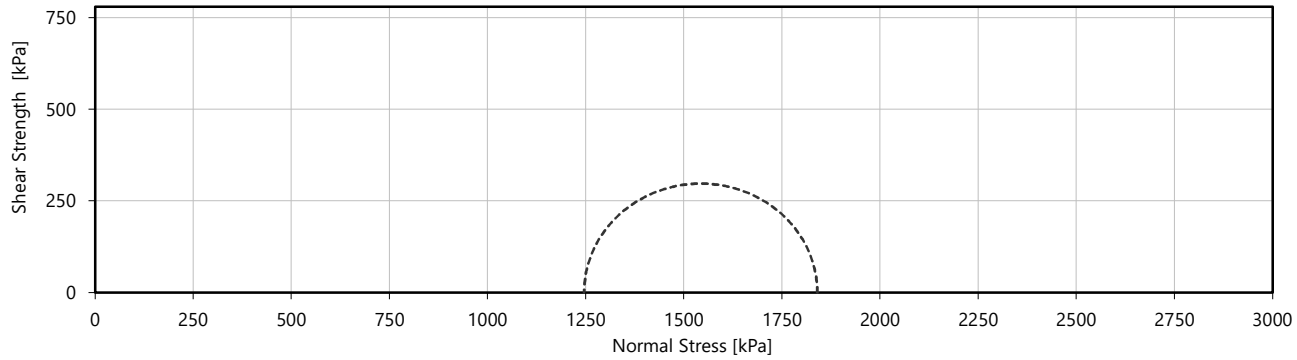
Plate 5.186

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	48.30
Specimen Description	Stiff dark brown slightly sandy gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	48.32	Sample Reference	193





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	220.67		
Diameter [mm]	101.29		
Bulk Density [Mg/m³]	2.290		
Specimen Water Content [%]	14.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	2.000		
Initial Voids Ratio	0.325		
Degree of Saturation [%]	118		
Application of Deviator Stress			
Cell Pressure [kPa]	1246		
Specimen Height [mm]	220.77		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	297		
Strain at Failure [%]	17.6		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	48.30
Specimen Description	Stiff dark brown slightly sandy gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	48.32	Sample Reference	193



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

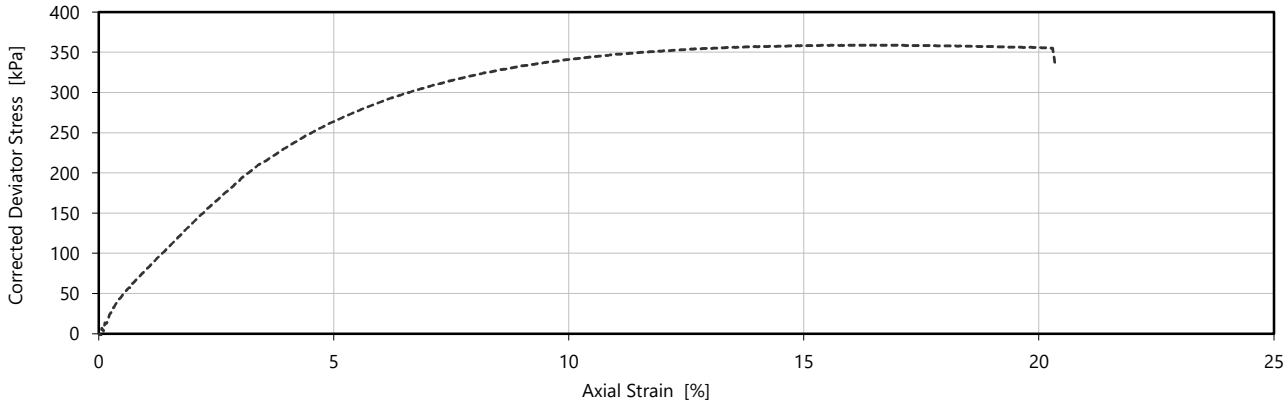
Tested offshore onboard DEME Neptune

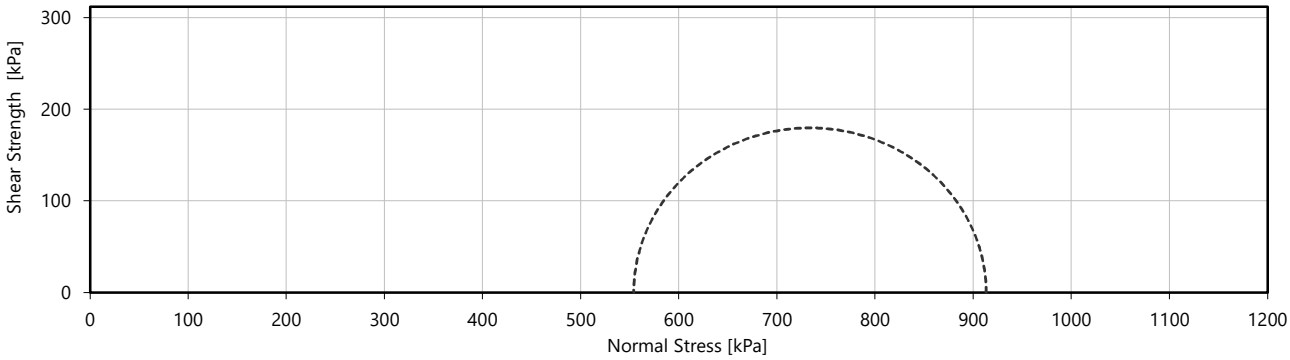
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	17.56
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	17.62	Sample Reference	32





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.28		
Diameter [mm]	71.56		
Bulk Density [Mg/m³]	2.170		
Specimen Water Content [%]	16.3		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.866		
Initial Voids Ratio	0.421		
Degree of Saturation [%]	103		
Application of Deviator Stress			
Cell Pressure [kPa]	554		
Specimen Height [mm]	140.38		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	180		
Strain at Failure [%]	16.5		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH01
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	17.56
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	17.62	Sample Reference	32



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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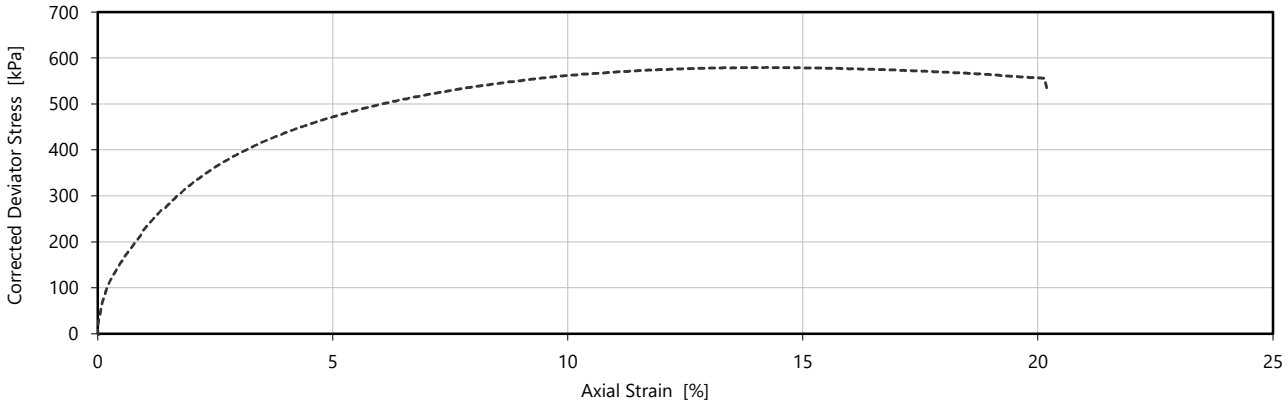
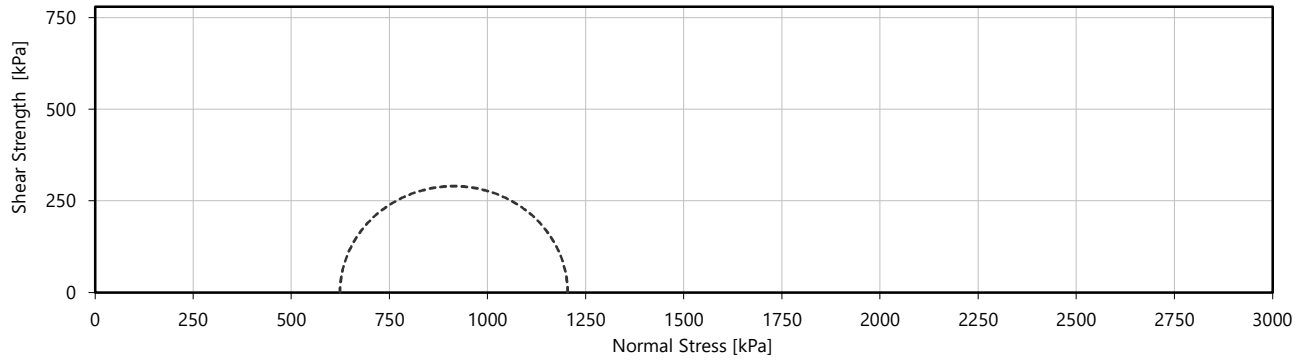
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.10
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.11	Sample Reference	45





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.86		
Diameter [mm]	71.74		
Bulk Density [Mg/m³]	2.173		
Specimen Water Content [%]	19.6		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.817		
Initial Voids Ratio	0.459		
Degree of Saturation [%]	113		
Application of Deviator Stress			
Cell Pressure [kPa]	624		
Specimen Height [mm]	140.96		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	290		
Strain at Failure [%]	14.2		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.10
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.11	Sample Reference	45



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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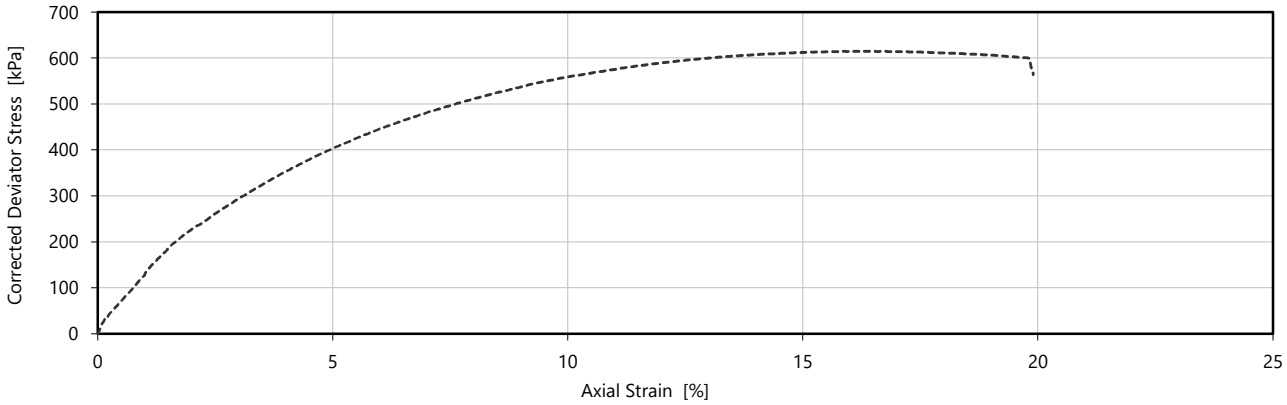
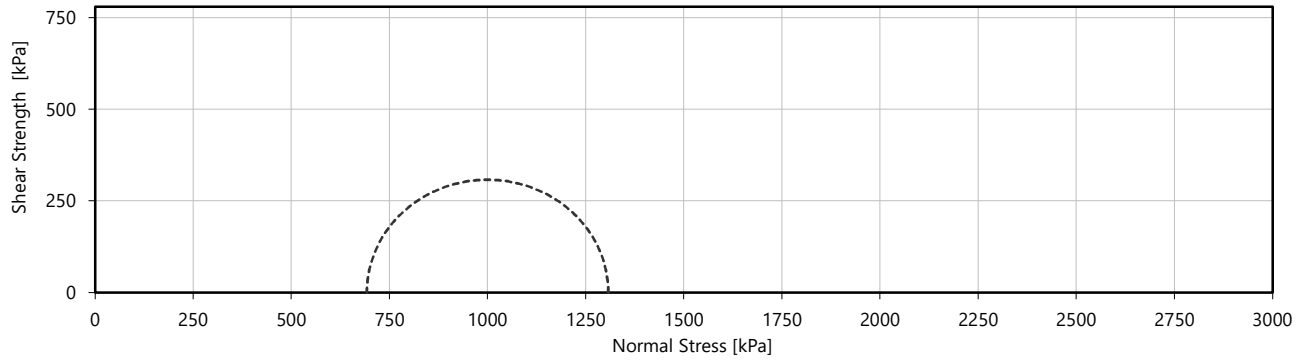
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	24.52
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	24.55	Sample Reference	57





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.96		
Diameter [mm]	72.04		
Bulk Density [Mg/m³]	2.162		
Specimen Water Content [%]	24.4		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.737		
Initial Voids Ratio	0.525		
Degree of Saturation [%]	123		
Application of Deviator Stress			
Cell Pressure [kPa]	693		
Specimen Height [mm]	141.06		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	307		
Strain at Failure [%]	16.4		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

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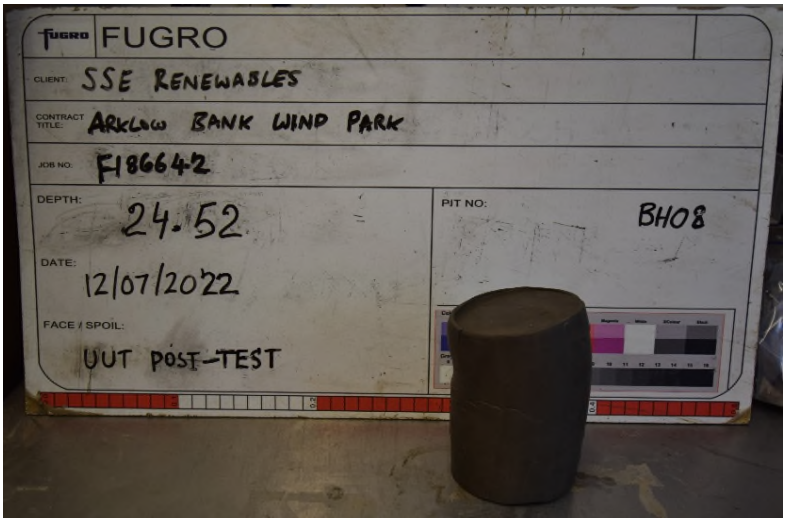
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	24.52
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	24.55	Sample Reference	57



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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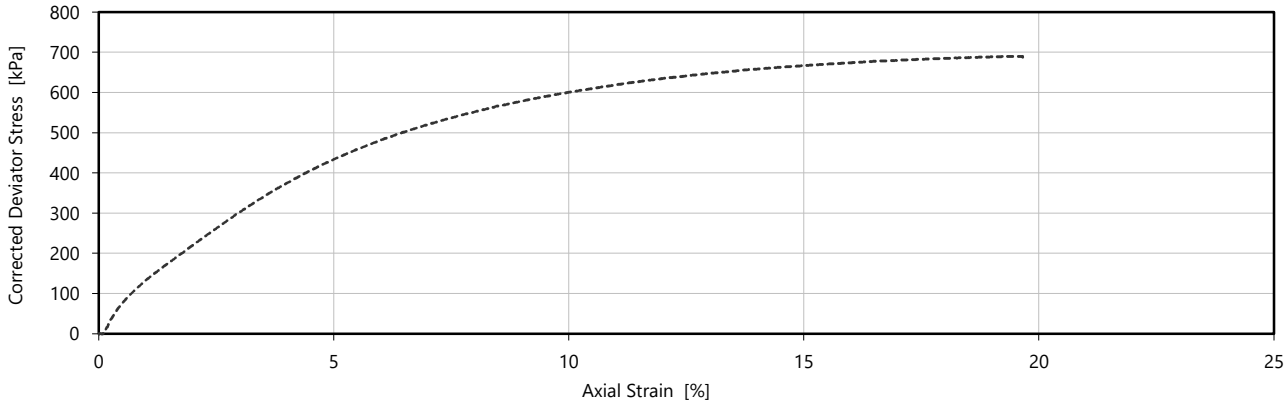
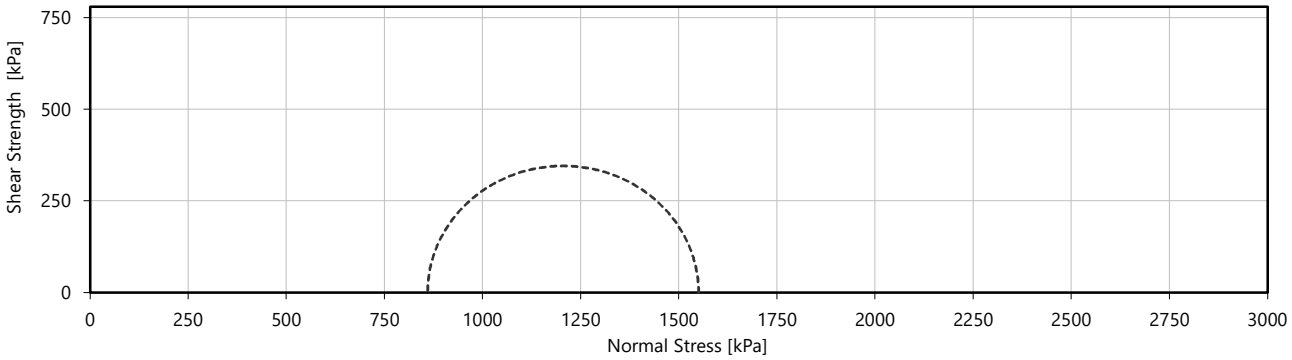
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	32.89
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	32.94	Sample Reference	91





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	204.23		
Diameter [mm]	101.38		
Bulk Density [Mg/m³]	2.274		
Specimen Water Content [%]	12.9		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	2.013		
Initial Voids Ratio	0.316		
Degree of Saturation [%]	108		
Application of Deviator Stress			
Cell Pressure [kPa]	860		
Specimen Height [mm]	204.33		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	345		
Strain at Failure [%]	19.7		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH08
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	32.89
Specimen Description	Firm dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	32.94	Sample Reference	91



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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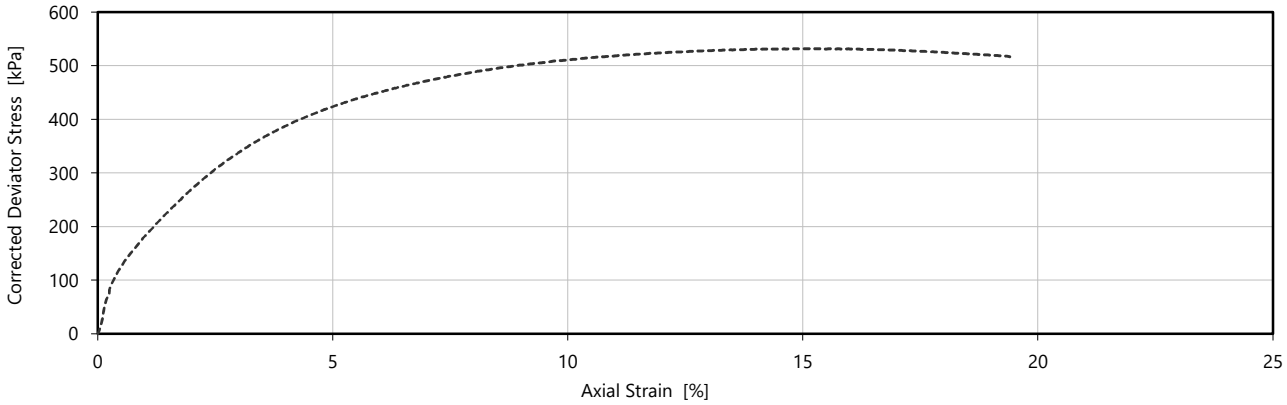
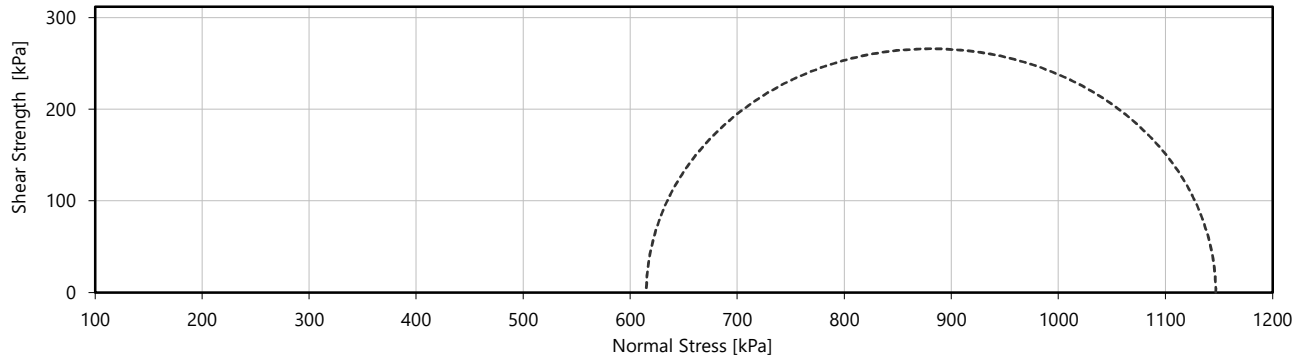
Plate 5.196

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH09
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	14.80
Specimen Description	Stiff dark brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	14.81	Sample Reference	32





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	139.44		
Diameter [mm]	71.60		
Bulk Density [Mg/m³]	2.144		
Specimen Water Content [%]	18.6		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.808		
Initial Voids Ratio	0.466		
Degree of Saturation [%]	106		
Application of Deviator Stress			
Cell Pressure [kPa]	615		
Specimen Height [mm]	139.54		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	266		
Strain at Failure [%]	15.4		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH09
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	14.80
Specimen Description	Stiff dark brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	14.81	Sample Reference	32



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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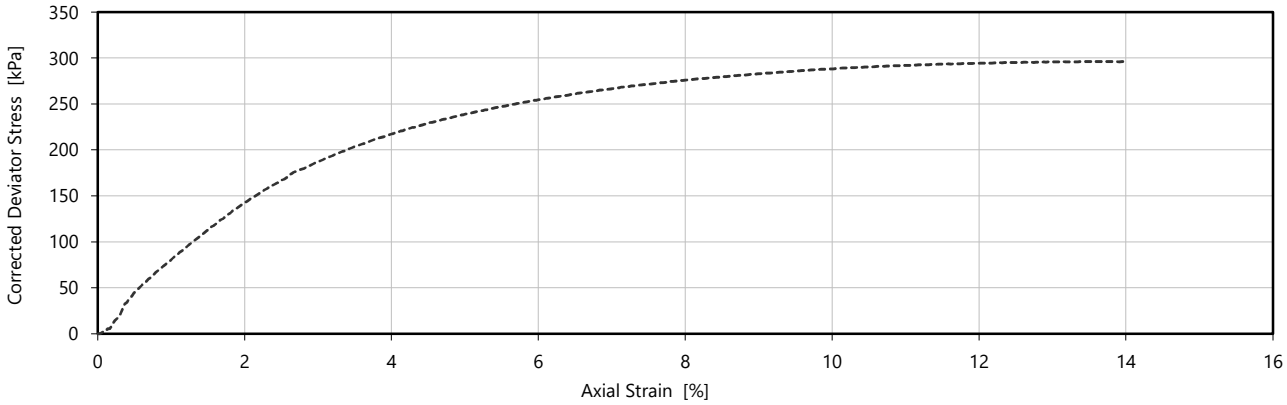
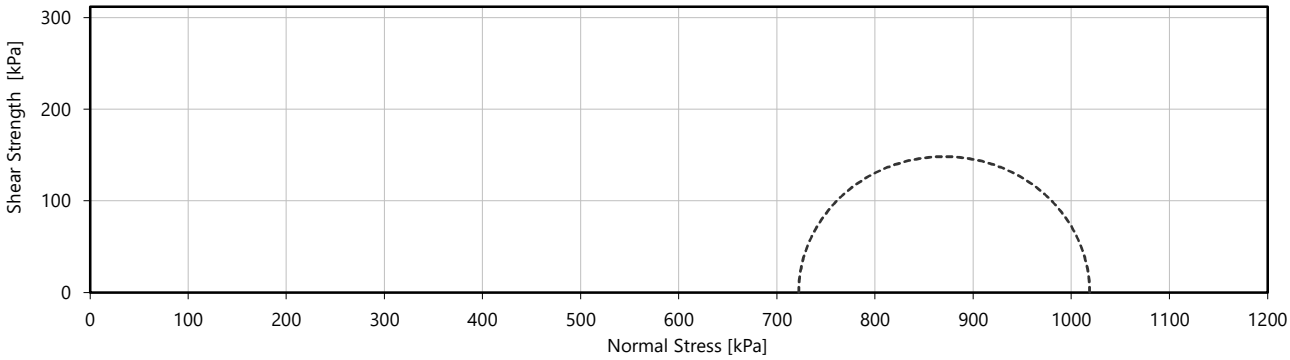
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH09
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	20.16
Specimen Description	Firm dark brown sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	20.17	Sample Reference	32





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.34		
Diameter [mm]	71.69		
Bulk Density [Mg/m³]	2.277		
Specimen Water Content [%]	16.9		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.949		
Initial Voids Ratio	0.360		
Degree of Saturation [%]	124		
Application of Deviator Stress			
Cell Pressure [kPa]	722		
Specimen Height [mm]	140.44		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	148		
Strain at Failure [%]	14.0		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

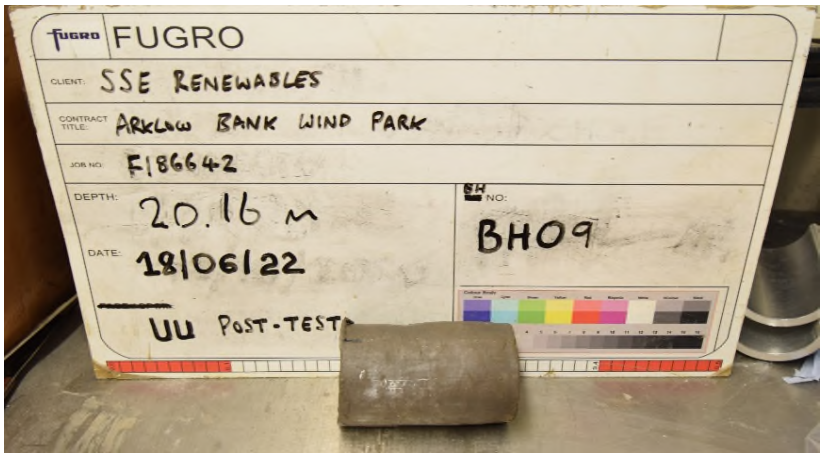
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH09
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	20.16
Specimen Description	Firm dark brown sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	20.17	Sample Reference	32



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

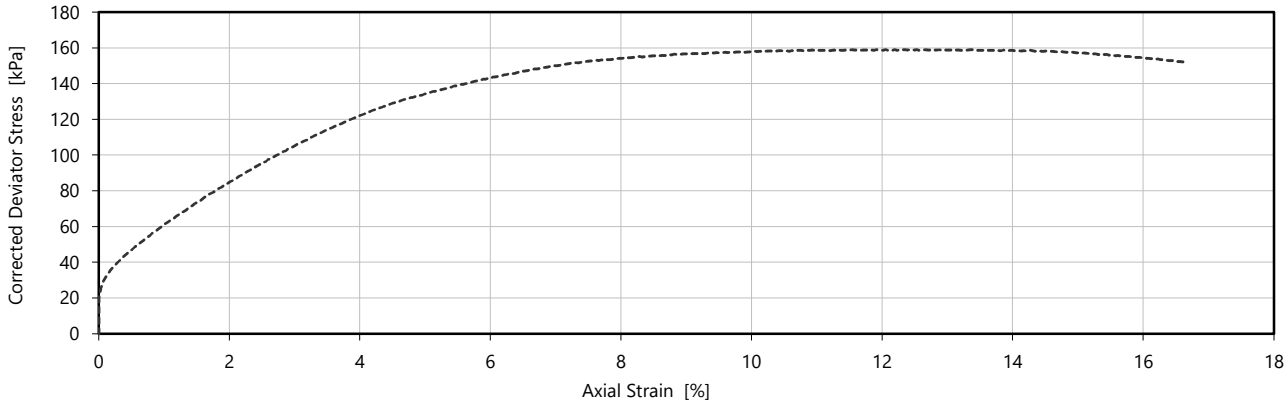
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

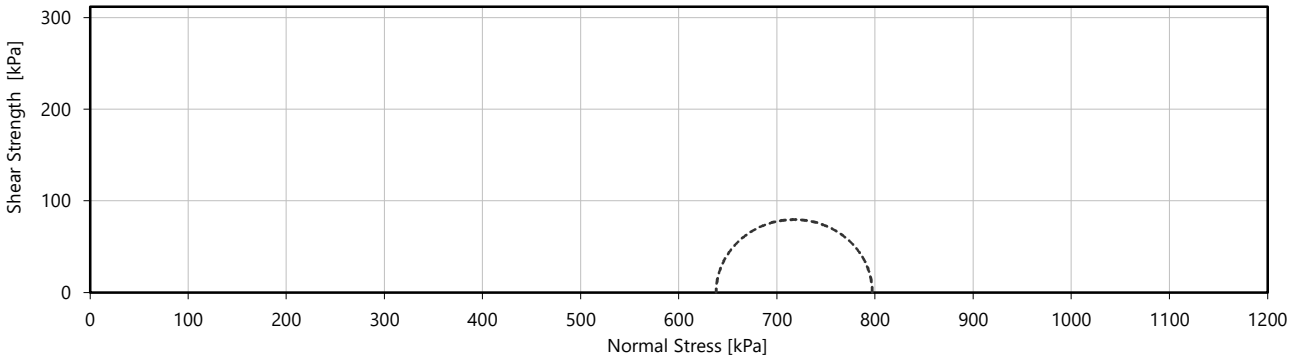
Plate 5.200

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	15.10
Specimen Description	Stiff dark grey silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	15.11	Sample Reference	26





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.78		
Diameter [mm]	1.98		
Bulk Density [Mg/m³]	1.977		
Specimen Water Content [%]	27.9		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.546		
Initial Voids Ratio	0.714		
Degree of Saturation [%]	103		
Application of Deviator Stress			
Cell Pressure [kPa]	638		
Specimen Height [mm]	140.88		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	80		
Strain at Failure [%]	12.5		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	15.10
Specimen Description	Stiff dark grey silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	15.11	Sample Reference	26



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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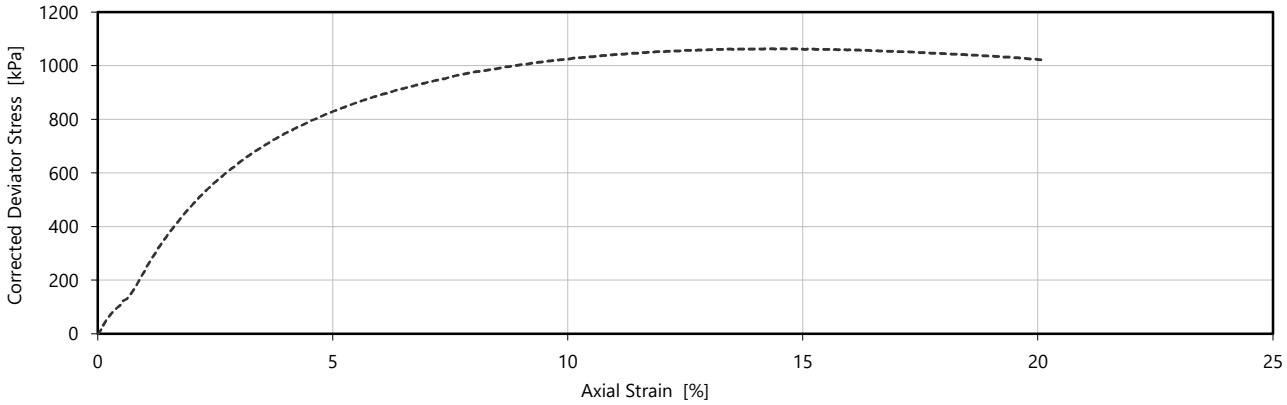
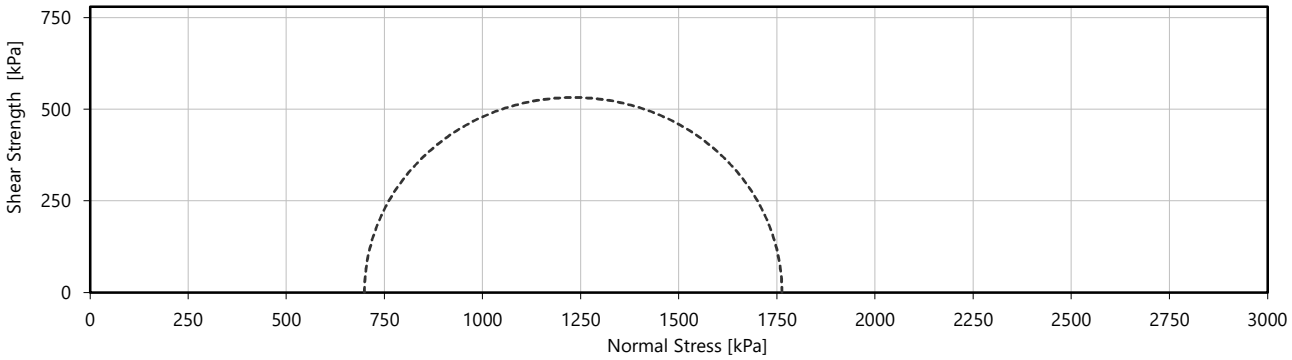
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	18.20
Specimen Description	Stiff grey slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	18.21	Sample Reference	35





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	131.41		
Diameter [mm]	72.31		
Bulk Density [Mg/m³]	2.323		
Specimen Water Content [%]	20.1		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.934		
Initial Voids Ratio	0.370		
Degree of Saturation [%]	144		
Application of Deviator Stress			
Cell Pressure [kPa]	699		
Specimen Height [mm]	131.51		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	532		
Strain at Failure [%]	14.3		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

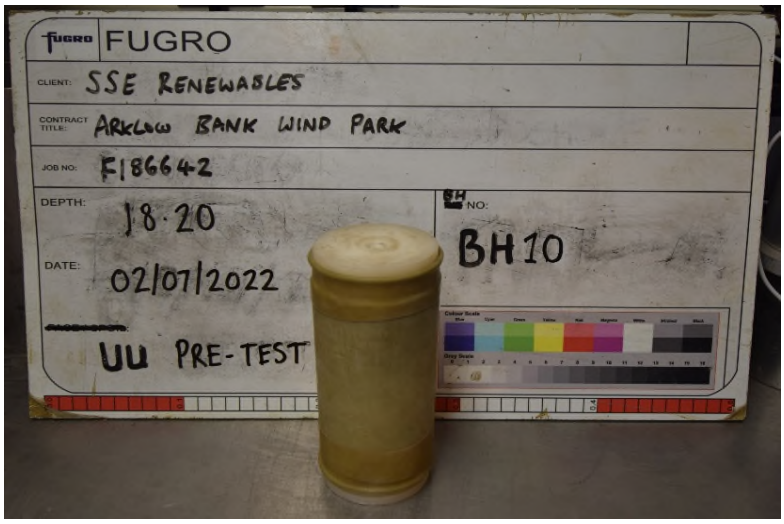
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	18.20
Specimen Description	Stiff grey slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	18.21	Sample Reference	35



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

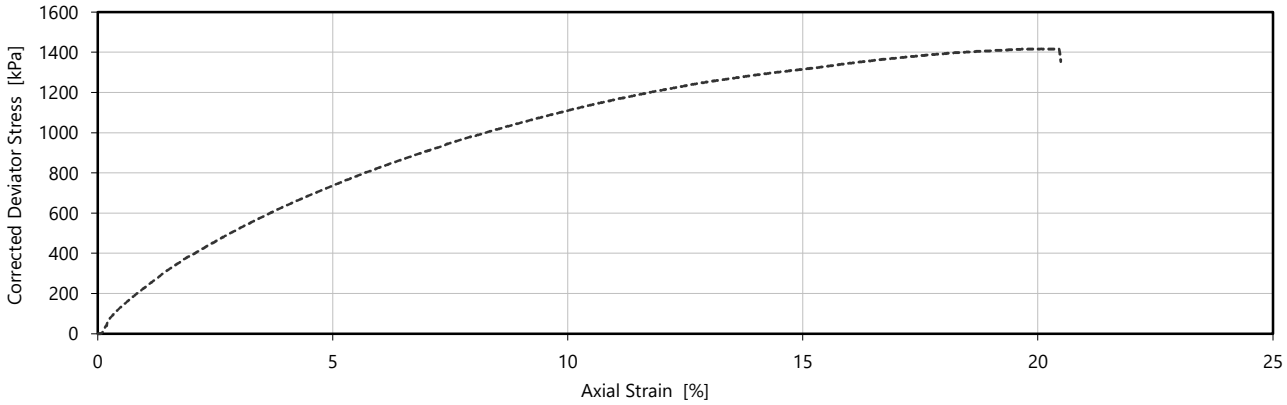
Tested offshore onboard DEME Neptune

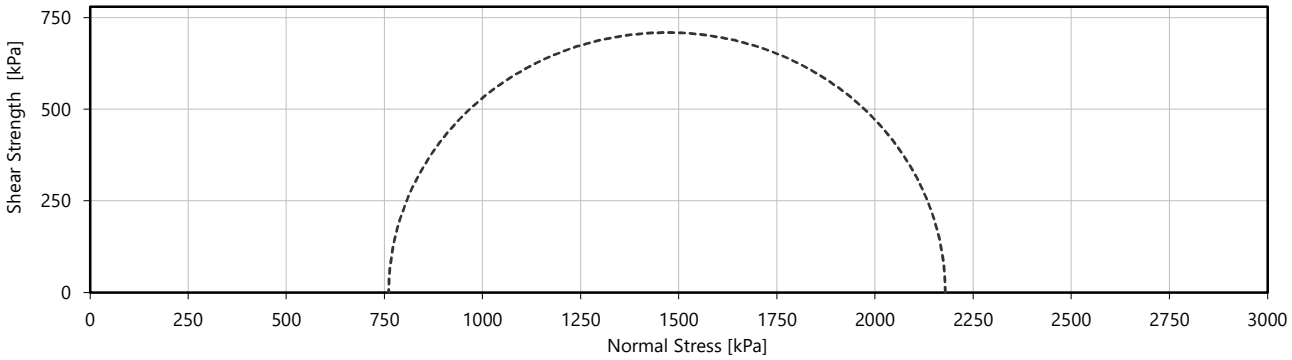
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.25
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.26	Sample Reference	43





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	209.12		
Diameter [mm]	101.04		
Bulk Density [Mg/m³]	2.261		
Specimen Water Content [%]	19.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.891		
Initial Voids Ratio	0.401		
Degree of Saturation [%]	129		
Application of Deviator Stress			
Cell Pressure [kPa]	761		
Specimen Height [mm]	209.22		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	709		
Strain at Failure [%]	20.4		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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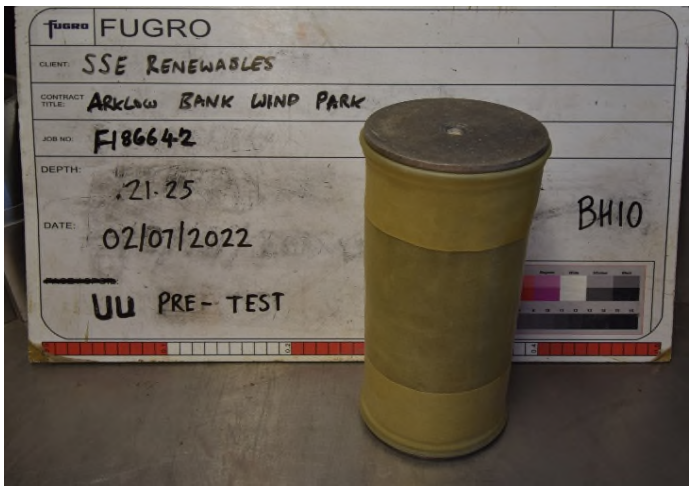
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.25
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.26	Sample Reference	43



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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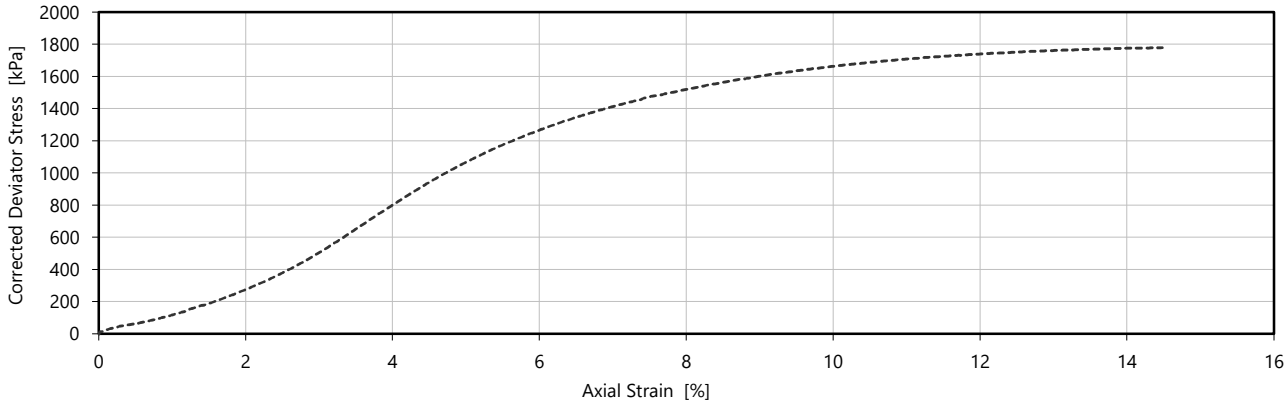
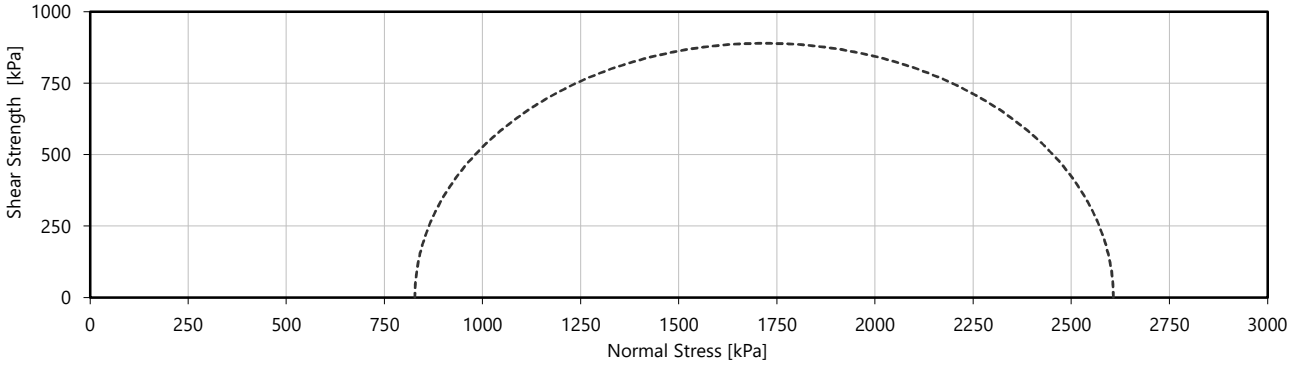
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	24.57
Specimen Description	Very stiff slightly gravelly sandy SILT			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	24.61	Sample Reference	43





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	200.50		
Diameter [mm]	102.07		
Bulk Density [Mg/m³]	2.353		
Specimen Water Content [%]	10.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	2.130		
Initial Voids Ratio	0.244		
Degree of Saturation [%]	113		
Application of Deviator Stress			
Cell Pressure [kPa]	827		
Specimen Height [mm]	200.60		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	890		
Strain at Failure [%]	14.5		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

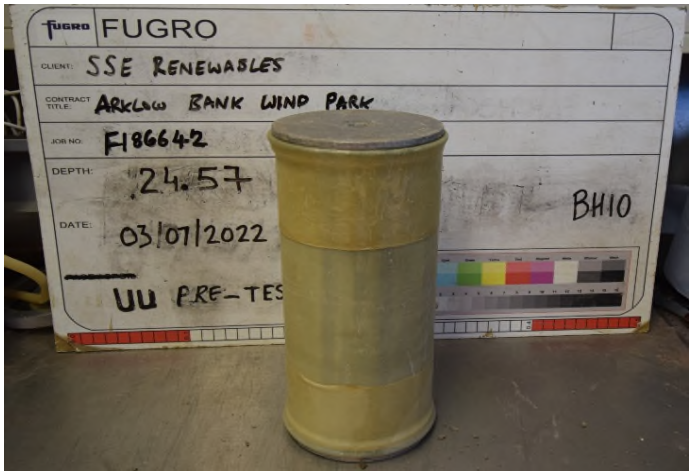
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	24.57
Specimen Description	Very stiff slightly gravelly sandy SILT			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	24.61	Sample Reference	43



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

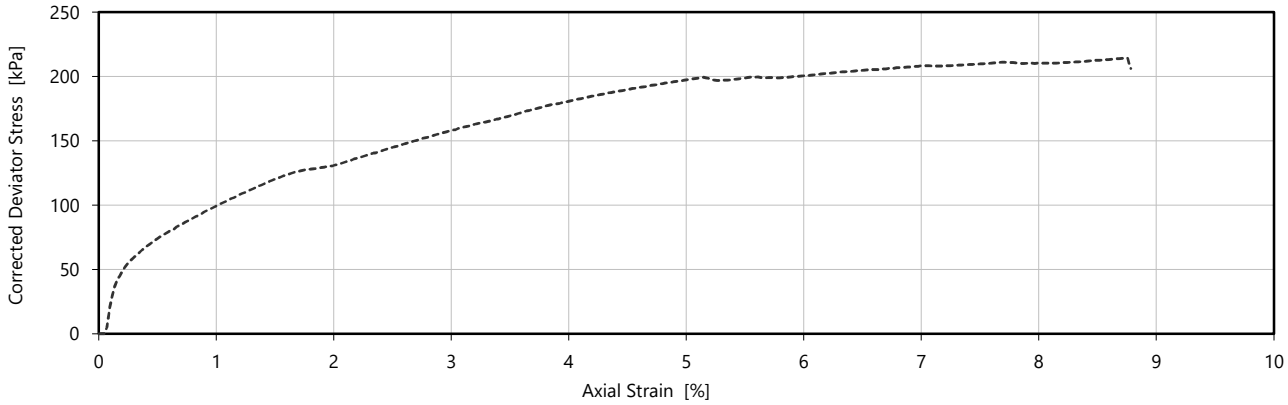
Tested offshore onboard DEME Neptune

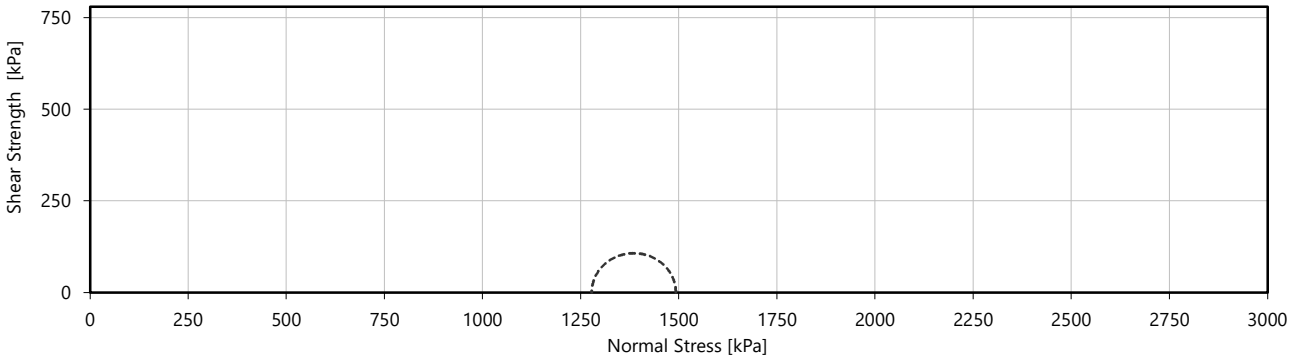
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	47.10
Specimen Description	Stiff dark grey CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	47.13	Sample Reference	117





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	199.88		
Diameter [mm]	100.20		
Bulk Density [Mg/m³]	2.060		
Specimen Water Content [%]	24.7		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.652		
Initial Voids Ratio	0.604		
Degree of Saturation [%]	108		
Application of Deviator Stress			
Cell Pressure [kPa]	1278		
Specimen Height [mm]	199.98		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	107		
Strain at Failure [%]	8.8		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped due to sample shear. Moisture content taken from adjacent sample at 46.90 m.				

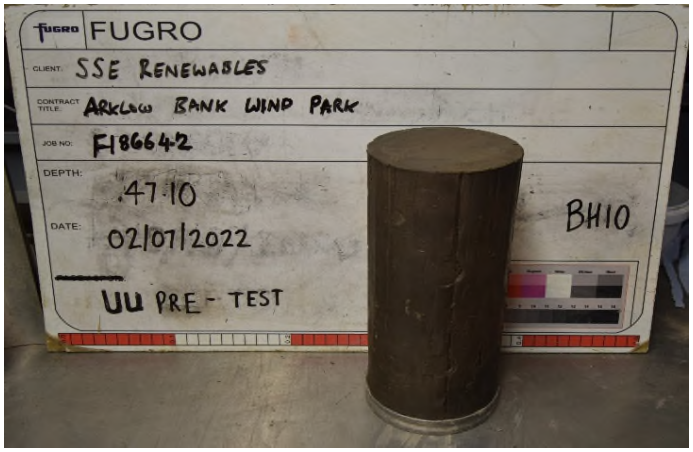
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH10
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	47.10
Specimen Description	Stiff dark grey CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	47.13	Sample Reference	117



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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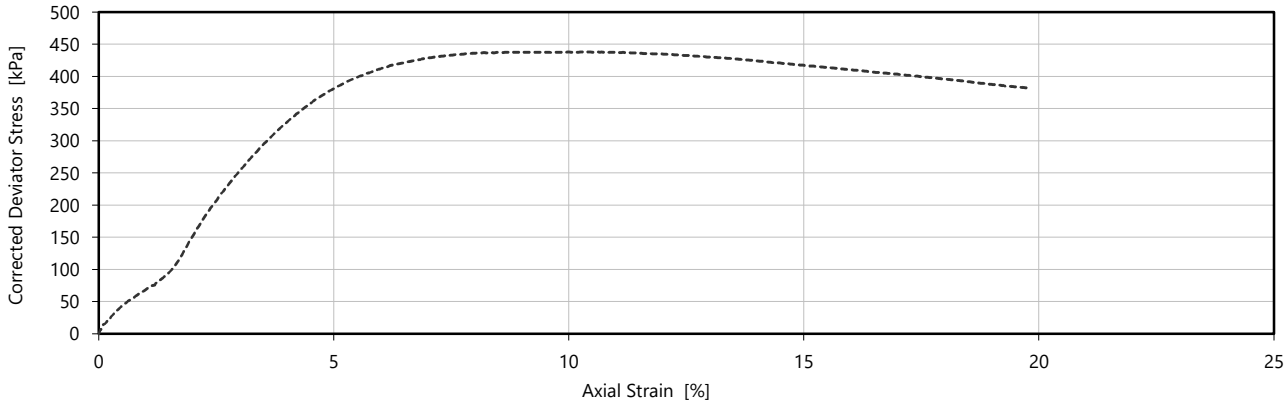
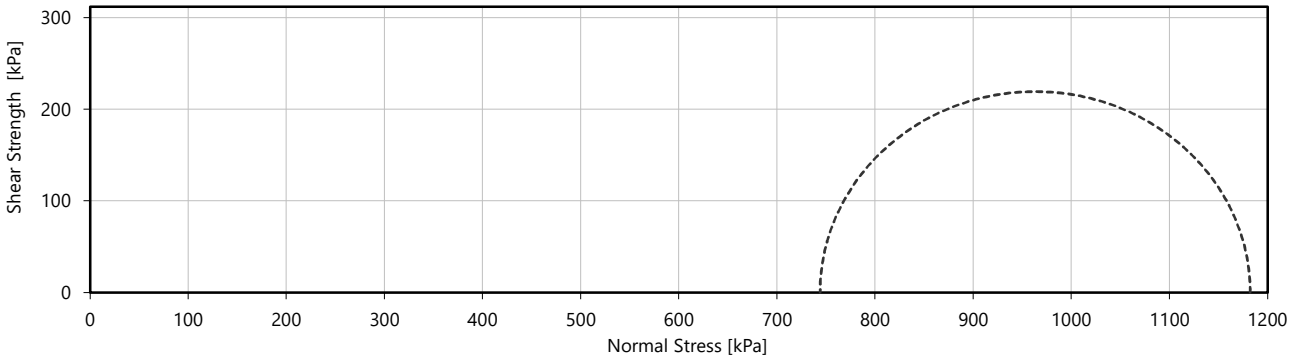
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	26.59
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	26.60	Sample Reference	46





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	141.84		
Diameter [mm]	71.53		
Bulk Density [Mg/m³]	2.127		
Specimen Water Content [%]	21.6		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.749		
Initial Voids Ratio	0.516		
Degree of Saturation [%]	111		
Application of Deviator Stress			
Cell Pressure [kPa]	744		
Specimen Height [mm]	141.94		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	219		
Strain at Failure [%]	10.3		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	26.59
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	26.60	Sample Reference	46

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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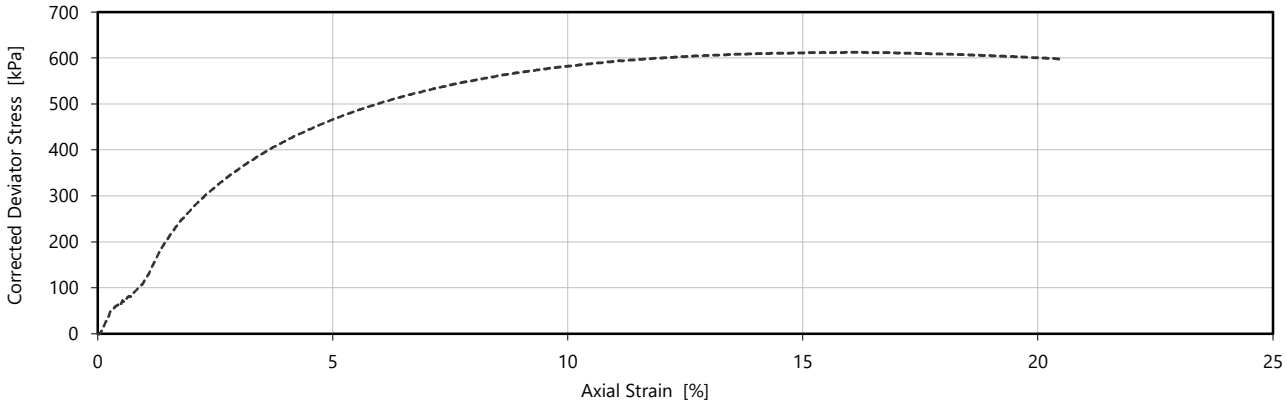
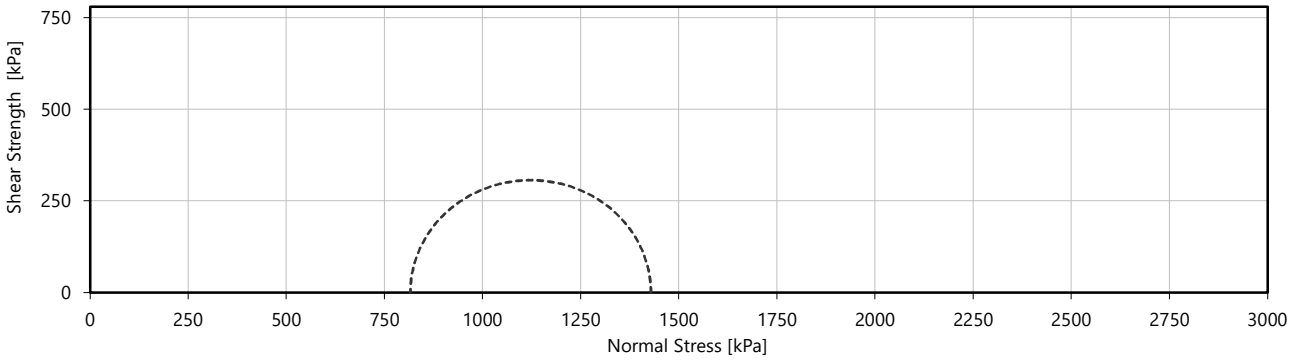
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.20
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	30.26	Sample Reference	61





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	141.94		
Diameter [mm]	72.42		
Bulk Density [Mg/m³]	2.131		
Specimen Water Content [%]	16.9		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.823		
Initial Voids Ratio	0.453		
Degree of Saturation [%]	99		
Application of Deviator Stress			
Cell Pressure [kPa]	816		
Specimen Height [mm]	142.04		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	306		
Strain at Failure [%]	16.3		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.20
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	30.26	Sample Reference	61

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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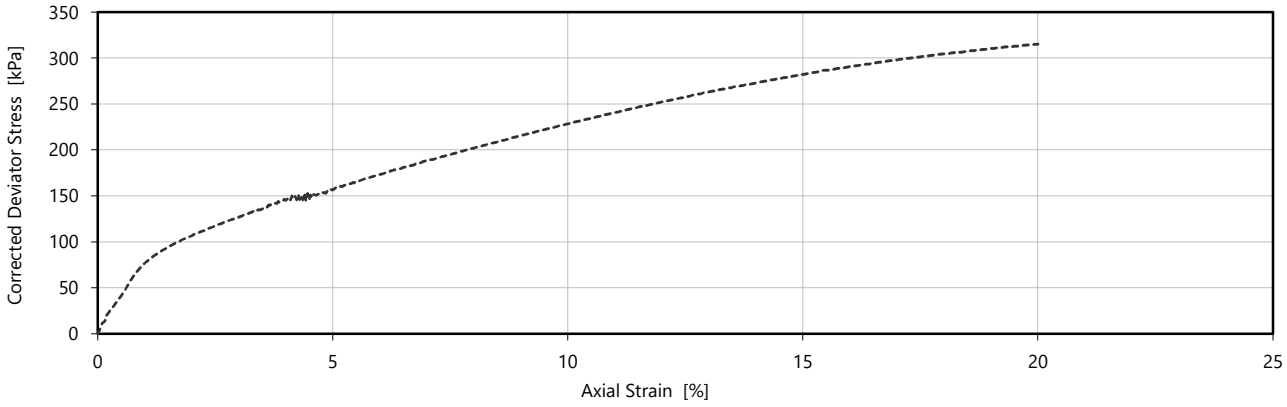
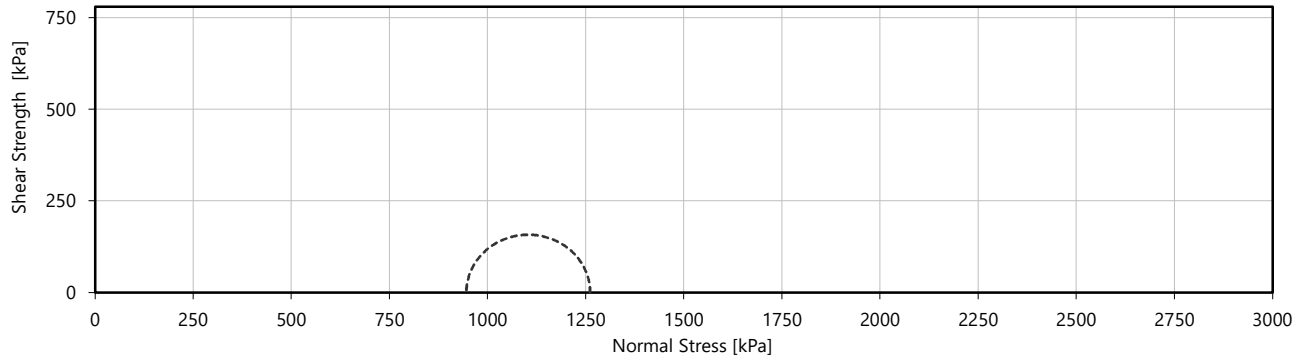
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	36.70
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	36.70	Sample Reference	82





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.17		
Diameter [mm]	66.60		
Bulk Density [Mg/m³]	2.153		
Specimen Water Content [%]	13.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.896		
Initial Voids Ratio	0.397		
Degree of Saturation [%]	90		
Application of Deviator Stress			
Cell Pressure [kPa]	946		
Specimen Height [mm]	140.27		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	158		
Strain at Failure [%]	20.0		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Load readings affected by vessel jacking operations at ~4% strain.				

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	36.70
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	36.70	Sample Reference	82

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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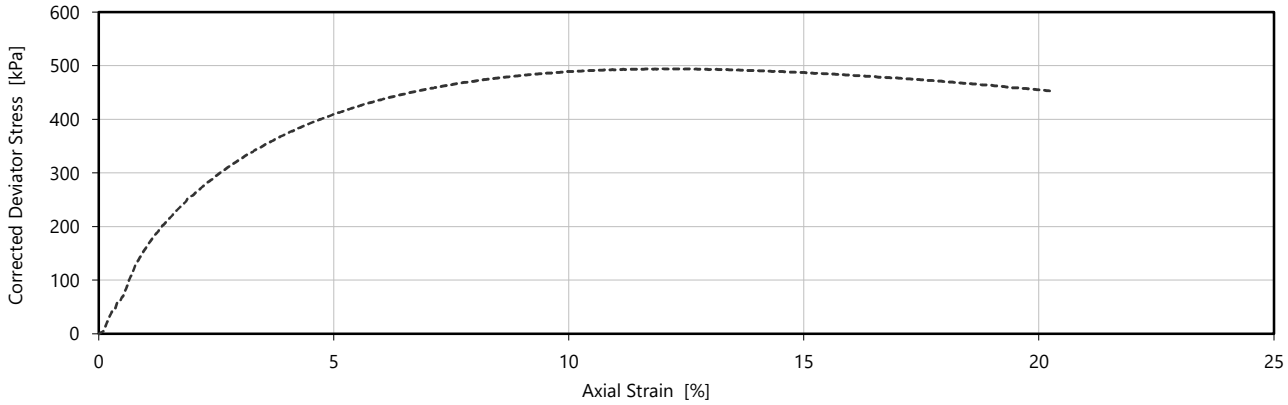
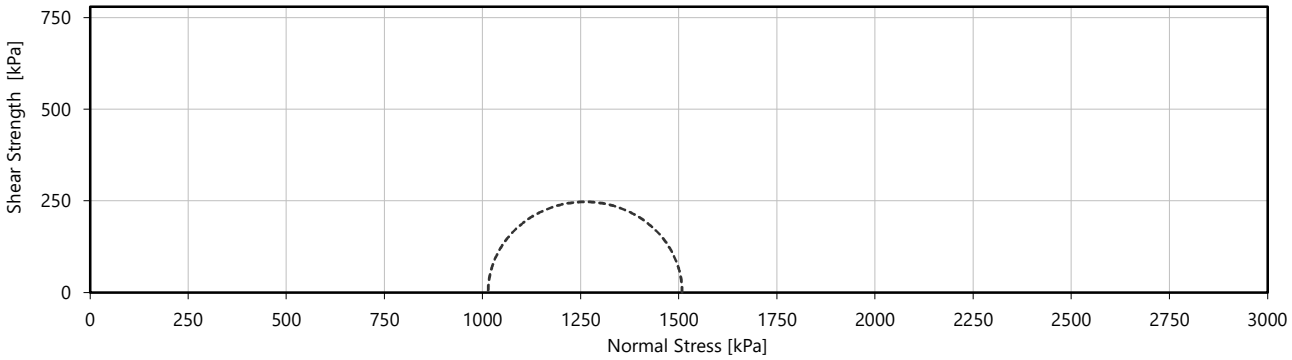
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	40.09
Specimen Description	Stiff dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	40.11	Sample Reference	99





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	139.54		
Diameter [mm]	70.11		
Bulk Density [Mg/m³]	2.302		
Specimen Water Content [%]	16.0		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.984		
Initial Voids Ratio	0.335		
Degree of Saturation [%]	126		
Application of Deviator Stress			
Cell Pressure [kPa]	1014		
Specimen Height [mm]	139.64		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	247		
Strain at Failure [%]	12.0		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH12
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	40.09
Specimen Description	Stiff dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	40.11	Sample Reference	99

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

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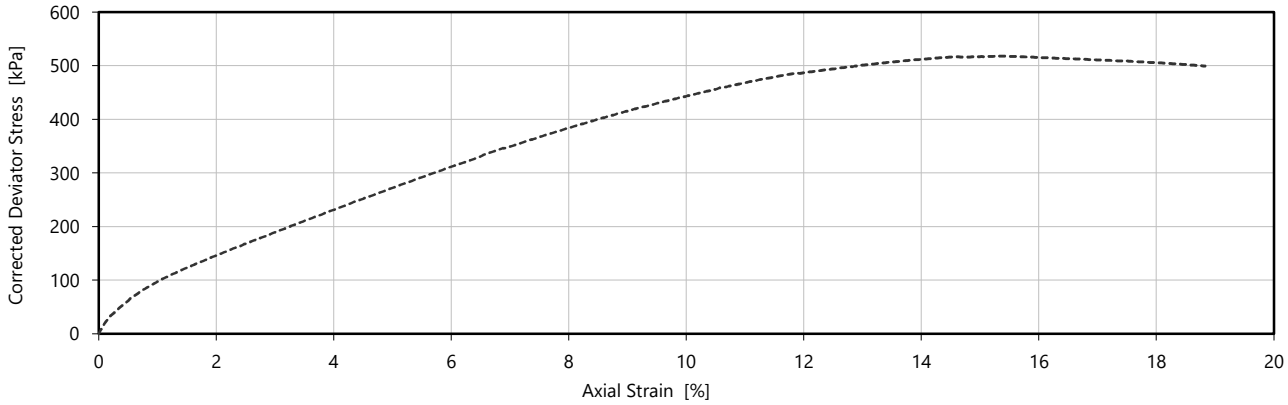
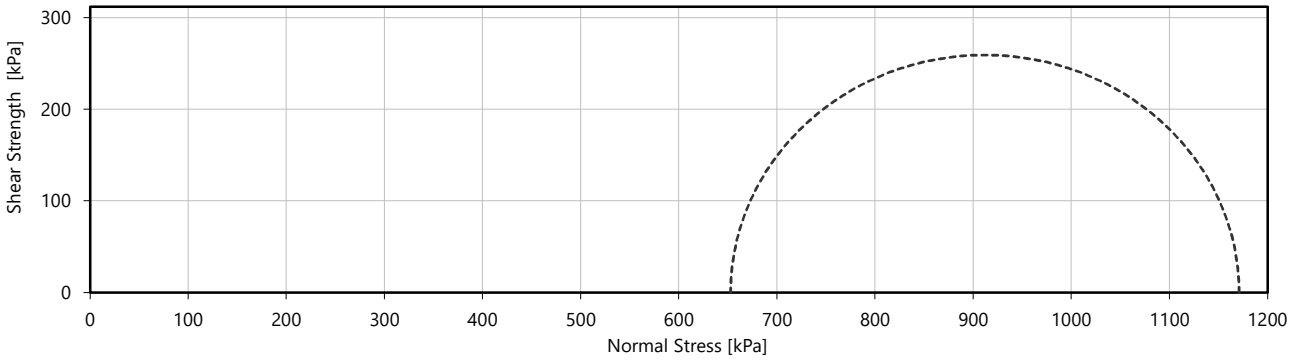
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH13
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.14
Specimen Description	Stiff dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.16	Sample Reference	23





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	144.19		
Diameter [mm]	72.38		
Bulk Density [Mg/m³]	2.186		
Specimen Water Content [%]	24.3		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.759		
Initial Voids Ratio	0.507		
Degree of Saturation [%]	127		
Application of Deviator Stress			
Cell Pressure [kPa]	653		
Specimen Height [mm]	144.29		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	259		
Strain at Failure [%]	15.4		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH13
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.14
Specimen Description	Stiff dark greyish brown slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.16	Sample Reference	23



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

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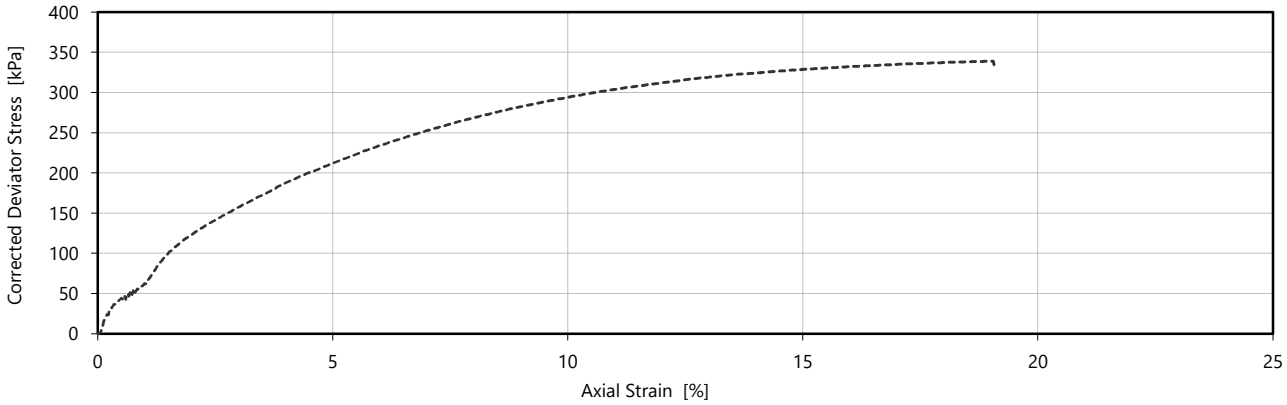
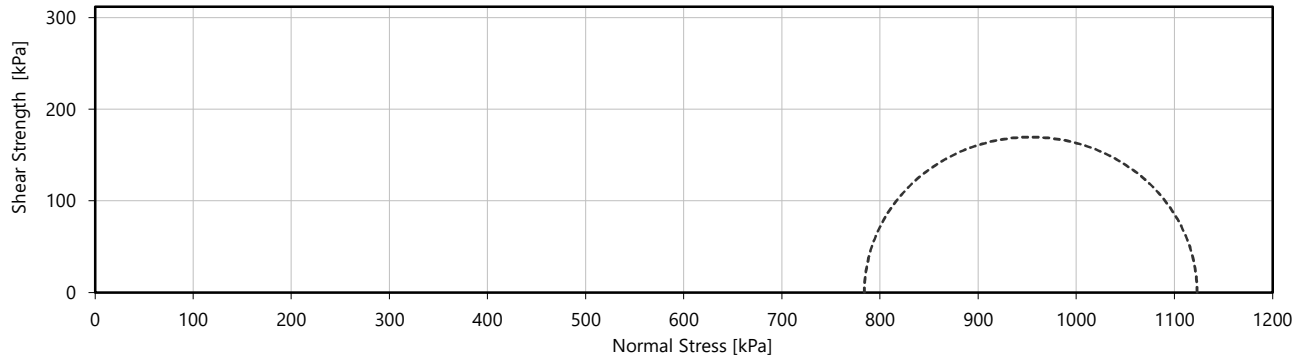
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH13
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	19.70
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	19.71	Sample Reference	45





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.96		
Diameter [mm]	72.11		
Bulk Density [Mg/m³]	2.064		
Specimen Water Content [%]	23.4		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.673		
Initial Voids Ratio	0.584		
Degree of Saturation [%]	106		
Application of Deviator Stress			
Cell Pressure [kPa]	784		
Specimen Height [mm]	141.06		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	170		
Strain at Failure [%]	19.0		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH13
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	19.70
Specimen Description	Stiff dark greyish brown CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	19.71	Sample Reference	45



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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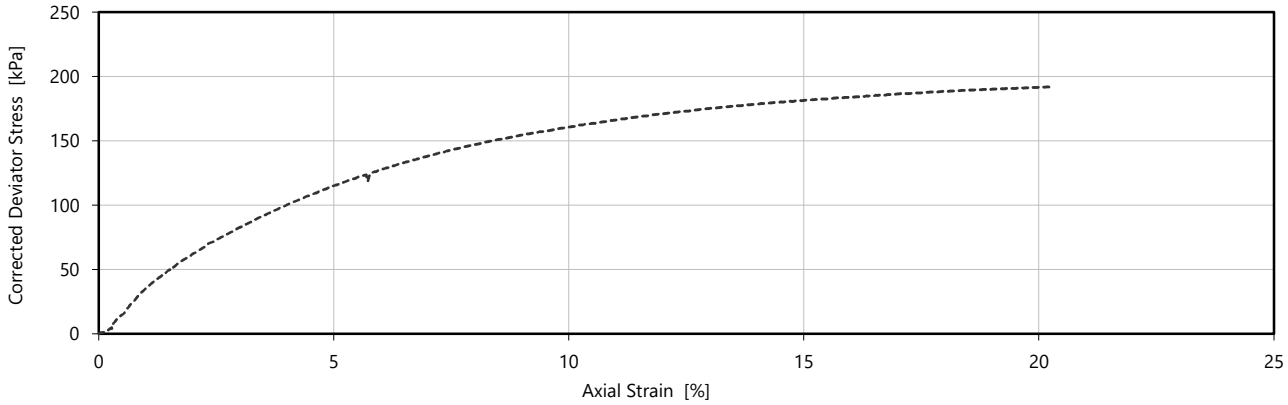
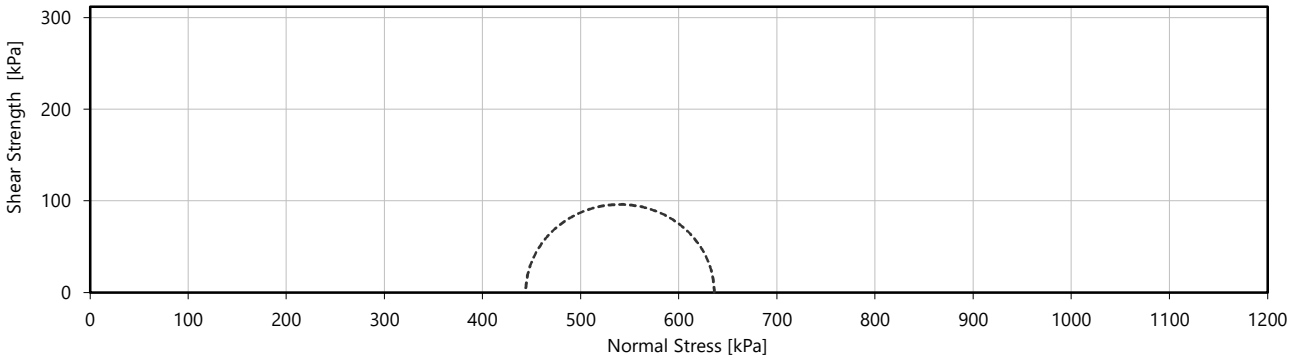
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	7.65
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	7.66	Sample Reference	16





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.96		
Diameter [mm]	72.45		
Bulk Density [Mg/m³]	2.172		
Specimen Water Content [%]	16.8		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.859		
Initial Voids Ratio	0.426		
Degree of Saturation [%]	105		
Application of Deviator Stress			
Cell Pressure [kPa]	444		
Specimen Height [mm]	141.06		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	96		
Strain at Failure [%]	20.3		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	7.65
Specimen Description	Stiff slightly sandy silty CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	7.66	Sample Reference	16



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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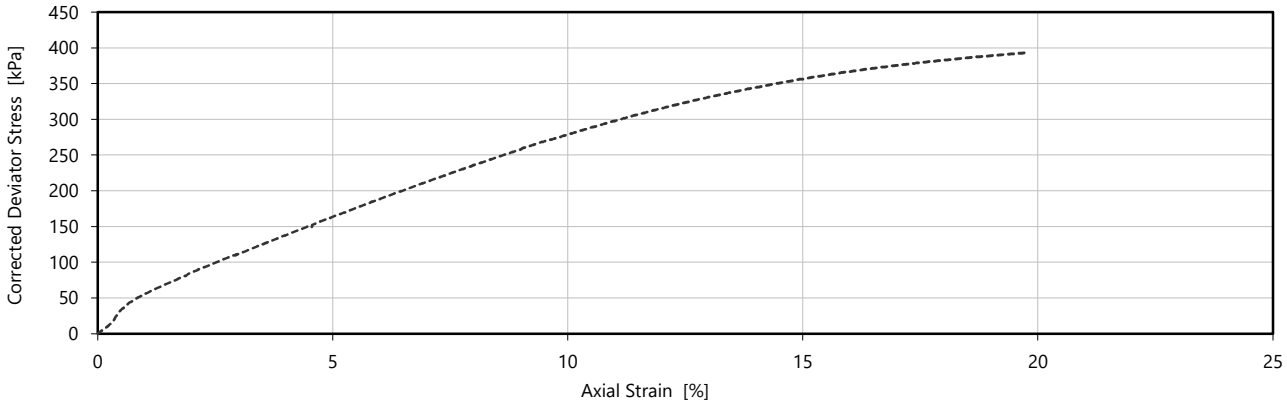
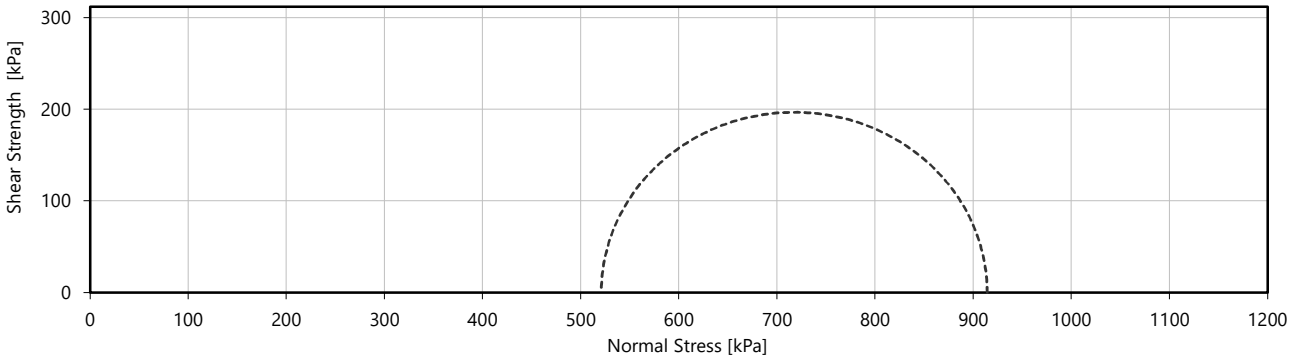
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	11.20
Specimen Description	Stiff dark greyish brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	11.24	Sample Reference	29





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.96		
Diameter [mm]	71.21		
Bulk Density [Mg/m³]	2.170		
Specimen Water Content [%]	17.0		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.855		
Initial Voids Ratio	0.429		
Degree of Saturation [%]	105		
Application of Deviator Stress			
Cell Pressure [kPa]	521		
Specimen Height [mm]	141.06		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	197		
Strain at Failure [%]	19.7		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	11.20
Specimen Description	Stiff dark greyish brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	11.24	Sample Reference	29



Post Test	Vertical

Photo Unavailable

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

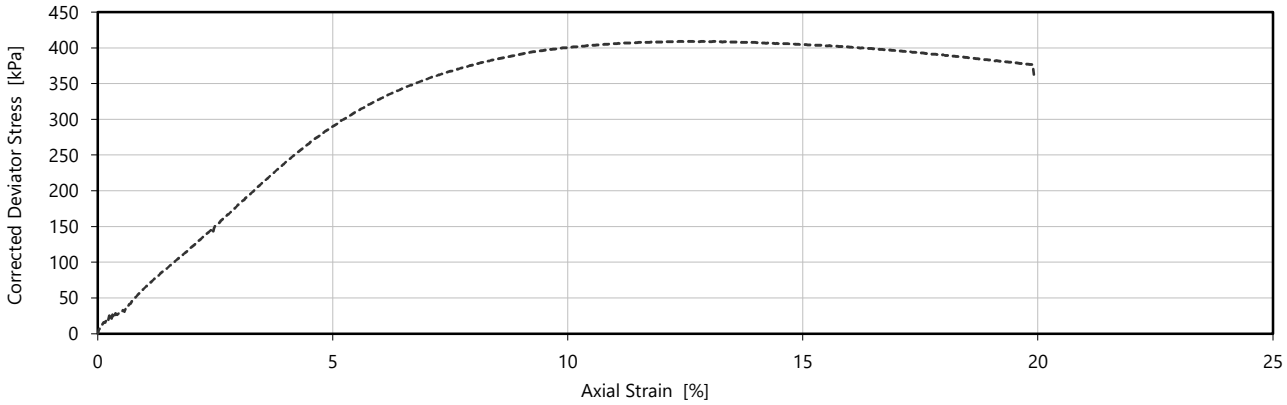
Tested offshore onboard DEME Neptune

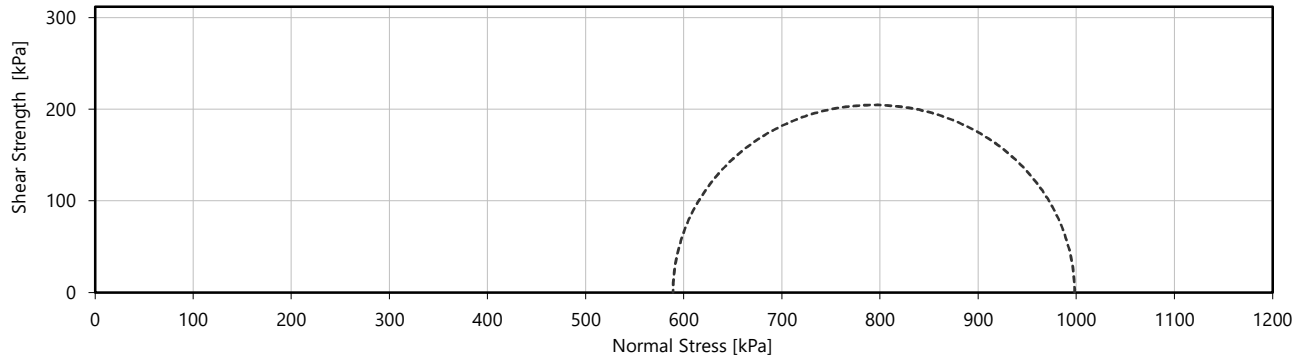
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	14.65
Specimen Description	Stiff dark greyish brown slightly gravelly slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	14.66	Sample Reference	42





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.96		
Diameter [mm]	71.43		
Bulk Density [Mg/m³]	2.203		
Specimen Water Content [%]	15.8		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.903		
Initial Voids Ratio	0.393		
Degree of Saturation [%]	106		
Application of Deviator Stress			
Cell Pressure [kPa]	589		
Specimen Height [mm]	141.06		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	205		
Strain at Failure [%]	12.6		
Failure Mode	Plastic		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

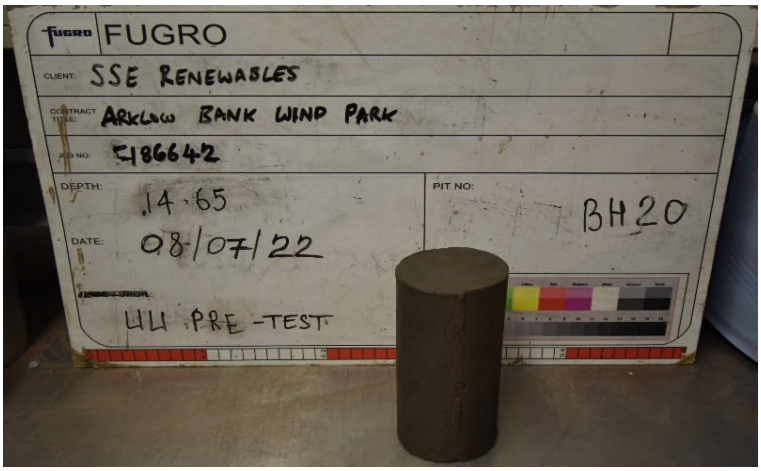
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

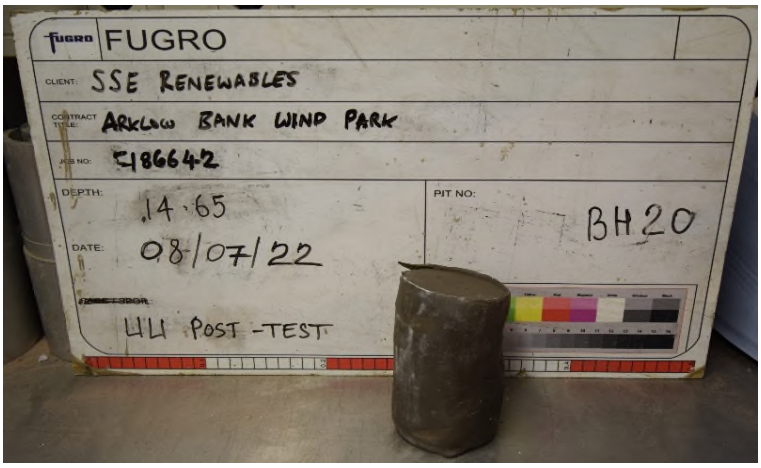
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH20
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	14.65
Specimen Description	Stiff dark greyish brown slightly gravelly slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	14.66	Sample Reference	42



Pre Test	Vertical



Post Test	Vertical

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

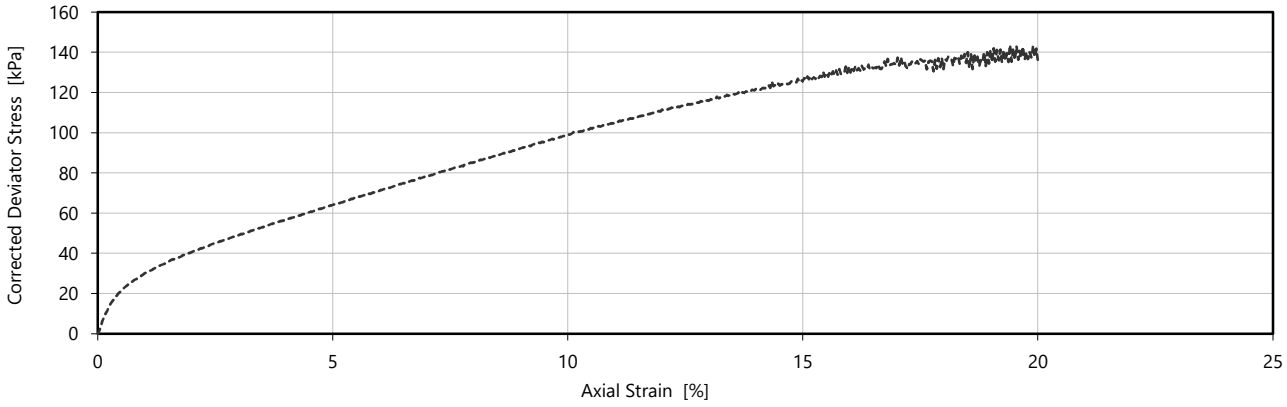
Tested offshore onboard DEME Neptune

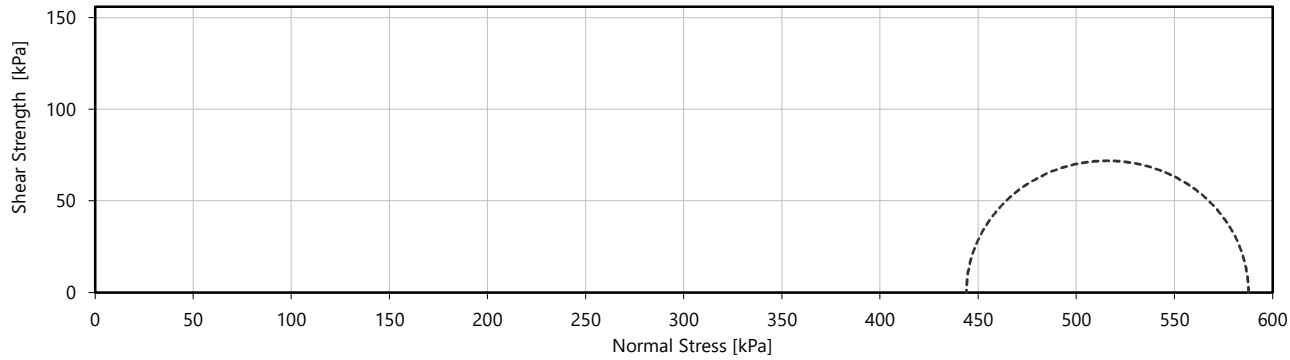
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH26
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.88
Specimen Description	Firm to stiff greyish brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.90	Sample Reference	14





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	135.11		
Diameter [mm]	64.19		
Bulk Density [Mg/m³]	2.200		
Specimen Water Content [%]	16.2		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.893		
Initial Voids Ratio	0.400		
Degree of Saturation [%]	108		
Application of Deviator Stress			
Cell Pressure [kPa]	444		
Specimen Height [mm]	135.21		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	72		
Strain at Failure [%]	19.4		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH26
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.88
Specimen Description	Firm to stiff greyish brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.90	Sample Reference	14

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

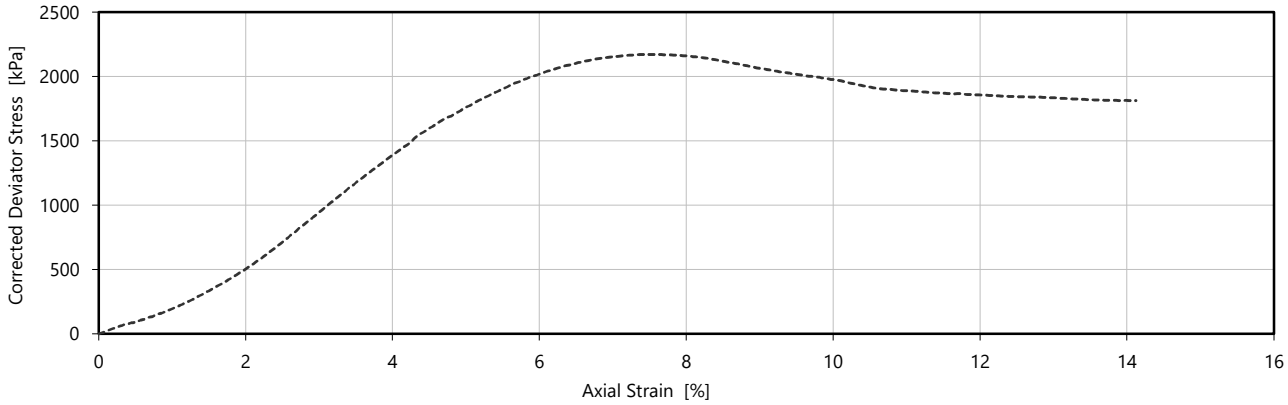
Tested offshore onboard DEME Neptune

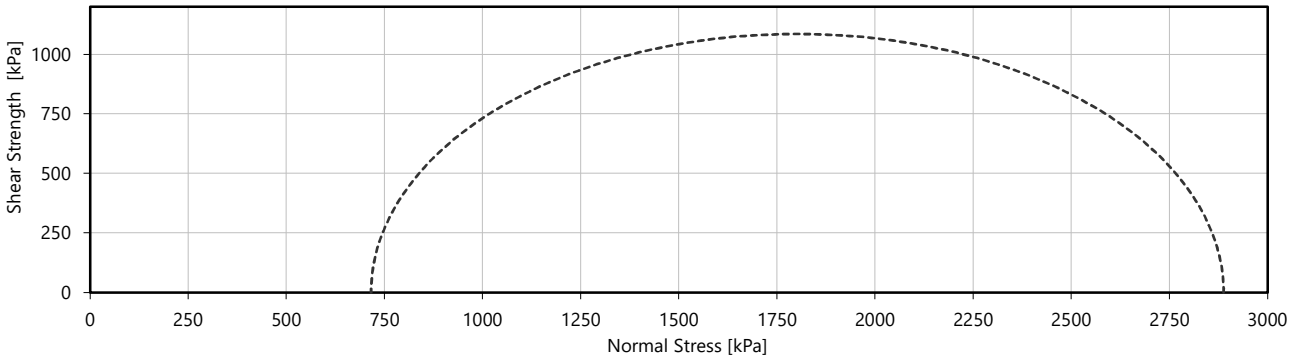
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH26
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.30
Specimen Description	Stiff brown very sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.32	Sample Reference	39





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	139.99		
Diameter [mm]	71.53		
Bulk Density [Mg/m³]	2.197		
Specimen Water Content [%]	11.8		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.966		
Initial Voids Ratio	0.348		
Degree of Saturation [%]	90		
Application of Deviator Stress			
Cell Pressure [kPa]	716		
Specimen Height [mm]	140.09		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	1086		
Strain at Failure [%]	7.5		
Failure Mode	Compound		

Issue Date	01 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	01 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH26
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	21.30
Specimen Description	Stiff brown very sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	21.32	Sample Reference	39

Photo Unavailable

Post Test	Vertical

Photo Unavailable

Post Test	Horizontal

Issue Date	01 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	01 09 2022
Remarks					

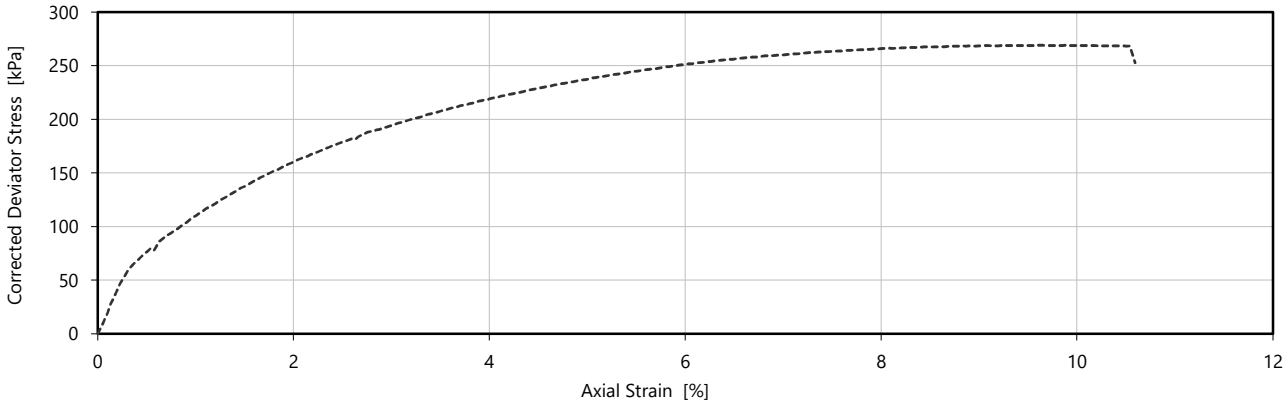
Tested offshore onboard DEME Neptune

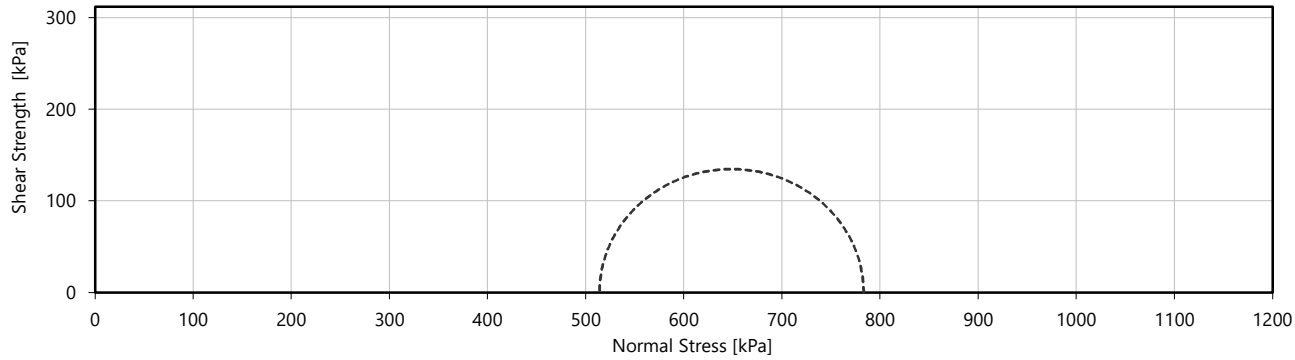
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	11.70
Specimen Description	Firm brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	11.74	Sample Reference	46





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	142.15		
Diameter [mm]	71.48		
Bulk Density [Mg/m³]	2.193		
Specimen Water Content [%]	15.0		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.906		
Initial Voids Ratio	0.390		
Degree of Saturation [%]	102		
Application of Deviator Stress			
Cell Pressure [kPa]	514		
Specimen Height [mm]	142.25		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	135		
Strain at Failure [%]	9.7		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks	Test stopped prior to reaching 20% strain to prevent membrane failure.				

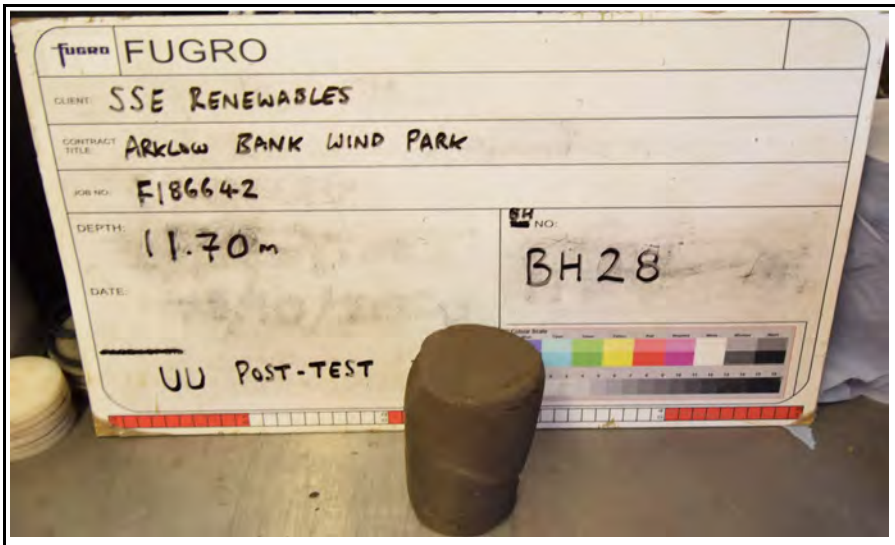
Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	11.70
Specimen Description	Firm brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	11.74	Sample Reference	46



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

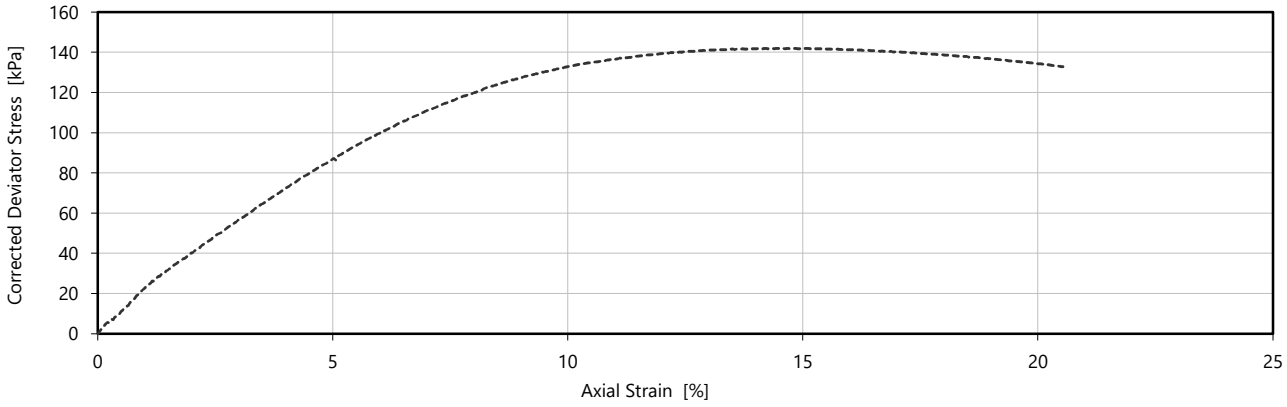
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

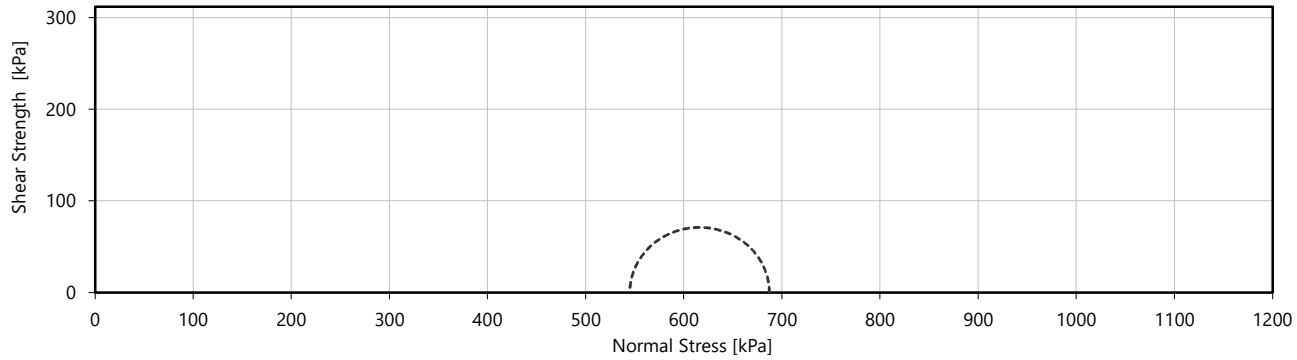
Plate 5.234

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.25
Specimen Description	Firm brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.25	Sample Reference	64





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	138.98		
Diameter [mm]	72.15		
Bulk Density [Mg/m³]	2.061		
Specimen Water Content [%]	20.5		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.710		
Initial Voids Ratio	0.549		
Degree of Saturation [%]	99		
Application of Deviator Stress			
Cell Pressure [kPa]	545		
Specimen Height [mm]	139.08		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	71		
Strain at Failure [%]	14.5		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

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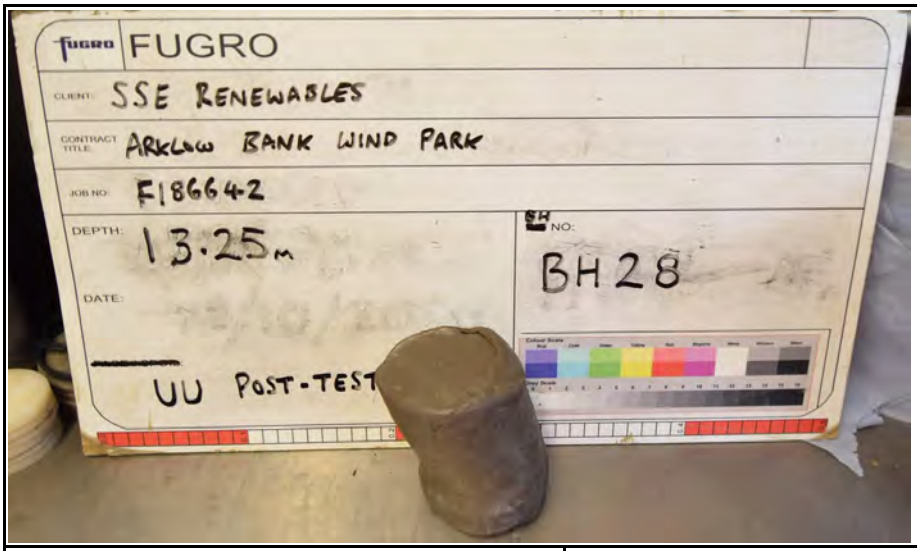
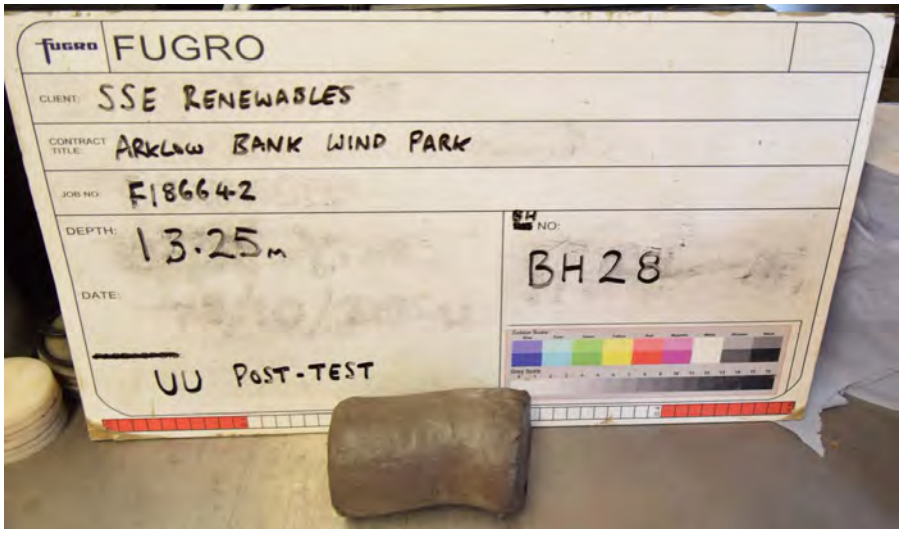
LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test
BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	13.25
Specimen Description	Firm brown slightly sandy CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	13.25	Sample Reference	64



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partner's Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

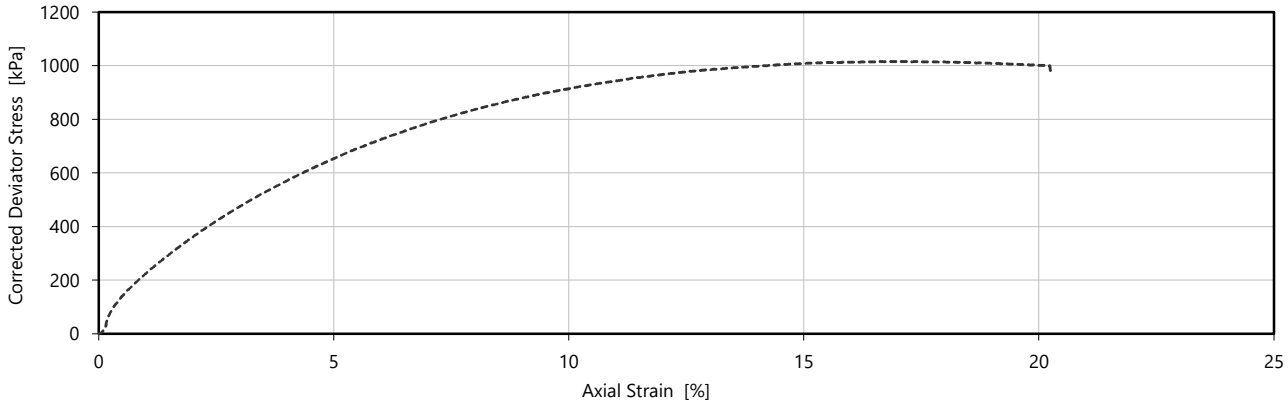
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

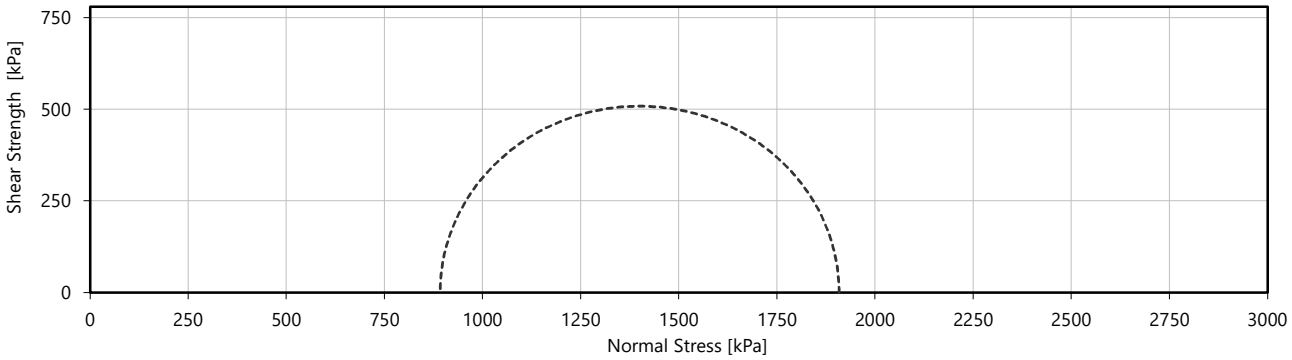
Plate 5.236

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.60
Specimen Description	Stiff dark brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	30.62	Sample Reference	126





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	201.00		
Diameter [mm]	100.71		
Bulk Density [Mg/m³]	2.224		
Specimen Water Content [%]	19.3		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.863		
Initial Voids Ratio	0.422		
Degree of Saturation [%]	121		
Application of Deviator Stress			
Cell Pressure [kPa]	892		
Specimen Height [mm]	201.10		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	508		
Strain at Failure [%]	17.0		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test
BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	30.60
Specimen Description	Stiff dark brown slightly sandy slightly gravelly CLAY			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	30.62	Sample Reference	126



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

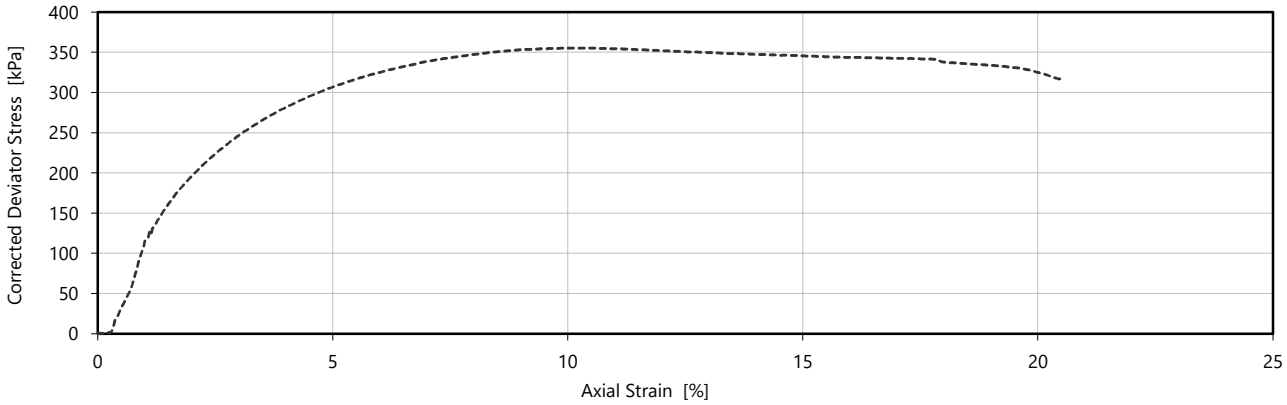
Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

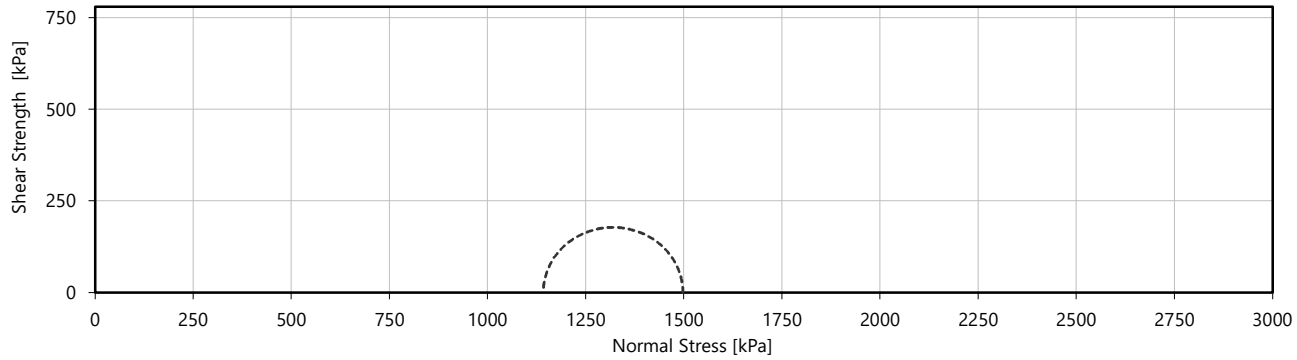
Plate 5.238

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	43.10
Specimen Description	Stiff brown slightly sandy slightly gravelly CLAY.			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	43.10	Sample Reference	179





Test number	1		
Specimen Preparation	Hand Trimmed		
Length [mm]	140.77		
Diameter [mm]	71.09		
Bulk Density [Mg/m³]	2.062		
Specimen Water Content [%]	25.1		
Failure Surface Water Content [%]			
Dry Density [Mg/m³]	1.649		
Initial Voids Ratio	0.607		
Degree of Saturation [%]	109		
Application of Deviator Stress			
Cell Pressure [kPa]	1142		
Specimen Height [mm]	140.87		
Mean Rate of Shear [mm/min]	2.80		
Peak Values			
Undrained Shear Strength [kPa]	178		
Strain at Failure [%]	10.2		
Failure Mode	Compound		

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

LABORATORY TEST CERTIFICATE
Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-8 2018

Project Reference	F186642			Location ID	BH28
Project Name	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Depth Top [m]	43.10
Specimen Description	Stiff brown slightly sandy slightly gravelly CLAY.			Sample Type	B
Specimen Reference	1	Specimen Depth [m]	43.10	Sample Reference	179



Post Test	Vertical



Post Test	Horizontal

Issue Date	02 09 2022	Certificate Reference	Issue 1	Authorised By	JPD
Client	Sure Partners Limited			Authorised Date	02 09 2022
Remarks					

Tested offshore onboard DEME Neptune

Testing was performed at a mobile Fugro GeoServices Ltd laboratory at the project named above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of this certificate. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.

Plate 5.240

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH09	35.4	B	84	F-6Q73QB-28NS	35.53	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	2.22		ISRM 2007 Caliper only	
BH09	36.13	D	88	F-SAB3QB-NFOC	36.18	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	2.28		ISRM 2007 Caliper only	
BH09	37.9	C	99	F-KQC3QB-I5NR	37.9	Weak thinly laminated brownish red medium grained SANDSTONE.	2.22		ISRM 2007 Caliper only	
BH09	38.05	B	100	F-8RC3QB-1M1G	38.16	Weak thinly laminated brownish red medium grained SANDSTONE.	2.2		ISRM 2007 Caliper only	
BH09	38.64	C	105	F-CXD3QB-UT97	38.64	Weak thinly laminated brownish red medium grained SANDSTONE.	2.22		ISRM 2007 Caliper only	
BH09	39.44	D	109	F-R3E3QB-RG31	39.5	Weak thinly laminated brownish red medium grained SANDSTONE.	2.28		ISRM 2007 Caliper only	
BH09	39.74	C	111	F-TXG3QB-A0SR	39.74	Weak thinly laminated brownish red medium grained SANDSTONE.	2.31		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH09	39.88	C	112	F-FYG3QB-F3BR	39.88	Weak thinly laminated brownish red medium grained SANDSTONE.	2.28		ISRM 2007 Caliper only	
BH09	40.24	C	114	F-PZG3QB-CUJD	40.24	Weak thinly laminated brownish red medium grained SANDSTONE.	2.28		ISRM 2007 Caliper only	
BH09	41.92	C	123	F-20K3QB-XPP5	41.92	Very weak thinly laminated brownish red fine grained SANDSTONE.	2.13		ISRM 2007 Caliper only	
BH09	42.11	C	124	F-S0K3QB-P5V4	42.11	Very weak thinly laminated brownish red fine grained SANDSTONE.	2.13		ISRM 2007 Caliper only	
BH09	42.87	C	129	F-KBL3QB-Q1B8	42.87	Very weak thinly laminated brownish red fine grained SANDSTONE.	2.14		ISRM 2007 Caliper only	
BH09	43.12	C	130	F-JCL3QB-1JSG	43.12	Very weak thinly laminated brownish red fine grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH09	45.1	C	142	F-N9O3QB-WDAL	45.1	Weak brownish red medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH09	45.5	D	144	F-3BP3QB-DKH8	45.58	Weak brownish red medium grained SANDSTONE.	2.16		ISRM 2007 Caliper only	
BH09	45.82	C	146	F-TGP3QB-YW76	45.82	Weak brownish red medium grained SANDSTONE.	2.09		ISRM 2007 Caliper only	
BH09	46.5	C	150	F-I6R3QB-SF8T	46.5	Weak brownish red medium grained SANDSTONE.	2.07		ISRM 2007 Caliper only	
BH09	47.11	C	153	F-W8R3QB-ROES	47.11	Weak brownish red medium grained SANDSTONE.	2.07		ISRM 2007 Caliper only	
BH09	47.24	C	154	F-Z9R3QB-DU50	47.24	Weak brownish red medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	
BH09	47.58	C	157	F-2LS3QB-MH46	47.58	Weak brownish red medium grained SANDSTONE.	2.12		ISRM 2007 Caliper only	
BH09	48.22	C	162	F-OPS3QB-GK6X	48.22	Weak brownish red medium grained SANDSTONE.	2.13		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH09	48.97	C	165	F-3MT3QB-V05N	48.97	Weak brownish red medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	
BH09	49.64	C	170	F-5GU3QB-A6IW	49.64	Weak brownish red medium grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH09	49.89	B	171	F-VGU3QB-38TL	50.02	Weak brownish red medium grained SANDSTONE.	2.13		ISRM 2007 Caliper only	
BH09	50.2	C	173	F-0IU3QB-AF8W	50.2	Weak brownish red medium grained SANDSTONE.	2.13		ISRM 2007 Caliper only	
BH09	50.67	C	177	F-CKV3QB-TZOC	50.67	Weak brownish red medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	
BH09	50.86	C	178	F-ELV3QB-33DG	50.86	Weak brownish red medium grained SANDSTONE.	2.18		ISRM 2007 Caliper only	
BH09	51.02	C	179	F-4MV3QB-4V01	51.02	Weak brownish red medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH09	51.66	C	185	F-HWY3QB-ODRS	51.66	Weak brownish red medium grained SANDSTONE.	2.09		ISRM 2007 Caliper only	
BH09	51.95	C	186	F-CXY3QB-FUN6	51.95	Weak brownish red medium grained SANDSTONE.	2.1		ISRM 2007 Caliper only	
BH09	52.12	C	187	F-3ZY3QB-1RRD	52.12	Weak brownish red medium grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH09	52.25	C	188	F-E0Z3QB-4O2A	52.25	Weak brownish red medium grained SANDSTONE.	2.1		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH10	51.19	C	128	F-28BQQB-1FN2	51.19	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	
BH10	51.35	C	129	F-J9BQQB-PO8G	51.35	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.17		ISRM 2007 Caliper only	
BH10	51.65	B	130	F-6ABQQB-BD1C	51.65	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	
BH10	51.78	C	131	F-5CBQQB-4DO4	51.78	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.12		ISRM 2007 Caliper only	
BH10	51.96	C	132	F-7EBQQB-0RG2	51.96	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	
BH10	52.2	B	133	F-KFBQQB-XJHE	52.25	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.25		ISRM 2007 Caliper only	
BH10	52.2	B	133	F-KFBQQB-XJHE	52.2	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH10	53.25	C	136	F-OBFQQB-R2XG	53.25	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	
BH10	53.46	C	138	F-2HIQQB-5G18	53.46	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.19		ISRM 2007 Caliper only	
BH10	53.66	B	139	F-2IIQQB-IBLH	53.75	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH10	53.66	B	139	F-2IIQQB-IBLH	53.66	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.16		ISRM 2007 Caliper only	
BH10	53.93	C	141	F-5PIQQB-Y89E	53.93	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.2		ISRM 2007 Caliper only	
BH10	53.93	C	141	F-5PIQQB-Y89E	54.09	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.12		ISRM 2007 Caliper only	
BH10	54.69	B	144	F-5XIQQB-G8SS	54.75	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [Mg.m^{-3}]	Dry Density [Mg.m^{-3}]	Method	Remarks
BH10	54.69	B	144	F-5XIQQB-G8SS	54.69	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	2.19		ISRM 2007 Caliper only	
BH10	54.93	B	146	F-GONQQB-H8WI	55.09	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.15		ISRM 2007 Caliper only	
BH10	54.93	B	146	F-GONQQB-H8WI	54.93	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.1		ISRM 2007 Caliper only	
BH10	55.45	C	148	F-P1OQQB-ODS7	56.2	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	1.61		ISRM 2007 Caliper only	
BH10	56.6	B	151	F-JOSQQB-YDWP	56.6	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH10	56.6	B	151	F-JOSQQB-YDWP	56.74	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.19		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH10	56.6	B	151	F-JOSQQB-YDWP	56.37	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	1.73		ISRM 2007 Caliper only	
BH10	56.8	B	153	F-TRSQQB-G6IQ	56.8	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.16		ISRM 2007 Caliper only	
BH10	56.8	B	153	F-TRSQQB-G6IQ	56.9	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.19		ISRM 2007 Caliper only	
BH10	57.1	C	155	F-8WSQQB-BRN4	57.1	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.24		ISRM 2007 Caliper only	
BH10	57.61	C	157	F-QQYQQB-0D51	57.61	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.12		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH10	58.18	B	159	F-CTYQQB-MXI3	58.18	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.11		ISRM 2007 Caliper only	
BH10	58.29	B	160	F-UUYQQB-C7S6	58.29	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.2		ISRM 2007 Caliper only	
BH10	58.41	C	161	F-MYYQQB-IS7H	58.41	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.16		ISRM 2007 Caliper only	
BH10	58.6	C	162	F-VZYQQB-U2L4	58.6	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.25		ISRM 2007 Caliper only	
BH10	58.79	C	164	F-H2ZQQB-KYN3	58.79	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	2.21		ISRM 2007 Caliper only	
BH10	60.53	C	173	F-LI0SQB-AFOE	60.53	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.07		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH10	60.99	B	174	F-JL0SQB-JGSJ	60.99	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.1		ISRM 2007 Caliper only	
BH10	61.15	C	175	F-FP0SQB-HF58	61.15	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.14		ISRM 2007 Caliper only	
BH10	61.45	C	176	F-JX0SQB-YWXG	61.45	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.18		ISRM 2007 Caliper only	
BH10	61.98	B	177	F-DY0SQB-GN83	61.98	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.26		ISRM 2007 Caliper only	
BH10	62.07	C	178	F-601SQB-B3FX	62.07	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	2.24		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH12	42.59	C	109	F-7ZY9QB-TYFG	42.59	Moderately weak and medium strong brownish red fine grained SANDSTONE.	2.36		ISRM 2007 Caliper only	
BH12	42.93	C	111	F-E1Z9QB-NMS7	42.93	Moderately weak and medium strong brownish red fine grained SANDSTONE.	2.38		ISRM 2007 Caliper only	
BH12	43.31	C	113	F-59Z9QB-N2CH	43.31	Moderately weak and medium strong brownish red fine grained SANDSTONE.	2.46		ISRM 2007 Caliper only	
BH12	43.8	B	115	F-TJZ9QB-88EU	43.8	Moderately weak and medium strong brownish red fine grained SANDSTONE.	2.42		ISRM 2007 Caliper only	
BH12	43.91	B	116	F-SKZ9QB-96PM	43.91	Moderately weak and medium strong brownish red fine grained SANDSTONE.	2.21		ISRM 2007 Caliper only	
BH12	44	B	117	F-VS2AQB-2KN3	44	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.42		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH12	44.16	C	118	F-WT2AQB-ICY9	44.16	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.54		ISRM 2007 Caliper only	
BH12	44.42	C	119	F-NW2AQB-ZLCX	44.42	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.5		ISRM 2007 Caliper only	
BH12	44.92	C	120	F-IY2AQB-GUP2	44.92	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.42		ISRM 2007 Caliper only	
BH12	45.4	B	121	F-323AQB-J1A6	45.4	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.51		ISRM 2007 Caliper only	
BH12	45.5	B	122	F-0V6AQB-1AOC	45.5	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.17		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH12	46.37	C	125	F-S07AQB-X55X	46.37	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.39		ISRM 2007 Caliper only	
BH12	46.52	C	126	F-R17AQB-SG5B	46.52	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.45		ISRM 2007 Caliper only	
BH12	46.69	C	127	F-537AQB-32H0	46.69	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.27		ISRM 2007 Caliper only	
BH12	46.78	B	128	F-G47AQB-4OFE	46.78	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	2.55		ISRM 2007 Caliper only	
BH12	46.97	C	130	F-FA7AQB-VILR	46.97	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	2.5		ISRM 2007 Caliper only	
BH12	48.21	C	134	F-A8AAQB-PS92	48.21	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	2.46		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH12	48.51	B	135	F-W9AAQB-VY3Y	48.51	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	2.43		ISRM 2007 Caliper only	
BH12	50.45	C	141	F-8SKAQB-MLD9	50.45	Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE.	2.56		ISRM 2007 Caliper only	
BH12	51.45	C	149	F-QHOAQB-RZC7	51.45	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	2.48		ISRM 2007 Caliper only	
BH12	52.34	C	155	F-1POAQB-8WJN	52.34	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	2.37		ISRM 2007 Caliper only	
BH12	53.06	C	159	F-L4SAQB-APX2	53.06	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	2.55		ISRM 2007 Caliper only	
BH12	53.32	C	160	F-4OVAQB-JKKJ	53.32	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	2.43		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH13	32.62	C	87	F-Q11WQB-UKYW	32.62	Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE.	2.46		ISRM 2007 Caliper only	
BH13	33.59	B	92	F-6K7WQB-9EM1	33.59	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.51		ISRM 2007 Caliper only	
BH13	33.77	B	93	F-XL7WQB-J1J5	33.77	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.45		ISRM 2007 Caliper only	
BH13	33.91	C	94	F-YS7WQB-VNWU	33.91	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.53		ISRM 2007 Caliper only	
BH13	34.15	B	95	F-2W7WQB-CLXJ	34.15	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.36		ISRM 2007 Caliper only	
BH13	34.23	C	96	F-XW7WQB-RB2B	34.23	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.35		ISRM 2007 Caliper only	
BH13	34.52	C	97	F-PWBWQB-T1QF	34.52	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.44		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH13	34.85	C	99	F-20CWQB-JJWM	34.85	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.37		ISRM 2007 Caliper only	
BH13	35.06	B	106	F-Z1CWQB-Z6TJ	35.06	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.61		ISRM 2007 Caliper only	
BH13	35.21	C	103	F-O2CWQB-5B5U	35.21	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.47		ISRM 2007 Caliper only	
BH13	35.43	B	105	F-B3CWQB-IT5T	35.43	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	2.27		ISRM 2007 Caliper only	
BH13	35.66	C	108	F-ANFWQB-VZLB	35.66	Moderately weak and medium strong reddish brown MUDSTONE.	2.05		ISRM 2007 Caliper only	
BH13	35.66	C	108	F-ANFWQB-VZLB	34.68	Moderately weak and medium strong reddish brown MUDSTONE.	2.47		ISRM 2007 Caliper only	
BH13	35.98	C	109	F-RPFWQB-Q9EB	35.98	Moderately weak and medium strong reddish brown MUDSTONE.	2.51		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [Mg.m^{-3}]	Dry Density [Mg.m^{-3}]	Method	Remarks
BH13	36.28	B	111	F-QSFWQB-YGCN	36.28	Moderately weak and medium strong reddish brown MUDSTONE.	2.62		ISRM 2007 Caliper only	
BH13	36.51	C	113	F-LUFWQB-0B1P	36.51	Moderately weak and medium strong reddish brown MUDSTONE.	2.62		ISRM 2007 Caliper only	
BH13	36.88	B	114	F-IVFWQB-E3H6	36.88	Moderately weak and medium strong reddish brown MUDSTONE.	2.44		ISRM 2007 Caliper only	
BH13	36.94	C	115	F-TWFWQB-3FRP	36.94	Moderately weak and medium strong reddish brown MUDSTONE.	2.37		ISRM 2007 Caliper only	
BH13	37.07	B	116	F-FUIWQB-O0QZ	37.07	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	2.56		ISRM 2007 Caliper only	
BH13	38.2	C	118	F-DYIWQB-WUV0	38.2	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	2.33		ISRM 2007 Caliper only	
BH13	38.35	C	119	F-7ZIWQB-7BUO	38.35	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	2.35		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH13	39.13	C	122	F-YZPWQB-YWXM	39.13	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	2.67		ISRM 2007 Caliper only	
BH13	39.59	C	124	F-P1QWQB-PW4X	39.59	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	2.4		ISRM 2007 Caliper only	
BH13	46	C	137	F-NS4XQB-ZF3E	46	Weak to medium strong very thinly to medium bedded reddish brown and brown fine to medium predominately fine grained SANDSTONE.	2.52		ISRM 2007 Caliper only	
BH13	47.27	C	139	F-5U4XQB-BF67	47.27	Medium strong light greenish grey medium to thickly bedded fine to coarse predominately medium SANDSTONE.	2.55		ISRM 2007 Caliper only	
BH13	48.3	C	144	F-TA8XQB-039O	48.3	Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE.	2.45		ISRM 2007 Caliper only	
BH13	48.7	C	146	F-MC8XQB-8W6Z	48.7	Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE.	2.44		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH26	39.76	C	91	F-UNZAPB-LQ1D	39.76	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	2.28		ISRM 2007 Caliper only	
BH26	40.4	B	93	F-BQZAPB-13B6	40.5	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	2.45		ISRM 2007 Caliper only	
BH26	40.82	C	97	F-VN1BPB-FHIE	40.82	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	2.45		ISRM 2007 Caliper only	
BH26	41.18	C	99	F-IP1BPB-VLIO	41.18	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	2.45		ISRM 2007 Caliper only	
BH26	41.4	C	100	F-E35BPB-AVZR	41.4	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	2.52		ISRM 2007 Caliper only	
BH26	42.5	C	103	F-DQ5BPB-MYOE	42.5	Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE.	2.49		ISRM 2007 Caliper only	
BH26	43.4	C	106	F-V8BBPB-H0Y3	43.4	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.52		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH26	43.87	C	108	F-3DBBPB-BVAF	43.87	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.55		ISRM 2007 Caliper only	
BH26	44.3	C	110	F-GYDBPB-PO28	44.3	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.54		ISRM 2007 Caliper only	
BH26	44.73	C	112	F-O0EBPB-M0SG	44.73	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.48		ISRM 2007 Caliper only	
BH26	44.93	C	113	F-Q2EBPB-URJ9	44.93	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.49		ISRM 2007 Caliper only	
BH26	45.16	C	114	F-S3EBPB-7879	45.16	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.52		ISRM 2007 Caliper only	
BH26	45.41	C	115	F-M5EBPB-WVJ6	45.41	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE.	2.52		ISRM 2007 Caliper only	
BH26	46.18	C	118	F-WPGBPB-2DO3	46.18	Very weak thinly and thickly laminated dark reddish grey SILTSTONE.	2.45		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH26	46.39	C	119	F-2RGBPB-I59F	46.39	Very weak thinly and thickly laminated dark reddish grey SILTSTONE.	2.53		ISRM 2007 Caliper only	
BH26	47.98	C	122	F-SBLBPB-B08C	47.98	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	2.56		ISRM 2007 Caliper only	
BH26	48.8	C	125	F-2KQBPB-YP67	48.8	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	2.51		ISRM 2007 Caliper only	
BH26	49.25	C	127	F-1MQBPB-2GR2	49.5	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	2.59		ISRM 2007 Caliper only	
BH26	49.56	C	128	F-QMQBPB-YRH3	49.56	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	2.56		ISRM 2007 Caliper only	
BH26	49.94	C	129	F-GOQBPB-EBBH	49.94	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	2.53		ISRM 2007 Caliper only	
BH26	50.44	C	131	F-71TBPB-6KJF	50.44	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	2.51		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH26	51.04	B	132	F-72TBPB-0UYL	51.2	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	2.52		ISRM 2007 Caliper only	
BH26	51.2	C	133	F-Y2TBPB-XBH2	51.67	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	2.49		ISRM 2007 Caliper only	
BH26	51.2	C	133	F-Y2TBPB-XBH2	51.71	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	2.54	2.42	ISRM 2007	
BH26	52.76	C	137	F-2ZUBPB-85EO	52.76	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.57		ISRM 2007 Caliper only	
BH26	53.04	C	138	F-UZUBPB-59FT	53.04	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.53		ISRM 2007 Caliper only	
BH26	53.3	C	140	F-G0YBPB-8YG8	53.3	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.52		ISRM 2007 Caliper only	
BH26	53.66	B	142	F-PQYBPB-8NS6	53.66	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.55		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH26	54.4	C	147	F-6GYBPB-F507	54.4	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.47		ISRM 2007 Caliper only	
BH26	54.8	C	149	F-HR0CPB-B9D2	54.8	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.49		ISRM 2007 Caliper only	
BH26	55.1	C	150	F-9U0CPB-0SDQ	55.1	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.55		ISRM 2007 Caliper only	
BH26	55.75	C	152	F-VY0CPB-C4C5	55.75	Medium strong thinly laminated dark reddish grey SILTSTONE.	2.53		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH28	56.39	C	234	F-7N3VPB-MPLT	56.39	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.26		ISRM 2007 Caliper only	
BH28	57.11	C	237	F-PM4VPB-1CSZ	57.11	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.2		ISRM 2007 Caliper only	
BH28	57.43	C	238	F-YM4VPB-2GD7	57.43	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.24		ISRM 2007 Caliper only	
BH28	57.8	C	239	F-D15VPB-D48G	57.8	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.25		ISRM 2007 Caliper only	
BH28	58.04	C	240	F-7Z6VPB-4I2A	58.04	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.36		ISRM 2007 Caliper only	
BH28	59.24	C	246	F-IS8VPB-92J7	59.24	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.24		ISRM 2007 Caliper only	
BH28	59.39	C	247	F-5V8VPB-9S2I	59.39	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.26		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH28	59.67	C	249	F-SY8VPB-KBKN	59.67	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.39		ISRM 2007 Caliper only	
BH28	60.13	C	250	F-F09VPB-XXR8	60.13	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.39		ISRM 2007 Caliper only	
BH28	60.62	C	252	F-5ECVPB-1UCT	60.62	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	2.45		ISRM 2007 Caliper only	
BH28	60.9	C	254	F-8NCVPB-981G	60.9	Very weak and weak thinly bedded reddish brown MUDSTONE.	2.72		ISRM 2007 Caliper only	
BH28	62.24	C	260	F-62GVPB-3W5E	62.24	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.54		ISRM 2007 Caliper only	
BH28	63.12	C	262	F-X4GVPB-34NC	63.12	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.43		ISRM 2007 Caliper only	
BH28	63.5	C	263	F-BIIVPB-93GH	63.5	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.5		ISRM 2007 Caliper only	

Exploratory Position Ref.	Top Depth [m]	Sample Type	Sample Ref.	Sample ID	Specimen Top Depth [m]	Specimen Description	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Method	Remarks
BH28	63.85	C	264	F-GMIVPB-XJIT	63.85	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.53		ISRM 2007 Caliper only	
BH28	64.09	C	265	F-RNIVPB-N5WJ	64.09	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.52		ISRM 2007 Caliper only	
BH28	64.47	C	267	F-1SIVPB-QJS9	64.47	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.54		ISRM 2007 Caliper only	
BH28	64.78	C	268	F-KTIVPB-78DB	64.78	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.57		ISRM 2007 Caliper only	
BH28	64.87	C	269	F-WUIVPB-9LRG	64.87	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	2.58		ISRM 2007 Caliper only	

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB**
Location	**Neptune JUB**			**Borehole Number**	**BH09**
Date Cored	**06 19 2022**	to	**06 19 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 19 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-6Q73QB-28NS	1	35.40	35.53	D	PL	100	130	100	10000.00	100.00	0.1	0.3	0.43	433.20	0.04	0.06
F-6Q73QB-28NS	2	35.40	35.47	A	PD	100	70	100	8912.68	94.41	0.12	0.3	0.43	433.20	0.05	0.06
F-6Q73QB-28NS	3	35.47	35.53	A	PD	100	60	100	7639.44	87.40	0.14	0.32	0.46	462.08	0.06	0.08
F-7R73QB-VFE8	1	35.88	36.00	D	PL	100	120	100	10000.00	100.00	0.04	0.18	0.26	259.92	0.03	0.04
F-7R73QB-VFE8	2	35.88	35.93	A	PD	100	50	100	6366.20	79.79	0.26	0.48	0.69	693.12	0.11	0.13
F-7R73QB-VFE8	3	35.93	36.00	A	PD	100	70	100	8912.68	94.41	0.14	0.38	0.55	548.72	0.06	0.08
F-5AB3QB-7BNC	1	36.00	36.13	D	PL	100	130	100	10000.00	100.00	0.04	0.38	0.55	548.72	0.05	0.07
F-5AB3QB-7BNC	2	36.00	36.06	A	PD	100	60	100	7639.44	87.40	0.12	0.44	0.64	635.36	0.08	0.11
F-5AB3QB-7BNC	3	36.06	36.13	A	PD	100	70	100	8912.68	94.41	0.18	0.22	0.32	317.68	0.04	0.05
F-TFB3QB-ZXHR	1	36.63	36.75	D	PL	100	120	100	10000.00	100.00	0.2	0.78	1.13	1126.32	0.11	0.15
F-TFB3QB-ZXHR	2	36.66	36.75	A	PD	100	90	100	11459.16	107.05	0.18	0.48	0.69	693.12	0.06	0.09
F-EGB3QB-NLI8	1	36.75	36.84	D	PL	100	90	100	10000.00	100.00	0.2	0.46	0.66	664.24	0.07	0.09
F-EGB3QB-NLI8	3	36.78	36.84	A	PD	100	60	100	7639.44	87.40	0.3	0.6	0.87	866.40	0.11	0.15
F-8RC3QB-1M1G	1	38.05	38.160	D	PL	100	110	100	10000.00	100.00	0.18	0.32	0.46	462.08	0.05	0.06
F-8RC3QB-1M1G	2	38.05	38.110	A	PD	100	60	100	7639.44	87.40	0.2	0.62	0.90	895.28	0.12	0.15
F-8RC3QB-1M1G	3	38.11	38.160	A	PD	100	50	100	6366.20	79.79	0.3	0.6	0.87	866.40	0.14	0.17
F-DVD3QB-DMIX	1	38.35	38.400	D	PL	100	50	100	10000.00	100.00	0.18	0.32	0.46	462.08	0.05	0.06
F-DVD3QB-DMIX	2	38.40	38.50	A	PD	100	100	100	12732.40	112.84	0.12	0.62	0.90	895.28	0.07	0.10
F-DVD3QB-DMIX	3	38.50	38.55	A	PD	100	50	100	6366.20	79.79	0.12	0.24	0.35	346.56	0.05	0.07
F-10E3QB-VH8I	1	39.19	39.320	D	PL	100	130	100	10000.00	100.00	0.22	0.54	0.78	779.76	0.08	0.11

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB**
Location	**Neptune JUB**			**Borehole Number**	**BH09**
Date Cored	**06 19 2022**	to	**06 19 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 19 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-10E3QB-VH8I	2	39.19	39.25	A	PD	100	60	100	7639.44	87.40	0.2	0.56	0.81	808.64	0.11	0.14
F-10E3QB-VH8I	3	39.25	39.32	A	PD	100	70	100	8912.68	94.41	0.16	0.74	1.07	1068.56	0.12	0.16
F-I2E3QB-YR6J	1	39.32	39.44	D	PL	100	120	100	10000.00	100.00	0.16	0.52	0.75	750.88	0.08	0.10
F-I2E3QB-YR6J	2	39.32	39.39	A	PD	100	70	100	8912.68	94.41	0.18	0.5	0.72	722.00	0.08	0.11
F-I2E3QB-YR6J	3	39.39	39.44	A	PD	100	50	100	6366.20	79.79	0.22	0.38	0.55	548.72	0.09	0.11
F-3ZG3QB-ENX7	1	40.00	40.22	D	PL	100	220	100	10000.00	100.00	0.16	0.22	0.32	317.68	0.03	0.04
F-3ZG3QB-ENX7	2	40.00	40.06	A	PD	100	60	100	7639.44	87.40	0.18	0.32	0.46	462.08	0.06	0.08
F-3ZG3QB-ENX7	3	40.06	40.12	A	PD	100	60	100	7639.44	87.40	0.18	0.54	0.78	779.76	0.10	0.13
F-3ZG3QB-ENX7	4	40.12	40.22	A	PD	100	100	100	12732.40	112.84	0.1	0.66	0.95	953.04	0.07	0.11
F-KUI3QB-NPIA	1	41.13	41.270	A	PD	100	140	100	17825.35	133.51	0.3	0.4	0.58	577.60	0.03	0.05
F-XWI3QB-LOLS	1	41.33	41.450	D	PL	100	120	100	10000.00	100.00	0.34	0.44	0.64	635.36	0.06	0.09
F-XWI3QB-LOLS	2	41.33	41.400	A	PD	100	70	100	8912.68	94.41	0.3	0.34	0.49	490.96	0.06	0.07
F-XWI3QB-LOLS	3	41.40	41.450	A	PD	100	50	100	6366.20	79.79	0.36	0.4	0.58	577.60	0.09	0.11
F-H1K3QB-56CG	1	42.27	42.550	D	PL	100	280	100	10000.00	100.00	0.34	0.44	0.64	635.36	0.06	0.09
F-H1K3QB-56CG	2	42.27	42.34	A	PD	100	70	100	8912.68	94.41	0.18	0.24	0.35	346.56	0.04	0.05
F-H1K3QB-56CG	3	42.34	42.50	A	PD	100	160	100	20371.83	142.73	0.22	0.26	0.38	375.44	0.02	0.03
F-YAL3QB-XNSM	1	42.74	42.870	D	PL	100	130	100	10000.00	100.00	1.16	1.2	1.73	1732.80	0.17	0.24
F-YAL3QB-XNSM	2	42.74	42.81	A	PD	100	70	100	8912.68	94.41	0.2	0.2	0.29	288.80	0.03	0.04
F-WSM3QB-YJZA	1	44.14	44.33	D	PL	100	190	90	8100.00	90.00	0.42	0.68	0.98	981.92	0.12	0.16
F-WSM3QB-YJZA	2	44.14	44.21	A	PD	100	70	100	8912.68	94.41	0.26	0.52	0.75	750.88	0.08	0.11

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB**
Location	**Neptune JUB**			**Borehole Number**	**BH09**
Date Cored	**06 19 2022**	to	**06 19 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 19 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-4UM3QB-TN2M	1	44.43	44.50	A	PD	100	70	100	8912.68	94.41	0.22	0.36	0.52	519.84	0.06	0.08
F-G7O3QB-T5PS	1	44.50	44.67	D	PL	100	170	100	10000.00	100.00	0.36	0.6	0.87	866.40	0.09	0.12
F-G7O3QB-T5PS	2	44.50	44.58	A	PD	100	80	100	10185.92	100.93	0.18	0.54	0.78	779.76	0.08	0.11
F-G7O3QB-T5PS	3	44.58	44.67	A	PD	100	90	100	11459.16	107.05	0.22	0.48	0.69	693.12	0.06	0.09
F-BAO3QB-69VN	1	45.32	45.45	D	PL	100	130	100	10000.00	100.00	0.32	0.7	1.01	1010.80	0.10	0.14
F-BAO3QB-69VN	3	45.32	45.39	A	PD	100	70	100	8912.68	94.41	0.34	0.58	0.84	837.52	0.09	0.13
F-BAO3QB-69VN	2	45.39	45.45	A	PD	100	60	100	7639.44	87.40	0.22	0.48	0.69	693.12	0.09	0.12
F-9IP3QB-Q30G	1	45.97	46.07	A	PD	100	100	100	12732.40	112.84	0.82	0.88	1.27	1270.72	0.10	0.14
F-48R3QB-4ST5	1	47.00	47.11	A	PD	100	110	100	14005.63	118.35	0.32	0.56	0.81	808.64	0.06	0.09
F-YLS3QB-ENDA	1	47.85	47.96	D	PL	100	110	100	10000.00	100.00	0.32	0.48	0.69	693.12	0.07	0.09
F-YLS3QB-ENDA	3	47.85	47.90	A	PD	100	50	100	6366.20	79.79	0.26	0.42	0.61	606.48	0.10	0.12
F-YLS3QB-ENDA	2	47.90	47.96	A	PD	100	60	100	7639.44	87.40	0.34	0.48	0.69	693.12	0.09	0.12
F-4PS3QB-K080	1	48.11	48.220	A	PD	100	110	100	14005.63	118.35	0.34	0.68	0.98	981.92	0.07	0.10
F-9JT3QB-NHJ4	1	48.50	48.660	D	PL	100	160	100	10000.00	100.00	0.32	0.6	0.87	866.40	0.09	0.12
F-9JT3QB-NHJ4	2	48.50	48.610	A	PD	100	110	100	14005.63	118.35	0.36	0.88	1.27	1270.72	0.09	0.13
F-9JT3QB-NHJ4	3	48.61	48.660	A	PD	100	50	100	6366.20	79.79	0.3	0.44	0.64	635.36	0.10	0.12
F-VNT3QB-A3X6	1	49.30	49.420	A	PD	100	120	100	15278.87	123.61	0.3	0.48	0.69	693.12	0.05	0.07
F-VGU3QB-38TL	1	49.89	50.020	D	PL	100	130	100	10000.00	100.00	0.32	0.54	0.78	779.76	0.08	0.11
F-VGU3QB-38TL	2	49.89	49.940	A	PD	100	50	100	6366.20	79.79	0.3	0.44	0.64	635.36	0.10	0.12
F-VGU3QB-38TL	3	49.94	50.020	A	PD	100	80	100	10185.92	100.93	0.24	0.44	0.64	635.36	0.06	0.09

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB**
Location	**Neptune JUB**			**Borehole Number**	**BH09**
Date Cored	**06 19 2022**	to	**06 19 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 19 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-FIU3QB-84QC	1	50.37	50.50	D	PL	100	130	100	10000.00	100.00	0.32	0.40	0.58	577.60	0.06	0.08
F-FIU3QB-84QC	2	50.37	50.41	A	PD	100	40	100	5092.96	71.36	0.34	0.46	0.66	664.24	0.13	0.15
F-FIU3QB-84QC	3	50.41	50.50	A	PD	100	90	100	11459.16	107.05	0.22	0.44	0.64	635.36	0.06	0.08
F-AJV3QB-9YKF	1	50.54	50.67	D	PL	100	130	100	10000.00	100.00	0.34	0.64	0.92	924.16	0.09	0.13
F-AJV3QB-9YKF	2	50.54	50.60	A	PD	100	60	100	7639.44	87.40	0.28	0.44	0.64	635.36	0.08	0.11
F-AJV3QB-9YKF	3	50.60	50.67	A	PD	100	70	100	8912.68	94.41	0.24	0.36	0.52	519.84	0.06	0.08
F-4NV3QB-WHA5	1	51.31	51.44	D	PL	100	130	100	10000.00	100.00	0.34	0.44	0.64	635.36	0.06	0.09
F-4NV3QB-WHA5	2	51.31	51.37	A	PD	100	60	100	7639.44	87.40	0.20	0.20	0.29	288.80	0.04	0.05
F-4NV3QB-WHA5	3	51.37	51.44	A	PD	100	70	100	8912.68	94.41	0.18	0.20	0.29	288.80	0.03	0.04
F-BUY3QB-SKF9	1	51.50	51.58	A	PD	100	80	100	10185.92	100.93	0.40	0.62	0.90	895.28	0.09	0.12
F-TVY3QB-1ZM5	1	51.58	51.66	A	PD	100	80	100	10185.92	100.93	0.22	0.78	1.13	1126.32	0.11	0.15
F-K1Z3QB-MFNR	1	52.44	52.50	A	PD	100	60	100	7639.44	87.40	0.34	0.50	0.72	722.00	0.09	0.12

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Project Number	F186642
Client	SSE Renewables			Drilled By	KH/AB
Location	Neptune JUB			Borehole Number	BH10
Date Cored	06 29 2022	to	07 2 2022	Sampling Type	Geobor-S
Operator	AC / SI			Sampling Date	07 2 2022

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-6ABQQB-BD1C	1	51.65	51.78	D	PL	100	107	100	10000.00	100.00	0.14	0.58	0.84	837.52	0.08	0.11
F-6ABQQB-BD1C	2	51.65	51.70	A	PD	100	44	100	5602.25	74.85	0.34	0.86	1.24	1241.84	0.22	0.27
F-6ABQQB-BD1C	3	51.70	51.78	A	PD	100	62	100	7894.09	88.85	0.22	0.92	1.33	1328.48	0.17	0.22
F-KFBQQB-XJHE	1	52.20	52.25	A	PD	100	48	100	6111.55	78.18	0.24	0.38	0.55	548.72	0.09	0.11
F-IGBQQB-TB02	1	52.25	52.35	D	PL	100	100	100	10000.00	100.00	0.12	0.39	0.56	563.16	0.06	0.08
F-IGBQQB-TB02	2	52.25	52.30	A	PD	100	50	100	6366.20	79.79	0.42	0.52	0.75	750.88	0.12	0.15
F-IGBQQB-TB02	3	52.30	52.35	A	PD	100	50	100	6366.20	79.79	0.38	0.48	0.69	693.12	0.11	0.13
F-2IIQQB-IBLH	1	53.66	53.75	A	PD	100	90	100	11459.16	107.05	0.34	0.83	1.20	1198.52	0.10	0.15
F-5XIQQB-G8SS	1	54.69	54.75	A	PD	100	60	100	7639.44	87.40	0.32	0.92	1.33	1328.48	0.17	0.22
F-GONQQB-H8WI	1	54.93	55.09	D	PL	100	160	100	10000.00	100.00	0.14	0.84	1.21	1212.96	0.12	0.17
F-GONQQB-H8WI	2	54.93	55.03	A	PD	100	100	100	12732.40	112.84	0.22	1.22	1.76	1761.68	0.14	0.20
F-GONQQB-H8WI	3	55.03	55.09	A	PD	100	60	100	7639.44	87.40	0.32	1.14	1.65	1646.16	0.22	0.28
F-JOSQQB-YDWP	1	56.60	56.74	D	PL	100	140	100	10000.00	100.00	0.14	0.96	1.39	1386.24	0.14	0.19
F-JOSQQB-YDWP	2	56.60	56.68	A	PD	100	80	100	10185.92	100.93	0.20	1.69	2.44	2440.36	0.24	0.33
F-JOSQQB-YDWP	3	56.68	56.74	A	PD	100	60	100	7639.44	87.40	0.32	1.40	2.02	2021.60	0.26	0.34
F-JOSQQB-YDWP	1	56.74	56.80	A	PD	100	60	100	7639.44	87.40	0.22	1.48	2.14	2137.12	0.28	0.36
F-TRSQQB-G6IQ	1	56.80	56.90	D	PL	100	100	100	10000.00	100.00	0.13	0.52	0.75	750.88	0.08	0.10
F-TRSQQB-G6IQ	2	56.80	56.85	A	PD	100	50	100	6366.20	79.79	0.40	1.14	1.65	1646.16	0.26	0.32
F-TRSQQB-G6IQ	3	56.85	56.90	A	PD	100	50	100	6366.20	79.79	0.34	1.12	1.62	1617.28	0.25	0.31
F-CTYQQB-MXI3	1	58.18	58.29	D	PL	100	110	100	10000.00	100.00	0.14	0.48	0.69	693.12	0.07	0.09

Test Methods

Point Load Test	$W_{(width)}=(W_1+W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**		**Project Number**	**F186642**	
Client	**SSE Renewables**		**Drilled By**	**KH/AB**	
Location	**Neptune JUB**		**Borehole Number**	**BH10**	
Date Cored	**06 29 2022**	to **07 2 2022**	**Sampling Type**	**Geobor-S**	
Operator	**AC / SI**		**Sampling Date**	**07 2 2022**	

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-CTYQQB-MXI3	2	58.29	58.34	A	PD	100	50	100	6366.20	79.79	0.36	0.98	1.42	1415.12	0.22	0.27
F-CTYQQB-MXI3	3	58.34	58.39	A	PD	100	50	100	6366.20	79.79	0.28	1.48	2.14	2137.12	0.34	0.41
F-OI4RQB-CL3O	1	59.33	59.47	D	PL	100	140	100	10000.00	100.00	0.14	0.18	0.26	259.92	0.03	0.04
F-OI4RQB-CL3O	2	59.33	59.40	A	PD	100	70	100	8912.68	94.41	0.30	0.52	0.75	750.88	0.08	0.11
F-2M4RQB-NH4Y	1	59.67	59.88	D	PL	100	210	100	10000.00	100.00	0.22	0.32	0.46	462.08	0.05	0.06
F-2M4RQB-NH4Y	2	59.67	59.78	A	PD	100	108	100	13750.99	117.26	0.28	0.30	0.43	433.20	0.03	0.05
F-2M4RQB-NH4Y	3	59.78	59.88	A	PD	100	100	100	12732.40	112.84	0.36	0.54	0.78	779.76	0.06	0.09
F-JL0SQB-JGSJ	1	60.99	61.15	D	PL	100	152	100	10000.00	100.00	0.16	0.70	1.01	1010.80	0.10	0.14
F-JL0SQB-JGSJ	2	60.99	61.07	A	PD	100	73	100	9294.65	96.41	0.38	1.50	2.17	2166.00	0.23	0.31
F-JL0SQB-JGSJ	3	61.07	61.15	A	PD	100	76	100	9676.62	98.37	0.42	1.34	1.93	1934.96	0.20	0.27
F-DY0SQB-GN83	1	61.98	62.07	A	PD	100	91	100	11586.48	107.64	0.42	1.58	2.28	2281.52	0.20	0.28

Point Load Test ISRM Point Load Test	$W_{(width)}=(W_1+W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Project Number	F186642
Client	SSE Renewables			Drilled By	KH/AB
Location	Neptune JUB			Borehole Number	BH12
Date Cored	23/06/2022	to	23/06/2022	Sampling Type	Geobor S
Operator	SI			Sampling Date	23/06/2022

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load		P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (kN)	Peak (kN)	(MN)	(MPa)	
F-TJZ9QB-88EU	1	43.80	43.91	D	PL		110	100	10000.00	100.00	0.42	0.46	460.00	0.05	0.06
F-TJZ9QB-88EU	2	43.80	43.84	A	PD	100	40		5092.96	71.36	0.36	0.90	900.00	0.18	0.21
F-TJZ9QB-88EU	3	43.84	43.90	A	PD	100	60		7639.44	87.40	0.32	0.84	840.00	0.11	0.14
F-SKZ9QB-96PM	1	43.91	44.00	A	PD	100	90		11459.16	107.05	0.14	0.22	220.00	0.02	0.03
F-VS2AQB-2KN3	1	44.00	44.10	D	PL		100	100	10000.00	100.00	0.34	1.96	1960.00	0.20	0.27
F-VS2AQB-2KN3	2	44.00	44.05	A	PD	100	50		6366.20	79.79	0.24	1.62	1620.00	0.25	0.31
F-VS2AQB-2KN3	3	44.10	44.16	A	PD	100	60		7639.44	87.40	0.32	4.12	4120.00	0.54	0.69
F-323AQB-J1A6	1	45.40	45.50	A	PD	100	100		12732.40	112.84	0.32	1.18	1180.00	0.09	0.13
F-0V6AQB-1AOC	1	45.50	45.62	A	PD	100	120		15278.87	123.61	0.30	7.52	7520.00	0.49	0.74
F-0V6AQB-1AOC	1	45.50	45.62	D	PL		120	100	10000.00	100.00	0.32	1.04	1040.00	0.10	0.14
F-G47AQB-4OFE	1	46.78	46.88	A	PD	100	100		12732.40	112.84	0.14	0.30	300.00	0.02	0.03
F-G47AQB-4OFE	2	46.78	46.80	A	PD	100	20		2546.48	50.46	0.24	1.92	1920.00	0.75	0.76
F-K7AAQB-NU0B	1	48.02	48.21	D	PL		190	100	10000.00	100.00	0.34	8.60	8600.00	0.86	1.17
F-K7AAQB-NU0B	2	48.02	48.14	A	PD	100	120		15278.87	123.61	0.28	4.40	4400.00	0.29	0.43
F-K7AAQB-NU0B	3	48.14	48.21	A	PD	100	70		8912.68	94.41	0.32	3.70	3700.00	0.42	0.55
F-W9AAQB-VY3Y	1	48.51	48.64	D	PL		130	100	10000.00	100.00	0.32	4.94	4940.00	0.49	0.67
F-W9AAQB-VY3Y	3	48.51	48.58	A	PD	100	70		8912.68	94.41	0.24	4.20	4200.00	0.47	0.63
F-W9AAQB-VY3Y	2	48.57	48.640	D	PL		70	100	10000.00	100.00	0.40	3.46	3460.00	0.35	0.47
F-W9AAQB-VY3Y	4	48.58	48.640	A	PD	100	60		7639.44	87.40	0.20	3.00	3000.00	0.39	0.50
F-DZBAQB-2TFH	1	49.19	49.280	A	PD	100	90		11459.16	107.05	0.36	1.32	3000.00	0.26	0.37

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parallel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**KH/AB**
Location	**Neptune JUB**			**Borehole Number**	**BH12**
Date Cored	**23/06/2022**	to	**23/06/2022**	**Sampling Type**	**Geobor S**
Operator	**SI**			**Sampling Date**	**23/06/2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load		P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (kN)	Peak (kN)	(MN)	(MPa)	
F-KFBQQB-XJHE	3	52.20	52.220	A	PD	100	20		2546.4791	50.46	0.22	0.7	700.00	0.27	0.28
F-PNOAQB-GTFL	4	52.28	52.340	A	PD	100	60		7639.44	87.40	0.32	0.9	900.00	0.12	0.15
F-TJZ9QB-88EU	1	43.80	43.91	D	PL		110	100	10000	100.00	0.42	0.46	460.00	0.05	0.06
F-VS2AQB-2KN3	1	44.00	44.10	D	PL		100	100	10000	100.00	0.34	1.96	1960.00	0.20	0.27
F-0V6AQB-1AOC	1	45.50	45.62	D	PL		120	100	10000	100.00	0.32	1.04	1040.00	0.10	0.14
F-K7AAQB-NU0B	1	48.02	48.21	D	PL		190	100	10000	100.00	0.34	8.6	8600.00	0.86	1.17
F-W9AAQB-VY3Y	1	48.51	48.64	D	PL		130	100	10000	100.00	0.32	4.94	4940.00	0.49	0.67
F-W9AAQB-VY3Y	2	48.57	48.64	D	PL		70	100	10000	100.00	0.4	3.46	3460.00	0.35	0.47
F-80SAQB-HF01	1	52.52	52.63	D	PL		110	100	10000	100.00	0.32	0.82	820.00	0.08	0.11
F-XSKAQB-N4PR	1	50.61	50.67	D	PL		60	100	10000	100.00	0.38	1.28	1280.00	0.13	0.17
F-XSKAQB-N4PR	2	50.61	50.71	D	PL		100	100	10000	100.00	0.32	3.26	3260.00	0.33	0.45
F-PNOAQB-GTFL	1	52.15	52.34	D	PL		190	100	10000	100.00	0.3	0.7	700.00	0.07	0.10
F-PNOAQB-GTFL	2	52.22	52.340	D	PL		120	100	10000	100.00	0.3	2.52	2520.00	0.25	0.34
F-0KOAQB-AZZY	1	51.67	51.750	D	PL		80	100	10000	100.00	0.34	0.56	560.00	0.06	0.08
F-P9OAQB-JY3X	1	51.05	51.190	D	PL		140	100	10000	100.00	0.32	1.8	1800.00	0.18	0.25
F-VS2AQB-2KN3	2	44.00	44.050	A	PD	100	50		6366	79.79	0.24	1.62	1620.00	0.25	0.31
F-VS2AQB-2KN3	3	44.10	44.160	A	PD	100	60		7639	87.40	0.32	4.12	4120.00	0.54	0.69
F-DZBAQB-2TFH	1	49.19	49.280	A	PD	100	90		11459	107.05	0.36	1.32	1320.00	0.12	0.16
F-O1CAQB-KD1H	1	50.05	50.090	A	PD	100	40		5093	71.36	0.36	1.32	1320.00	0.26	0.30
F-M5SAQB-3Y6V	1	53.45	53.500	A	PD	100	50		6366	79.79	0.42	0.88	880.00	0.14	0.17

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parallel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**	
Client	**SSE Renewables**			**Drilled By**	**KH/AB**	
Location	**Neptune JUB**			**Borehole Number**	**BH13**	
Date Cored	**07 4 2022**	to	**07 5 2022**	**Sampling Type**	**Geobor-S**	
Operator	**AC / SI**			**Sampling Date**	**07 5 2022**	

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-6K7WQB-9EM1	1	33.59	33.77	D	PL		159	100	10000.00	100.00	0.18	1.46	2.11	2108.24	0.21	0.29
F-6K7WQB-9EM1	2	33.59	33.68	A	PD	100	87		11077.18	105.25	0.30	3.00	4.33	4332.00	0.39	0.55
F-6K7WQB-9EM1	3	33.68	33.76	A	PD	100	72		9167.32	95.75	0.36	1.44	2.08	2079.36	0.23	0.30
F-XL7WQB-J1J5	1	33.77	33.91	D	PL		149	100	10000.00	100.00	0.20	0.32	0.46	462.08	0.05	0.06
F-XL7WQB-J1J5	2	33.77	33.85	A	PD	100	80		10185.92	100.93	0.38	0.60	0.87	866.40	0.09	0.12
F-XL7WQB-J1J5	3	33.85	33.91	A	PD	100	60		7639.44	87.40	0.20	0.34	0.49	490.96	0.06	0.08
F-2W7WQB-CLXJ	1	34.15	34.26	D	PL		104	100	10000.00	100.00	0.24	0.52	0.75	750.88	0.08	0.10
F-2W7WQB-CLXJ	2	34.15	34.20	A	PD	100	50		6366.20	79.79	0.38	0.58	0.84	837.52	0.13	0.16
F-2W7WQB-CLXJ	3	34.20	34.26	A	PD	100	60		7639.44	87.40	0.36	0.74	1.07	1068.56	0.14	0.18
F-Z1CWQB-Z6TJ	1	35.06	35.21	D	PL		150	100	10000.00	100.00	0.16	0.26	0.38	375.44	0.04	0.05
F-Z1CWQB-Z6TJ	2	35.06	35.16	A	PD	100	82		10440.56	102.18	0.36	0.92	1.33	1328.48	0.13	0.18
F-Z1CWQB-Z6TJ	3	35.16	35.21	A	PD	100	56		7130.14	84.44	0.40	3.62	5.23	5227.28	0.73	0.93
F-B3CWQB-IT5T	1	35.43	35.58	D	PL		150	100	10000.00	100.00	0.34	1.06	1.53	1530.64	0.15	0.21
F-B3CWQB-IT5T	2	35.43	35.50	A	PD	100	70		8912.68	94.41	0.74	3.24	4.68	4678.56	0.52	0.70
F-B3CWQB-IT5T	3	35.50	35.58	A	PD	100	80		10185.92	100.93	0.02	0.54	0.78	779.76	0.08	0.11
F-QSFWQB-YGCN	1	36.28	36.45	D	PL		170	100	10000.00	100.00	0.16	0.90	1.30	1299.60	0.13	0.18
F-QSFWQB-YGCN	2	36.28	36.38	A	PD	100	100		12732.40	112.84	0.26	1.54	2.22	2223.76	0.17	0.25
F-QSFWQB-YGCN	3	36.38	36.45	A	PD	100	70		8912.68	94.41	0.30	1.15	1.66	1660.60	0.19	0.25
F-IVFWQB-E3H6	1	36.88	36.99	A	PD	100	60		7639.44	87.40	0.30	0.92	1.33	1328.48	0.17	0.22
F-FUIWQB-O0QZ	1	37.07	37.21	D	PL		140	100	10000.00	100.00	0.18	0.68	0.98	981.92	0.10	0.13

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Project Number	F186642
Client	SSE Renewables			Drilled By	KH
Location	Neptune JUB			Borehole Number	BH13
Date Cored	07 4 2022	to	07 5 2022	Sampling Type	Geobor-S
Operator	AC / SI			Sampling Date	07 5 2022

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-FUIWQB-O0QZ	2	37.07	37.12	A	PD	100	50		6366.20	79.79	0.70	1.57	2.27	2267.08	0.36	0.44
F-FUIWQB-O0QZ	3	37.12	37.21	A	PD	100	90		11459.16	107.05	0.50	2.24	3.23	3234.56	0.28	0.40
F-UYPWQB-YRCK	1	38.86	39.00	D	PL		140	100	10000.00	100.00	0.20	0.65	0.94	938.60	0.09	0.13
F-UYPWQB-YRCK	2	38.86	38.94	A	PD	100	80		10185.92	100.93	0.32	1.16	1.68	1675.04	0.16	0.23
F-UYPWQB-YRCK	3	38.94	39.00	A	PD	100	60		7639.44	87.40	0.34	1.44	2.08	2079.36	0.27	0.35
F-Y0QWQB-S88J	1	39.43	39.57	D	PL		140	100	10000.00	100.00	0.16	1.44	2.08	2079.36	0.21	0.28
F-Y0QWQB-S88J	2	39.43	39.50	A	PD	100	70		8912.68	94.41	0.26	0.70	1.01	1010.80	0.11	0.15
F-Y0QWQB-S88J	3	39.50	39.57	A	PD	100	70		8912.68	94.41	0.26	0.48	0.69	693.12	0.08	0.10
F-7MTWQB-F0I2	1	40.85	41.00	D	PL		150	100	10000.00	100.00	0.20	0.64	0.92	924.16	0.09	0.13
F-7MTWQB-F0I2	2	40.85	40.92	A	PD	100	70		8912.68	94.41	0.33	0.50	0.72	722.00	0.08	0.11
F-7MTWQB-F0I2	3	40.92	41.00	A	PD	100	80		10185.92	100.93	0.18	1.10	1.59	1588.40	0.16	0.21
F-9TXWQB-LBBB	1	44.25	44.39	D	PL		140	100	10000.00	100.00	0.20	4.36	6.30	6295.84	0.63	0.86
F-9TXWQB-LBBB	2	44.25	44.33	A	PD	100	80		10185.92	100.93	0.40	8.02	11.58	11580.88	1.14	1.56
F-V30XQB-6XXK	1	44.39	44.58	D	PL		190	100	10000.00	100.00	0.14	3.72	5.37	5371.68	0.54	0.73
F-V30XQB-6XXK	2	44.39	44.46	A	PD	100	70		8912.68	94.41	0.22	10.02	14.47	14468.88	1.62	2.16
F-V30XQB-6XXK	3	44.46	44.58	A	PD	100	120		15278.87	123.61	0.30	9.44	13.63	13631.36	0.89	1.34
F-R48XQB-VNL7	1	48.10	48.17	I			69	100			0.36	0.44	0.64	635.36	0.06	0.09
F-W9AAQB-VY3Y	1	48.57	48.70	D	PL		130	100	10000.00	100.00	0.18	0.84	1.21	1212.96	0.12	0.17
F-W9AAQB-VY3Y	2	48.57	48.65	A	PD	100	80		10185.92	100.93	0.34	0.78	1.13	1126.32	0.11	0.15
F-FH8XQB-NC9S	1	48.93	49.00	D	PL		70	100	10000.00	100.00	0.24	0.42	0.61	606.48	0.06	0.08

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB/KH**
Location	**Neptune JUB**			**Borehole Number**	**BH26**
Date Cored	**06 3 2022**	to	**06 4 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 3 2022 - 06 4 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-RMZAPB-IZND	1	39.60	39.76	D	PL	100.00	160.00	100.00	10000.00	100.00	0.34	9.78	14.12	14122.32	1.41	1.93
F-RMZAPB-IZND	2	39.60	39.68	A	PD	100.00	80.00	100.00	10185.92	100.93	0.24	0.80	1.16	1155.20	0.11	0.16
F-RMZAPB-IZND	3	39.68	39.76	A	PD	100.00	80.00	100.00	10185.92	100.93	0.26	0.99	1.43	1429.56	0.14	0.19
F-BQZAPB-13B6	1	40.40	40.50	D	PL	100.00	100.00	100.00	10000.00	100.00	0.18	0.36	0.52	519.84	0.05	0.07
F-BQZAPB-13B6	2	40.40	40.50	A	PD	100.00	100.00	100.00	12732.40	112.84	0.44	0.62	0.90	895.28	0.07	0.10
F-NM1BPB-67HN	1	40.76	40.82	A	PD	100.00	60.00	100.00	7639.44	87.40	0.36	0.38	0.55	548.72	0.07	0.09
F-LO1BPB-EJ5B	1	41.07	41.17	D	PL	100.00	100.00	100.00	10000.00	100.00	0.30	1.94	2.80	2801.36	0.28	0.38
F-LO1BPB-EJ5B	2	41.07	41.12	A	PD	100.00	50.00	100.00	6366.20	79.79	0.36	1.54	2.22	2223.76	0.35	0.43
F-LO1BPB-EJ5B	3	41.12	41.17	A	PD	100.00	50.00	100.00	6366.20	79.79	0.36	2.24	3.23	3234.56	0.51	0.63
F-PJ5BPB-E9VI	1	42.34	42.49	D	PL	100.00	150.00	100.00	10000.00	100.00	0.32	3.06	4.42	4418.64	0.44	0.60
F-9V5BPB-RLDA	1	42.73	42.80	D	PL	100.00	70.00	100.00	10000.00	100.00	0.16	1.54	2.22	2223.76	0.22	0.30
F-9V5BPB-RLDA	2	42.73	42.80	A	PD	100.00	70.00	100.00	8912.68	94.41	0.38	1.52	2.19	2194.88	0.25	0.33
F-6CBBPB-8MY4	1	43.72	43.87	D	PL	100.00	150.00	100.00	10000.00	100.00	0.30	2.46	3.55	3552.24	0.36	0.49
F-6CBBPB-8MY4	2	43.72	43.79	A	PD	100.00	70.00	100.00	8912.68	94.41	0.26	5.90	8.52	8519.60	0.96	1.27
F-6CBBPB-8MY4	3	43.79	43.87	A	PD	100.00	80.00	100.00	10185.92	100.93	0.32	5.20	7.51	7508.80	0.74	1.01
F-8EBBPB-KMWA	1	44.17	44.30	D	PL	100.00	130.00	100.00	10000.00	100.00	0.30	5.34	7.71	7710.96	0.77	1.05
F-8EBBPB-KMWA	2	44.17	44.25	A	PD	100.00	80.00	100.00	10185.92	100.93	0.32	5.34	7.71	7710.96	0.76	1.04
F-8EBBPB-KMWA	3	44.25	44.30	A	PD	100.00	50.00	100.00	6366.20	79.79	0.38	8.30	11.99	11985.20	1.88	2.32
F-40EBPB-0285	1	44.60	44.73	D	PL	100.00	130.00	100.00	10000.00	100.00	0.30	2.56	3.70	3696.64	0.37	0.50
F-40EBPB-0285	2	44.60	44.67	A	PD	100.00	70.00	100.00	8912.68	94.41	0.28	2.86	4.13	4129.84	0.46	0.62

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB/KH**
Location	**Neptune JUB**			**Borehole Number**	**BH26**
Date Cored	**06 3 2022**	to	**06 4 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 3 2022 - 06 4 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-M6EBPB-023J	1	45.70	45.80	D	PL	100.00	100.00	100.00	10000.00	100.00	0.30	2.02	2.92	2916.88	0.29	0.40
F-M6EBPB-023J	2	45.70	45.75	A	PD	100.00	50.00	100.00	6366.20	79.79	0.70	4.26	6.15	6151.44	0.97	1.19
F-M6EBPB-023J	3	45.75	45.80	A	PD	100.00	50.00	100.00	6366.20	79.79	0.18	2.76	3.99	3985.44	0.63	0.77
F-YRGBPB-SSG8	1	47.12	47.30	D	PL	100.00	180.00	100.00	10000.00	100.00	0.30	13.72	19.81	19811.68	1.98	2.71
F-YRGBPB-SSG8	2	47.12	47.20	A	PD	100.00	80.00	100.00	10185.92	100.93	0.44	11.78	17.01	17010.32	1.67	2.29
F-YRGBPB-SSG8	3	47.20	47.30	A	PD	100.00	100.00	100.00	12732.40	112.84	0.22	15.58	22.50	22497.52	1.77	2.55
F-U6LBPB-UI9K	1	47.91	47.98	A	PD	100.00	70.00	100.00	8912.68	94.41	0.22	0.38	0.55	548.72	0.06	0.08
F-U6LBPB-UI9K	2	47.91	47.98	D	PL	55.00	70.00	55.00	3025.00	55.00	0.20	0.28	0.40	404.32	0.13	0.14
F-LCLBPB-FMDU	1	48.52	48.60	A	PD	100.00	80.00	100.00	10185.92	100.93	0.42	2.66	3.84	3841.04	0.38	0.52
F-HDLBPB-4W7Y	1	48.60	48.66	A	PD	100.00	60.00	100.00	7639.44	87.40	0.28	4.52	6.53	6526.88	0.85	1.10
F-HDLBPB-4W7Y	2	48.60	48.66	D	PL	61.00	60.00	61.00	3721.00	61.00	0.26	1.60	2.31	2310.40	0.62	0.68
F-8LQBPB-2SDG	1	49.12	49.25	D	PL	100.00	130.00	100.00	10000.00	100.00	0.30	2.56	3.70	3696.64	0.37	0.50
F-8LQBPB-2SDG	2	49.12	49.19	A	PD	100.00	70.00	100.00	8912.68	94.41	0.34	4.84	6.99	6988.96	0.78	1.04
F-8LQBPB-2SDG	3	49.19	49.25	A	PD	100.00	60.00	100.00	7639.44	87.40	0.32	4.62	6.67	6671.28	0.87	1.12
F-20TBPB-TJ7Z	1	50.39	50.44	D	PL	100.00	50.00	100.00	10000.00	100.00	0.30	2.20	3.18	3176.80	0.32	0.43
F-20TBPB-TJ7Z	2	50.30	50.37	A	PD	100.00	70.00	100.00	8912.68	94.41	0.24	6.44	9.30	9299.36	1.04	1.39
F-20TBPB-TJ7Z	3	50.37	50.44	A	PD	100.00	70.00	100.00	8912.68	94.41	1.30	2.34	3.38	3378.96	0.38	0.50
F-72TBPB-0UYL	1	51.04	51.20	D	PL	100.00	160.00	100.00	10000.00	100.00	0.28	0.56	0.81	808.64	0.08	0.11
F-72TBPB-0UYL	2	51.04	51.11	A	PD	100.00	70.00	100.00	8912.68	94.41	0.32	5.76	8.32	8317.44	0.93	1.24
F-72TBPB-0UYL	3	51.11	51.20	A	PD	100.00	90.00	100.00	11459.16	107.05	0.38	8.92	12.88	12880.48	1.12	1.58

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	**Arklow Bank Wind Park - Geotechnical Borehole Survey 2022**			**Project Number**	**F186642**
Client	**SSE Renewables**			**Drilled By**	**AB/KH**
Location	**Neptune JUB**			**Borehole Number**	**BH26**
Date Cored	**06 3 2022**	to	**06 4 2022**	**Sampling Type**	**Geobor-S**
Operator	**SI / AB**			**Sampling Date**	**06 3 2022 - 06 4 2022**

Test Results

Sample No	Test No	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
		from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-FAVBPB-LQ4E	1	51.80	51.92	D	PL	100	120	100	10000.00	100.00	0.3	1.02	1.47	1472.88	0.15	0.20
F-FAVBPB-LQ4E	2	51.80	51.87	A	PD	100	70	100	8912.68	94.41	0.36	5.69	8.22	8216.36	0.92	1.23
F-FAVBPB-LQ4E	3	51.87	51.92	A	PD	100	50	100	6366.20	79.79	0.38	2.12	3.06	3061.28	0.48	0.59
F-TXUBPB-4SHV	1	52.58	52.68	D	PL	100	100	100	10000.00	100.00	0.18	2.42	3.49	3494.48	0.35	0.48
F-TXUBPB-4SHV	2	52.58	52.65	A	PD	100	70	100	8912.68	94.41	0.44	5.84	8.43	8432.96	0.95	1.26
F-HIVBPB-H61H	1	53.25	53.30	A	PD	100	50	100	6366.20	79.79	0.32	2.78	4.01	4014.32	0.63	0.78
F-62YBPB-H65M	1	53.52	53.66	D	PL	100	140	100	10000.00	100.00	0.16	1.58	2.28	2281.52	0.23	0.31
F-PQYBPB-8NS6	1	53.66	53.74	A	PD	100	80	100	10185.92	100.93	0.36	0.54	0.78	779.76	0.08	0.11
F-EFYBPB-5VAQ	1	54.22	54.35	D	PL	100	130	100	10000.00	100.00	0.36	1.52	2.19	2194.88	0.22	0.30
F-EFYBPB-5VAQ	2	54.22	54.28	A	PD	100	60	100	7639.44	87.40	0.38	4.36	6.30	6295.84	0.82	1.06
F-EFYBPB-5VAQ	3	54.28	54.35	A	PD	100	70	100	8912.68	94.41	0.4	3.6	5.20	5198.40	0.58	0.78
F-CHYBPB-62KF	1	54.71	54.80	D	PL	100	90	100	10000.00	100.00	0.16	0.58	0.84	837.52	0.08	0.11
F-CHYBPB-62KF	2	54.71	54.80	A	PD	100	90	100	11459.16	107.05	0.24	1.6	2.31	2310.40	0.20	0.28
F-ZZ0CPB-G0CD	1	56.17	56.28	D	PL	100	110	100	10000.00	100.00	0.34	2.82	4.07	4072.08	0.41	0.56
F-ZZ0CPB-G0CD	2	56.17	56.24	A	PD	100	70	100	8912.68	94.41	0.34	2.57	3.71	3711.08	0.42	0.55
F-ZZ0CPB-G0CD	3	56.24	56.28	A	PD	100	40	100	5092.96	71.36	0.4	3.58	5.17	5169.52	1.02	1.19

Test Methods

Point Load Test	$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test	Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
	Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
	Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
		$I_s(50)$ = corrected point load strength index in MPa

POINT LOAD TEST RESULTS

Project	Arklow Bank Wind Park - Geotechnical Borehole Survey 2022			Project Number	F186642
Client	SSE Renewables			Drilled By	KH
Location	Neptune JUB			Borehole Number	BH28
Date Cored	06 15 2022	to	06 15 2022	Sampling Type	Geobor-S
Operator	KR/FS			Sampling Date	06 15 2022

Test Results

Sample No	Test No	Run Number	Box Number	Depth (m)		Type	Direction*	Axial (A) or Block (B)Test		Diametral (D)	D^2	De	Point Load			P	I_s	$I_s(50)$
				from	to			W (mm) (Width/ Diameter)	D (mm) (Depth)	D (mm) (Diameter)	(mm^2)	(mm)	Reading (MPa)	Peak (MPa)	Peak (kN)	(MN)	(MPa)	
F-IN3VPB-FML4	1	16	16	56.72	56.750	IA	PD	100	30	50	3820	61.80	0.26	0.3	0.4332	433.2	0.113	0.125
F-LR8VPB-FJ8U	1	19	19	59.12	59.22	D	PL	100	100	100	10000	100.00	0.22	0.34	0.49096	490.96	0.049	0.067
F-LR8VPB-FJ8U	2	19	19	59.12	59.22	ID	PL	100	100	95	9025	95.00	0.2	0.28	0.40432	404.32	0.045	0.060
F-BX8VPB-H5PX	1	19	19	59.52	59.67	D	PL	100	150	100	10000	100.00	0.34	0.34	0.49096	490.96	0.049	0.067
F-BX8VPB-H5PX	2	19	19	59.52	59.59	A	PD	100	70	100	8913	94.41	0.08	0.24	0.34656	346.56	0.039	0.052
F-BX8VPB-H5PX	3	19	19	59.59	59.67	A	PD	100	80	100	10186	100.93	0.14	0.22	0.31768	317.68	0.031	0.043
F-QTBVPB-UHZN	1	20	20	60.50	60.62	D	PL	100	120	100	10000	100.00	0.18	0.6	0.8664	866.4	0.087	0.118
F-QTBVPB-UHZN	2	20	20	60.56	60.620	A	PD	100	60	100	7639	87.40	0.14	0.15	0.2166	216.6	0.028	0.036
F-QTBVPB-UHZN	3	20	20	60.50	60.560	A	PD	100	60	100	7639	87.40	0.06	0.14	0.20216	202.16	0.026	0.034
F-XWCVPB-Q0TU	1	20	20	61.90	61.93	A	PD	100	30	100	3820	61.80	0.18	1.24	1.79056	1790.56	0.469	0.516
F-XWCVPB-Q0TU	2	20	20	61.89	61.92	A	PD	100	30	100	3820	61.80	0.26	2.56	3.69664	3696.64	0.968	1.065
F-AGFVPB-R00S	1	21	21	62.00	62.20	D	PL	100	200	100	10000	100.00	0.18	1.26	1.81944	1819.44	0.182	0.249
F-AGFVPB-R00S	2	21	21	62.07	62.20	D	PL	100	130	100	10000	100.00	0.18	1.02	1.47288	1472.88	0.147	0.201
F-AGFVPB-R00S	3	21	21	62.00	62.10	A	PD	100	100	100	12732	112.84	0.18	2.15	3.1046	3104.6	0.244	0.352
F-AGFVPB-R00S	4	21	21	62.11	62.20	A	PD	100	90	100	11459	107.05	0.24	1.76	2.54144	2541.44	0.222	0.312
F-FPIVPB-VTTQ	1	22	22	64.29	64.44	D	PL	100	150	100	10000	100.00	0.35	0.35	0.5054	505.4	0.051	0.069
F-FPIVPB-VTTQ	2	22	22	64.29	64.350	A	PD	100	60	100	7639	87.40	0.28	0.78	1.12632	1126.32	0.147	0.190
F-FPIVPB-VTTQ	3	22	22	64.35	64.440	A	PD	100	90	100	11459	107.05	0.06	0.4	0.5776	577.6	0.050	0.071

Test Methods

Point Load Test		$W_{(width)}=(W_1 + W_2)/2$	Type A = axial, D = diametral, I = Irregular Lump
ISRM Point Load Test		Diametral core test – Length / Diameter ratio >1	*Direction = Perpendicular to or parrellel to planes of weakness
		Axial core test – Length / Diameter ratio = 0.3 -1.0 (Length = $D_{(depth)}$ and Diameter = $W_{(width)}$)	P = load at failure in MN
		Block Test $D_{(depth)}$ / $W_{(width)}$ ratio = 0.3 – 1.0 and L. 0.5W	I_s = Uncorrected point load strength index in MPa
			$I_s(50)$ = corrected point load strength index in MPa

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH09	35.4	84	B	F-6Q73QB-28NS	1	35.4	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	35.4	84	B	F-6Q73QB-28NS	2	35.4	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	35.4	84	B	F-6Q73QB-28NS	3	35.47	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	35.88	86	B	F-7R73QB-VFE8	1	35.88	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	35.88	86	B	F-7R73QB-VFE8	2	35.88	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	35.88	86	B	F-7R73QB-VFE8	3	35.93	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	36	87	B	F-5AB3QB-7BNC	1	36	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	36	87	B	F-5AB3QB-7BNC	2	36	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	36	87	B	F-5AB3QB-7BNC	3	36.06	Very weak thinly cross laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	36.63	93	B	F-TFB3QB-ZXHR	1	36.63	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	36.63	93	B	F-TFB3QB-ZXHR	2	36.66	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	36.75	94	B	F-EGB3QB-NLI8	1	36.75	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	36.75	94	B	F-EGB3QB-NLI8	2	36.78	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.05	100	B	F-8RC3QB-1M1G	1	38.05	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.05	100	B	F-8RC3QB-1M1G	2	38.05	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.05	100	B	F-8RC3QB-1M1G	3	38.11	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.4	103	B	F-DVD3QB-DMIX	1	38.4	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.4	103	B	F-DVD3QB-DMIX	2	38.4	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	38.4	103	B	F-DVD3QB-DMIX	3	38.5	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.19	107	B	F-10E3QB-VH8I	1	39.19	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.19	107	B	F-10E3QB-VH8I	2	39.19	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.19	107	B	F-10E3QB-VH8I	3	39.25	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.32	108	B	F-I2E3QB-YR6J	1	39.32	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.32	108	B	F-I2E3QB-YR6J	2	39.32	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	39.32	108	B	F-I2E3QB-YR6J	3	39.39	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	40	113	B	F-3ZG3QB-ENX7	1	40	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	40	113	B	F-3ZG3QB-ENX7	2	40	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	40	113	B	F-3ZG3QB-ENX7	3	40.06	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	40	113	B	F-3ZG3QB-ENX7	4	40.12	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	41.13	118	B	F-KUI3QB-NPIA	1	41.13	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	41.33	120	B	F-XWI3QB-LOLS	1	41.33	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	41.33	120	B	F-XWI3QB-LOLS	2	41.33	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	41.33	120	B	F-XWI3QB-LOLS	3	41.4	Weak thinly laminated brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	42.27	125	B	F-H1K3QB-56CG	1	42.27	Very weak thinly laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	42.27	125	B	F-H1K3QB-56CG	2	42.27	Very weak thinly laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	42.27	125	B	F-H1K3QB-56CG	3	42.34	Very weak thinly laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	42.74	128	B	F-YAL3QB-XNSM	1	42.74	Very weak thinly laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	42.74	128	B	F-YAL3QB-XNSM	2	42.74	Very weak thinly laminated brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH09	44.14	137	B	F-WSM3QB-YJZA	1	44.14	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	44.14	137	B	F-WSM3QB-YJZA	2	44.14	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	44.43	139	B	F-4UM3QB-TN2M	1	44.43	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	44.5	140	B	F-G7O3QB-T5PS	1	44.5	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	44.5	140	B	F-G7O3QB-T5PS	2	44.5	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	44.5	140	B	F-G7O3QB-T5PS	3	44.58	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	45.32	143	B	F-BAO3QB-69VN	1	45.32	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	45.32	143	B	F-BAO3QB-69VN	2	45.39	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	45.32	143	B	F-BAO3QB-69VN	3	45.32	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	45.97	147	B	F-9IP3QB-Q30G	1	45.97	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	47	152	B	F-48R3QB-4ST5	1	47	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	47.85	158	B	F-YLS3QB-ENDA	1	47.85	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	47.85	158	B	F-YLS3QB-ENDA	2	47.9	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	47.85	158	B	F-YLS3QB-ENDA	3	47.85	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	48.11	161	B	F-4PS3QB-K080	1	48.11	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	48.5	163	B	F-9JT3QB-NHJ4	1	48.5	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	48.5	163	B	F-9JT3QB-NHJ4	2	48.5	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	48.5	163	B	F-9JT3QB-NHJ4	3	48.61	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	49.3	167	B	F-VNT3QB-A3X6	1	49.3	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	49.89	171	B	F-VGU3QB-38TL	1	49.89	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	49.89	171	B	F-VGU3QB-38TL	2	49.89	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	49.89	171	B	F-VGU3QB-38TL	3	49.94	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	50.37	174	B	F-FIU3QB-84QC	1	50.37	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	50.37	174	B	F-FIU3QB-84QC	2	50.37	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH09	50.37	174	B	F-FIU3QB-84QC	3	50.41	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	50.54	176	B	F-AJV3QB-9YKF	1	50.54	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	50.54	176	B	F-AJV3QB-9YKF	2	50.54	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	50.54	176	B	F-AJV3QB-9YKF	3	50.6	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	51.31	181	B	F-4NV3QB-WHA5	1	51.31	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	51.31	181	B	F-4NV3QB-WHA5	2	51.31	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	51.31	181	B	F-4NV3QB-WHA5	3	51.37	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	51.5	183	B	F-BUY3QB-SKF9	1	51.5	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	51.58	184	B	F-TVY3QB-1ZM5	1	51.58	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007
BH09	52.44	189	B	F-K1Z3QB-MFNR	1	52.44	Weak brownish red medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH10	51.65	130	B	F-6ABQQB-BD1C	1	51.65	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	51.65	130	B	F-6ABQQB-BD1C	2	51.65	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	51.65	130	B	F-6ABQQB-BD1C	3	51.7	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	52.2	133	B	F-KFBQQB-XJHE	1	52.2	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	52.25	134	B	F-IGBQQB-TB02	1	52.25	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	52.25	134	B	F-IGBQQB-TB02	2	52.25	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	52.25	134	B	F-IGBQQB-TB02	3	52.3	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	53.66	139	B	F-2IIQQB-IBLH	1	53.66	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	54.69	144	B	F-5XIQQB-G8SS	1	54.69	Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE.	As received	ISRM 2007
BH10	54.93	146	B	F-GONQQB-H8WI	1	54.93	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	54.93	146	B	F-GONQQB-H8WI	2	54.93	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	54.93	146	B	F-GONQQB-H8WI	3	55.03	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.6	151	B	F-JOSQQB-YDWP	1	56.6	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.6	151	B	F-JOSQQB-YDWP	1	56.74	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.6	151	B	F-JOSQQB-YDWP	2	56.6	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.6	151	B	F-JOSQQB-YDWP	3	56.68	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.8	153	B	F-TRSQQB-G6IQ	1	56.8	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.8	153	B	F-TRSQQB-G6IQ	2	56.8	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	56.8	153	B	F-TRSQQB-G6IQ	3	56.85	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	1	58.18	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	1	58.29	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	2	58.18	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	2	58.29	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	3	58.24	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	58.18	159	B	F-CTYQQB-MXI3	3	58.34	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	59.33	168	B	F-OI4RQB-CL3O	1	59.33	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	59.33	168	B	F-OI4RQB-CL3O	2	59.33	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	59.67	171	B	F-2M4RQB-NH4Y	1	59.67	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	59.67	171	B	F-2M4RQB-NH4Y	2	59.67	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	59.67	171	B	F-2M4RQB-NH4Y	3	59.78	Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH10	60.99	174	B	F-JL0SQB-JGSJ	1	60.99	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH10	60.99	174	B	F-JL0SQB-JGSJ	2	60.99	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	As received	ISRM 2007
BH10	60.99	174	B	F-JL0SQB-JGSJ	3	61.07	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	As received	ISRM 2007
BH10	61.98	177	B	F-DY0SQB-GN83	1	61.98	Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH12	43.8	115	B	F-TJZ9QB-88EU	1	43.8	Moderately weak and medium strong brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH12	43.8	115	B	F-TJZ9QB-88EU	2	43.8	Moderately weak and medium strong brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH12	43.8	115	B	F-TJZ9QB-88EU	3	43.84	Moderately weak and medium strong brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH12	43.91	116	B	F-SKZ9QB-96PM	1	43.91	Moderately weak and medium strong brownish red fine grained SANDSTONE.	As received	ISRM 2007
BH12	44	117	B	F-VS2AQB-2KN3	1	44	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	44	117	B	F-VS2AQB-2KN3	2	44	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	44	117	B	F-VS2AQB-2KN3	3	44.1	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	45.4	121	B	F-323AQB-J1A6	1	45.4	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	45.5	122	B	F-0V6AQB-1AOC	1	45.5	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	45.5	122	B	F-0V6AQB-1AOC	1	45.55	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	46.78	128	B	F-G47AQB-4OFE	1	46.78	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	46.78	128	B	F-G47AQB-4OFE	2	46.78	Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.02	133	B	F-K7AAQB-NU0B	1	48.02	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.02	133	B	F-K7AAQB-NU0B	2	48.02	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.02	133	B	F-K7AAQB-NU0B	3	48.14	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.51	135	B	F-W9AAQB-VY3Y	1	48.51	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.51	135	B	F-W9AAQB-VY3Y	2	48.57	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.51	135	B	F-W9AAQB-VY3Y	3	48.51	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	48.51	135	B	F-W9AAQB-VY3Y	4	48.58	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	49.19	137	B	F-DZBAQB-2TFH	1	49.19	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	50.05	139	B	F-O1CAQB-KD1H	1	50.05	Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH12	50.61	142	B	F-XSKAQB-N4PR	1	50.61	Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE.	As received	ISRM 2007
BH12	50.61	142	B	F-XSKAQB-N4PR	2	50.61	Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE.	As received	ISRM 2007
BH12	50.61	142	B	F-XSKAQB-N4PR	3	50.61	Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE.	As received	ISRM 2007
BH12	50.61	142	B	F-XSKAQB-N4PR	4	50.63	Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE.	As received	ISRM 2007
BH12	50.83	144	B	F-U0LAQB-FMX8	1	50.83	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.05	146	B	F-P9OAQB-JY3X	1	51.05	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.05	146	B	F-P9OAQB-JY3X	2	51.05	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.05	146	B	F-P9OAQB-JY3X	3	51.09	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.67	150	B	F-0KOAQB-AZZY	1	51.67	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.67	150	B	F-0KOAQB-AZZY	2	51.67	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	51.67	150	B	F-0KOAQB-AZZY	3	51.73	Very weak reddish brown thickly laminated to thinly bedded MUDSTONE.	As received	ISRM 2007
BH12	52.15	154	B	F-PNOAQB-GTFL	1	52.15	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.15	154	B	F-PNOAQB-GTFL	2	52.15	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.15	154	B	F-PNOAQB-GTFL	2	52.22	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.15	154	B	F-PNOAQB-GTFL	3	52.19	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH12	52.15	154	B	F-PNOAQB-GTFL	4	52.28	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.52	156	B	F-80SAQB-HF01	1	52.52	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.52	156	B	F-80SAQB-HF01	2	52.52	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	52.52	156	B	F-80SAQB-HF01	3	52.6	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007
BH12	53.45	161	B	F-M5SAQB-3Y6V	1	53.45	Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH13	33.59	92	B	F-6K7WQB-9EM1	1	33.59	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	33.59	92	B	F-6K7WQB-9EM1	2	33.59	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	33.59	92	B	F-6K7WQB-9EM1	3	33.68	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	33.77	93	B	F-XL7WQB-J1J5	1	33.77	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	33.77	93	B	F-XL7WQB-J1J5	2	33.77	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	33.77	93	B	F-XL7WQB-J1J5	3	33.85	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	34.15	95	B	F-2W7WQB-CLXJ	1	34.15	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	34.15	95	B	F-2W7WQB-CLXJ	2	34.15	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	34.15	95	B	F-2W7WQB-CLXJ	3	34.2	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.06	106	B	F-Z1CWQB-Z6TJ	1	35.06	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.06	106	B	F-Z1CWQB-Z6TJ	2	35.06	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.06	106	B	F-Z1CWQB-Z6TJ	3	35.16	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.43	105	B	F-B3CWQB-IT5T	1	35.43	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.43	105	B	F-B3CWQB-IT5T	2	35.43	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	35.43	105	B	F-B3CWQB-IT5T	3	35.5	Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE.	As received	ISRM 2007
BH13	36.28	111	B	F-QSFWQB-YGCN	1	36.28	Moderately weak and medium strong reddish brown MUDSTONE.	As received	ISRM 2007
BH13	36.28	111	B	F-QSFWQB-YGCN	2	36.28	Moderately weak and medium strong reddish brown MUDSTONE.	As received	ISRM 2007
BH13	36.28	111	B	F-QSFWQB-YGCN	3	36.38	Moderately weak and medium strong reddish brown MUDSTONE.	As received	ISRM 2007
BH13	36.88	114	B	F-IVFWQB-E3H6	1	36.88	Moderately weak and medium strong reddish brown MUDSTONE.	As received	ISRM 2007
BH13	37.07	116	B	F-FUIWQB-O0QZ	1	37.07	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	37.07	116	B	F-FUIWQB-O0QZ	2	37.07	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	37.07	116	B	F-FUIWQB-O0QZ	3	37.12	Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	38.86	121	B	F-UYPWQB-YRCK	1	38.86	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	38.86	121	B	F-UYPWQB-YRCK	2	38.86	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	38.86	121	B	F-UYPWQB-YRCK	3	38.94	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	39.43	123	B	F-Y0QWQB-S88J	1	39.43	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	39.43	123	B	F-Y0QWQB-S88J	2	39.43	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	39.43	123	B	F-Y0QWQB-S88J	3	39.5	Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE.	As received	ISRM 2007
BH13	40.85	127	B	F-7MTWQB-F0I2	1	40.85	Weak to medium strong medium bedded to thickly spaced reddish brown and rare bluish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	40.85	127	B	F-7MTWQB-F0I2	2	40.85	Weak to medium strong medium bedded to thickly spaced reddish brown and rare bluish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	40.85	127	B	F-7MTWQB-F0I2	3	40.92	Weak to medium strong medium bedded to thickly spaced reddish brown and rare bluish grey fine grained SANDSTONE.	As received	ISRM 2007
BH13	44.25	132	B	F-9TXWQB-LBBB	1	44.25	Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH13	44.25	132	B	F-9TXWQB-LBBB	2	44.25	Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH13	44.39	133	B	F-V30XQB-6XXK	1	44.39	Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH13	44.39	133	B	F-V30XQB-6XXK	2	44.39	Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH13	44.39	133	B	F-V30XQB-6XXK	3	44.46	Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE.	As received	ISRM 2007
BH13	48.1	142	B	F-R48XQB-VNL7	1	48.1	Medium strong light greenish grey medium to thickly bedded fine to coarse predominately medium SANDSTONE	As received	ISRM 2007
BH13	48.57	145	B	F-KB8XQB-S4P6	1	48.57	Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE.	As received	ISRM 2007
BH13	48.57	145	B	F-KB8XQB-S4P6	2	48.57	Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE.	As received	ISRM 2007
BH13	48.93	147	B	F-FH8XQB-NC9S	1	48.93	Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH26	39.6	90	B	F-RMZAPB-IZND	1	39.6	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	39.6	90	B	F-RMZAPB-IZND	2	39.6	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	39.6	90	B	F-RMZAPB-IZND	3	39.68	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	40.4	93	B	F-BQZAPB-13B6	1	40.4	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	40.4	93	B	F-BQZAPB-13B6	2	40.4	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	40.76	96	B	F-NM1BPB-67HN	1	40.76	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	41.07	98	B	F-LO1BPB-EJ5B	1	41.07	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	41.07	98	B	F-LO1BPB-EJ5B	2	41.07	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	41.07	98	B	F-LO1BPB-EJ5B	3	41.12	Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE.	As received	ISRM 2007
BH26	42.34	102	B	F-PJ5BPB-E9VI	1	42.34	Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE	As received	ISRM 2007
BH26	42.73	104	B	F-9V5BPB-RLDA	1	42.73	Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE	As received	ISRM 2007
BH26	42.73	104	B	F-9V5BPB-RLDA	2	42.73	Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE	As received	ISRM 2007
BH26	43.72	107	B	F-6CBBPB-8MY4	1	43.72	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	43.72	107	B	F-6CBBPB-8MY4	2	43.72	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	43.72	107	B	F-6CBBPB-8MY4	3	43.79	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	44.17	109	B	F-8EBBPB-KMWA	1	44.17	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	44.17	109	B	F-8EBBPB-KMWA	2	44.17	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	44.17	109	B	F-8EBBPB-KMWA	3	44.25	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	44.6	111	B	F-40EBPB-0285	1	44.6	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	44.6	111	B	F-40EBPB-0285	2	44.6	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	45.7	116	B	F-M6EBPB-023J	1	45.7	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	45.7	116	B	F-M6EBPB-023J	2	45.7	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	45.7	116	B	F-M6EBPB-023J	3	45.75	Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE	As received	ISRM 2007
BH26	47.12	120	B	F-YRGBPB-SSG8	1	47.12	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	As received	ISRM 2007
BH26	47.12	120	B	F-YRGBPB-SSG8	2	47.12	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	As received	ISRM 2007
BH26	47.12	120	B	F-YRGBPB-SSG8	3	47.2	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	As received	ISRM 2007
BH26	47.91	121	B	F-U6LBPB-UI9K	1	47.91	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	As received	ISRM 2007
BH26	47.91	121	B	F-U6LBPB-UI9K	2	47.91	Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE.	As received	ISRM 2007
BH26	48.52	123	B	F-LCLBPB-FMDU	1	48.52	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	48.6	124	B	F-HDLBPB-4W7Y	1	48.6	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	48.6	124	B	F-HDLBPB-4W7Y	2	48.6	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	49.12	126	B	F-8LQBPB-2SDG	1	49.12	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	49.12	126	B	F-8LQBPB-2SDG	2	49.12	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	49.12	126	B	F-8LQBPB-2SDG	3	49.19	Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE.	As received	ISRM 2007
BH26	50.3	130	B	F-20TBPB-TJ7Z	1	50.39	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007
BH26	50.3	130	B	F-20TBPB-TJ7Z	2	50.3	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH26	50.3	130	B	F-20TBPB-TJ7Z	3	50.37	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007
BH26	51.04	132	B	F-72TBPB-0UYL	1	51.04	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007
BH26	51.04	132	B	F-72TBPB-0UYL	2	51.04	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007
BH26	51.04	132	B	F-72TBPB-0UYL	3	51.11	Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE.	As received	ISRM 2007
BH26	51.8	134	B	F-FAVBPB-LQ4E	1	51.8	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	51.8	134	B	F-FAVBPB-LQ4E	2	51.8	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	51.8	134	B	F-FAVBPB-LQ4E	3	51.87	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	52.58	136	B	F-TXUBPB-4SHV	1	52.58	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	52.58	136	B	F-TXUBPB-4SHV	2	52.58	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	53.25	139	B	F-HIVBPB-H61H	1	53.25	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	53.52	141	B	F-62YBPB-H65M	1	53.52	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	53.66	142	B	F-PQYBPB-8NS6	1	53.66	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	54.22	146	B	F-EFYBPB-5VAQ	1	54.22	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	54.22	146	B	F-EFYBPB-5VAQ	2	54.22	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	54.22	146	B	F-EFYBPB-5VAQ	3	54.28	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	54.71	148	B	F-CHYBPB-62KF	1	54.71	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	54.71	148	B	F-CHYBPB-62KF	2	54.71	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	56.17	153	B	F-ZZ0CPB-G0CD	1	56.17	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	56.17	153	B	F-ZZ0CPB-G0CD	2	56.17	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007
BH26	56.17	153	B	F-ZZ0CPB-G0CD	3	56.24	Medium strong thinly laminated dark reddish grey SILTSTONE.	As received	ISRM 2007

Exploratory Position Ref	Sample Top Depth [m]	Sample Ref	Sample Type	Sample ID	Specimen Ref	Specimen Top Depth [m]	Specimen Description	Specimen Preparation	Method
BH28	56.7	235	B	F-IN3VPB-FML4	1	56.72	Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	59.12	245	B	F-LR8VPB-FJ8U	1	59.12	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	59.12	245	B	F-LR8VPB-FJ8U	2	59.12	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	59.52	248	B	F-BX8VPB-H5PX	1	59.52	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	59.52	248	B	F-BX8VPB-H5PX	2	59.52	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	59.52	248	B	F-BX8VPB-H5PX	3	59.59	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	60.5	251	B	F-QTBVPB-UHZN	1	60.5	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	60.5	251	B	F-QTBVPB-UHZN	2	60.56	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	60.5	251	B	F-QTBVPB-UHZN	3	60.5	Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	61.89	256	B	F-XWCVPB-Q0TU	1	61.9	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	61.89	256	B	F-XWCVPB-Q0TU	2	61.89	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	62	259	B	F-AGFVPB-R00S	1	62	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	62	259	B	F-AGFVPB-R00S	2	62.07	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	62	259	B	F-AGFVPB-R00S	3	62	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	62	259	B	F-AGFVPB-R00S	4	62.11	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	64.29	266	B	F-FPIVPB-VTTQ	1	64.29	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	64.29	266	B	F-FPIVPB-VTTQ	2	64.29	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007
BH28	64.29	266	B	F-FPIVPB-VTTQ	3	64.35	Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE.	As received	ISRM 2007

Exploratory Position Reference	Depth [m BSL]	Sanple Ref	Sample Type	Sample ID	Specimen Description	Specimen Preparation	Bulk Density [$Mg.m^{-3}$]	Dry Density [$Mg.m^{-3}$]	Moisture Content [%]	Thermal Conductivity [$W.m^{-1}.K^{-1}$]	Resistivity Temperature [°C]	Probe Details	Method	Laboratory
BH08	0	1	B	F-7RM7RB-36HK	Yellowish brown slightly gravelly SAND.	Remoulded - Tamping	2.66	2.16	23.6	2.24	16.2	TR-1	Manufacturer's Guidelines	Offshore
BH08	1	3	B	F-1AO7RB-IA4Q	Dark yellowish brown gravelly SAND	Remoulded - Tamping	2.59	2.2	18.1	2.42	16.7	TR-1	Manufacturer's Guidelines	Offshore
BH08	2	5	B	F-1EP7RB-4EUM	Dark yellowish brown slightly gravelly SAND	Remoulded - Tamping	2.05	1.59	28.9	2.79	17.4	TR-1	Manufacturer's Guidelines	Offshore
BH20	0	1	B	F-8IQZQB-AHDT	Yellowish brown gravelly coarse SAND.	Remoulded - Tamping	2.13	1.7	25.2	2.09	17.1	TR-1	Manufacturer's Guidelines	Offshore
BH20	1	3	B	F-8CTZQB-8YRH	Dark greyish brown coarse SAND and GRAVEL.	Remoulded - Tamping	2.03	1.88	7.9	1.33	16.4	TR-1	Manufacturer's Guidelines	Offshore

6. Geotechnical Descriptions and Profiles

Title	Plate No.
List of Symbols and Classification Systems Used	6.1
Borehole Logs	6.2 to 6.412

Very coarse and coarse soils

 Boulders

 Cobbles

 Gravel

 Sand

Fine soils

 Silt

 Clay

Organic and anthropogenic soils

 Topsoil

 Peat

 Made Ground

Note: Composite soil types may be signified by combined symbols.

Rock Types

Sedimentary

 Sandstone

 Chalk

 Coal

 Siltstone

 Limestone

 Mudstone/Claystone/ Shale

 Conglomerate

 Breccia

Metamorphic

 Coarse-grained

 Medium-grained

 Fine-grained

Igneous

 Coarse-grained

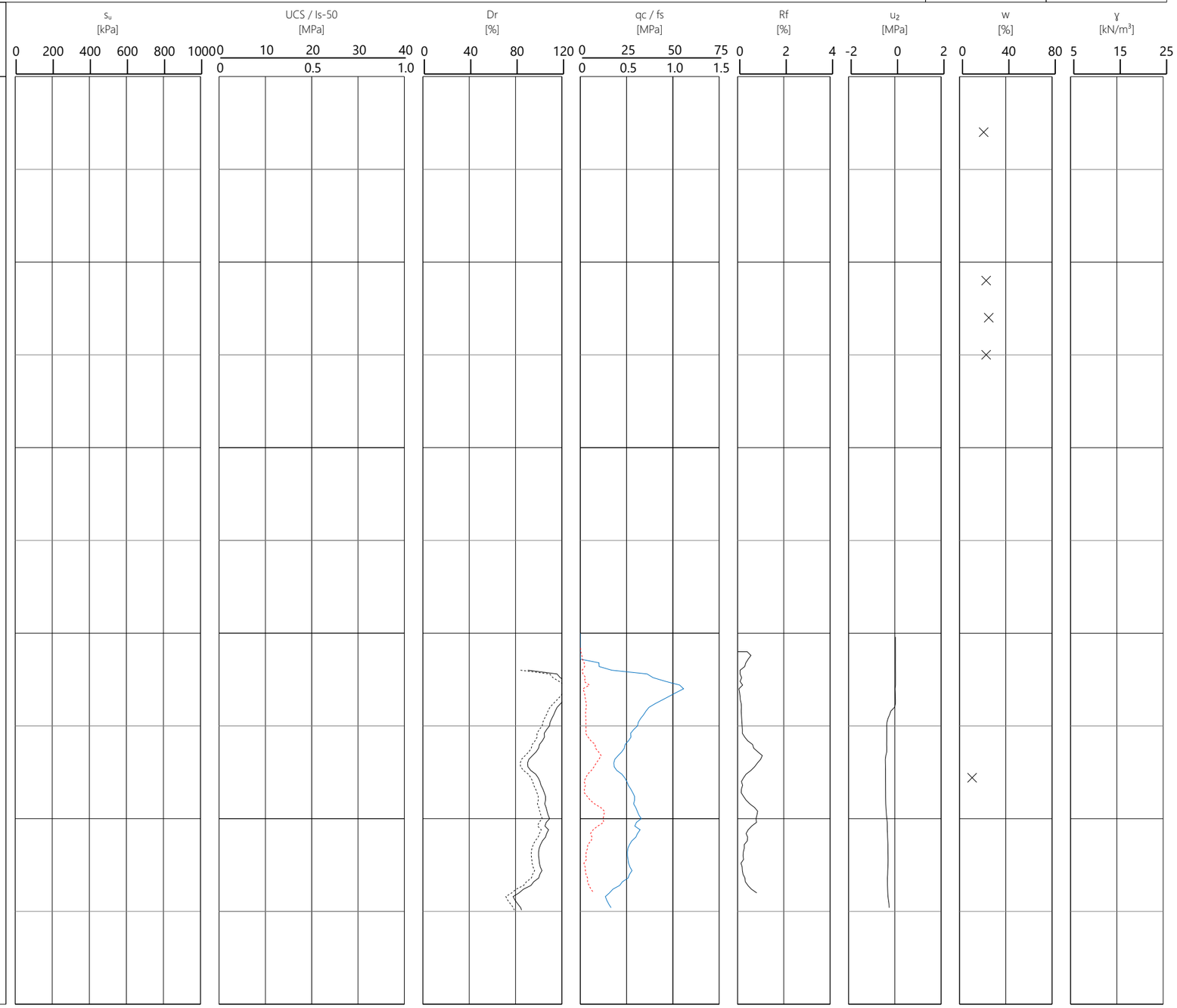
 Medium-grained

 Fine-grained

Key to Borehole Logs

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 1 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-25.0	0.00 m to 0.15 m - Dark brown slightly gravelly slightly silty SAND with frequent shell fragments (<6mm). Sand is fine to coarse. Gravel is subrounded and rounded coarse of sandstone. [HOLOCENE DEPOSITS]						
		0.15 m to 0.35 m - Dark greyish brown very silty SAND. Sand is fine and medium. [HOLOCENE DEPOSITS]						
1.0		0.35 m to 1.00 m - NO RECOVERY						
	-26.0	1.00 m to 1.70 m - Very soft dark grey sandy SILT with rare gravel. Sand is fine. Gravel is angular and subangular coarse of sandstone. [HOLOCENE DEPOSITS]						
2.0		1.70 m to 2.54 m - Recovered as dark grey slightly sandy GRAVEL. Sand is coarse. Gravel is angular to rounded fine to coarse of quartz, quartzite, sandstone and basalt. [HOLOCENE DEPOSITS] 1.70m to 2.00m; no recovery. 2.10m to 2.50m; no recovery.						
	-27.0	2.54 m to 3.00 m - NO RECOVERY						
3.0		3.00 m to 4.50 m - Very dense grey slightly gravelly slightly silty SAND with occasional shell fragments (<6mm). Very calcareous. Sand is fine to coarse. Gravel is subangular and subrounded fine of quartz, sandstone and limestone. [HOLOCENE DEPOSITS]						
4.0	-28.0							
	-29.0	4.50 m to 5.00 m - NO RECOVERY 4.50m to 4.55m; firm grey slightly sandy SILT. Sand is fine to coarse.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

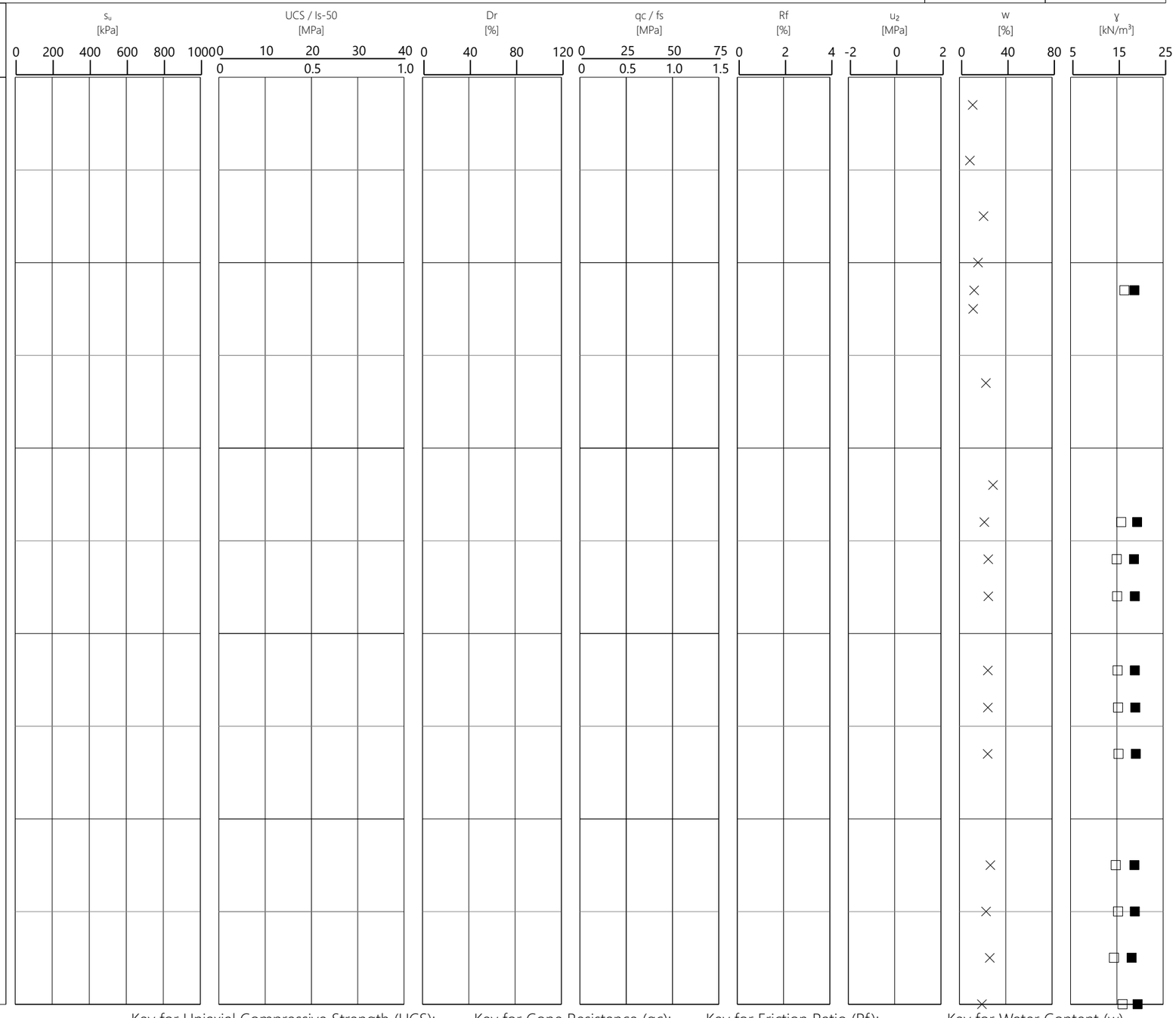
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-30.0	5.00 m to 7.00 m - Brown and greyish brown sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [HOLOCENE DEPOSITS]						
		5.15m to 5.23m; thin bed of firm brown clay (<80mm).						
6.0	-31.0	6.30m to 6.50m; no recovery.						
		6.70m to 7.00m; no recovery.						
7.0	-32.0	7.00 m to 11.00 m - Brown slightly silty SAND with rare gravel and with rare lenses of silt (<10mm x 20mm). Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse gravel of quartz and basalt. [HOLOCENE DEPOSITS]						
		7.80m to 8.00m; no recovery.						
8.0	-33.0	8.65m to 9.00m; no recovery.						
9.0	-34.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
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- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

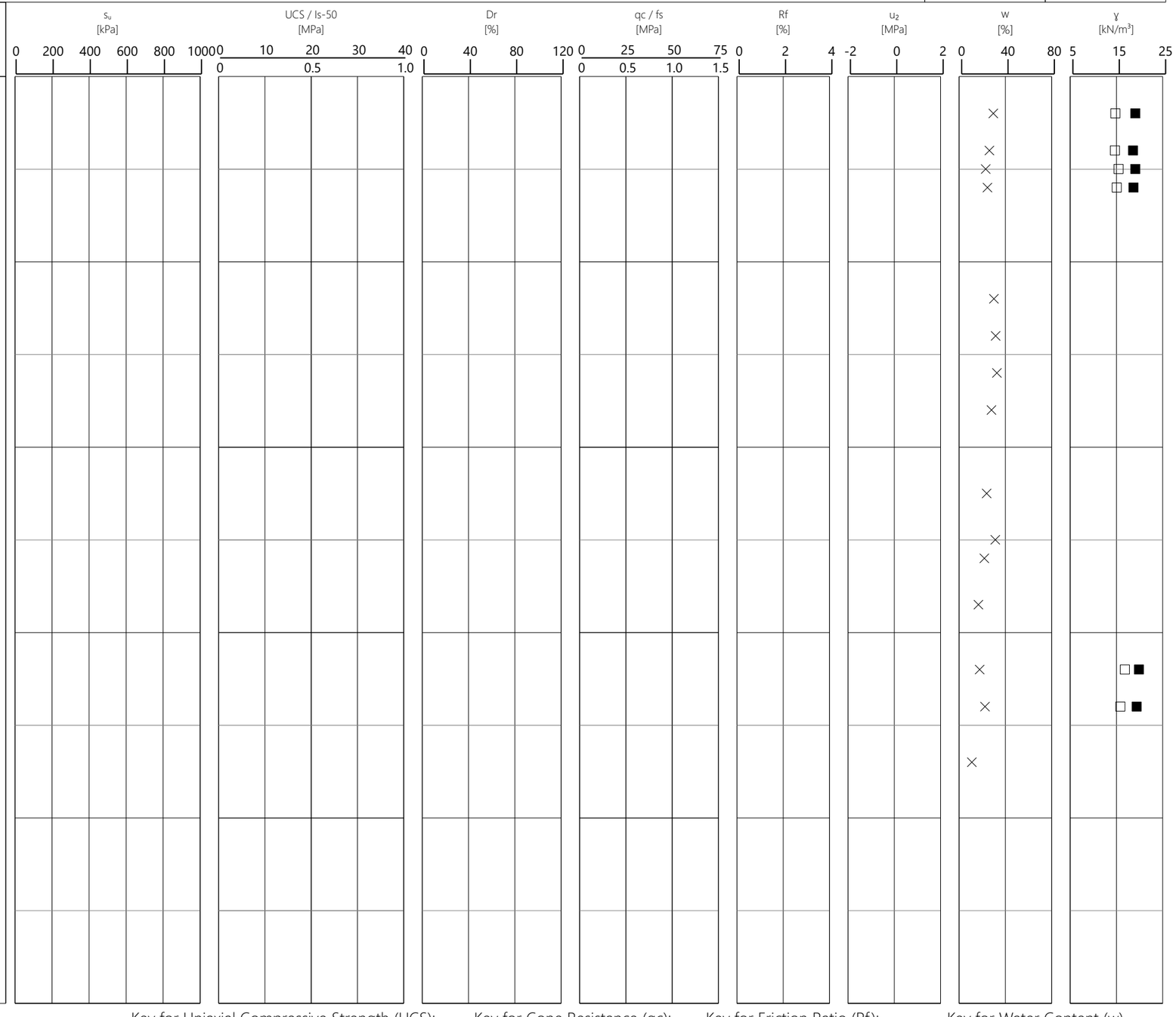
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-35.0	7.00 m to 11.00 m - Brown slightly silty SAND with rare gravel and with rare lenses of silt (<10mm x 20mm). Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse gravel of quartz and basalt. [HOLOCENE DEPOSITS] 10.80m to 11.00m; no recovery.						
11.0	-36.0	11.00 m to 13.50 m - Brown very silty SAND. Sand is fine and medium becoming fine to coarse. [HOLOCENE DEPOSITS] 11.00m to 12.60m; sand is predominantly fine. 11.80m to 12.00m; no recovery.						
12.0	-37.0	12.50m to 12.60m; thin bed of soft brown sandy silt. Sand is fine. From 12.60m; sand is fine to coarse predominantly fine and medium. 12.85m to 12.90m; no recovery. 12.90m to 13.00m; openhole drilling no recovery. From 13.00m; becomes gravelly. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. 13.40m to 13.50m; no recovery.						
13.0	-38.0							
14.0	-39.0	13.50 m to 15.50 m - Dark greenish grey slightly sandy GRAVEL. Sand is medium and coarse. Gravel is angular to subrounded predominantly subangular fine to coarse predominantly medium of mixed lithologies including basalt, quartz, sandstone. [HOLOCENE DEPOSITS] 13.85m to 13.90m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-40.0	13.50 m to 15.50 m - Dark greenish grey slightly sandy GRAVEL. Sand is medium and coarse. Gravel is angular to subrounded predominantly subangular fine to coarse predominantly medium of mixed lithologies including basalt, quartz, sandstone. [HOLOCENE DEPOSITS]						
		14.95m to 15.50m; no recovery.						
16.0	-41.0	15.50 m to 16.50 m - Very dark grey GRAVEL. Locally slightly silty and slightly sandy. Gravel is angular to subrounded medium and coarse of mixed lithologies including basalt, quartz, basalt. [HOLOCENE DEPOSITS]						
		16.00m to 16.12m; slightly silty slightly sandy.						
		16.35m to 16.50m; no recovery.						
		16.50 m to 20.50 m - Brown slightly silty SAND. Slightly micaceous. Sand is fine. [HOLOCENE DEPOSITS]						
17.0	-42.0							
18.0	-43.0	18.45m to 18.50m; assumed zone of core loss.						
19.0	-44.0	18.90m to 19.00m; no recovery.						
		19.50m to 20.00m; no recovery. Driller noted change of material and firm dark greyish brown silty clay recovered on NCD tool following open hole drilling.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend
	-45.0	16.50 m to 20.50 m - Brown slightly silty SAND. Slightly micaceous. Sand is fine. [HOLOCENE DEPOSITS]	
		20.45m to 20.50m; no recovery.	
		20.50 m to 26.80 m - Stiff brown slightly sandy CLAY locally with frequent lenses (<40mm x 7mm) and rare pockets (<40mm x 20mm) of sandy silt and fine sand. Sand is fine. Becoming slightly gravelly with depth. Gravel is subangular and subrounded fine to coarse of basalt, quartz and sandstone. [CARDIGAN BAY FORMATION]	
21.0	-46.0	20.50m to 22.18m; frequent lenses of sandy silt (<40mm x 7mm).	
22.0	-47.0	22.18m to 22.30m; thin bed of light brown slightly gravelly slightly silty sand. Sand is fine to coarse predominantly medium. Gravel is subangular fine to coarse of basalt, quartz and sandstone.	
23.0	-48.0	23.50m to 23.70m; rare pockets of fine and medium sand (<50mm x 30mm). From 23.70m ; slightly gravelly.	
24.0	-49.0		

Columns: TCR [%] | SCR [%] | RQD [%] | FI [-] | GSI [-]

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- —— CPT Nkt=15
- - - - CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- —— Cone Resistance

Key for Sleeve Friction (fs):
- - - - Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- —— Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-50.0	20.50 m to 26.80 m - Stiff brown slightly sandy CLAY locally with frequent lenses (<40mm x 7mm) and rare pockets (<40mm x 20mm) of sandy silt and fine sand. Sand is fine. Becoming slightly gravelly with depth. Gravel is subangular and subrounded fine to coarse of basalt, quartz and sandstone. [CARDIGAN BAY FORMATION]						
26.0		25.60m to 25.70m; thin bed of brown slightly sandy silt. Sand is fine. Recovered as very soft.						
	-51.0	26.30m to 26.40m; thin bed of brown sandy silt. Sand is fine. Recovered as very soft.						
27.0		26.80 m to 28.00 m - Stiff brown sandy SILT. Sand is fine and medium predominantly fine. [CARDIGAN BAY FORMATION]						
	-52.0	27.50m to 28.00m; with rare pockets of firm brown clay (<50mm x 30mm) and occasional pockets of fine sand (<40mm x 20mm).						
28.0		28.00 m to 29.40 m - Stiff and very stiff brown CLAY with frequent pockets of silt and fine sand (<50mm x 30mm). Sand is fine and medium predominantly fine. [CARDIGAN BAY FORMATION]						
	-53.0	28.50m to 29.00m; very stiff slightly gravelly. Gravel is subangular and subrounded fine to coarse of basalt, quartz and sandstone.						
29.0		29.00m to 29.20m; thin bed of brown sandy silt. Recovered as very soft. Sand is fine and medium predominantly fine.						
	-54.0	29.20m to 29.40m; thin bed of brown to greyish brown slightly silty sand. Sand is fine and medium.						
		29.40 m to 33.40 m - Very stiff brown slightly gravelly slightly sandy CLAY. Sand is fine and medium. Gravel is subangular and subrounded						

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

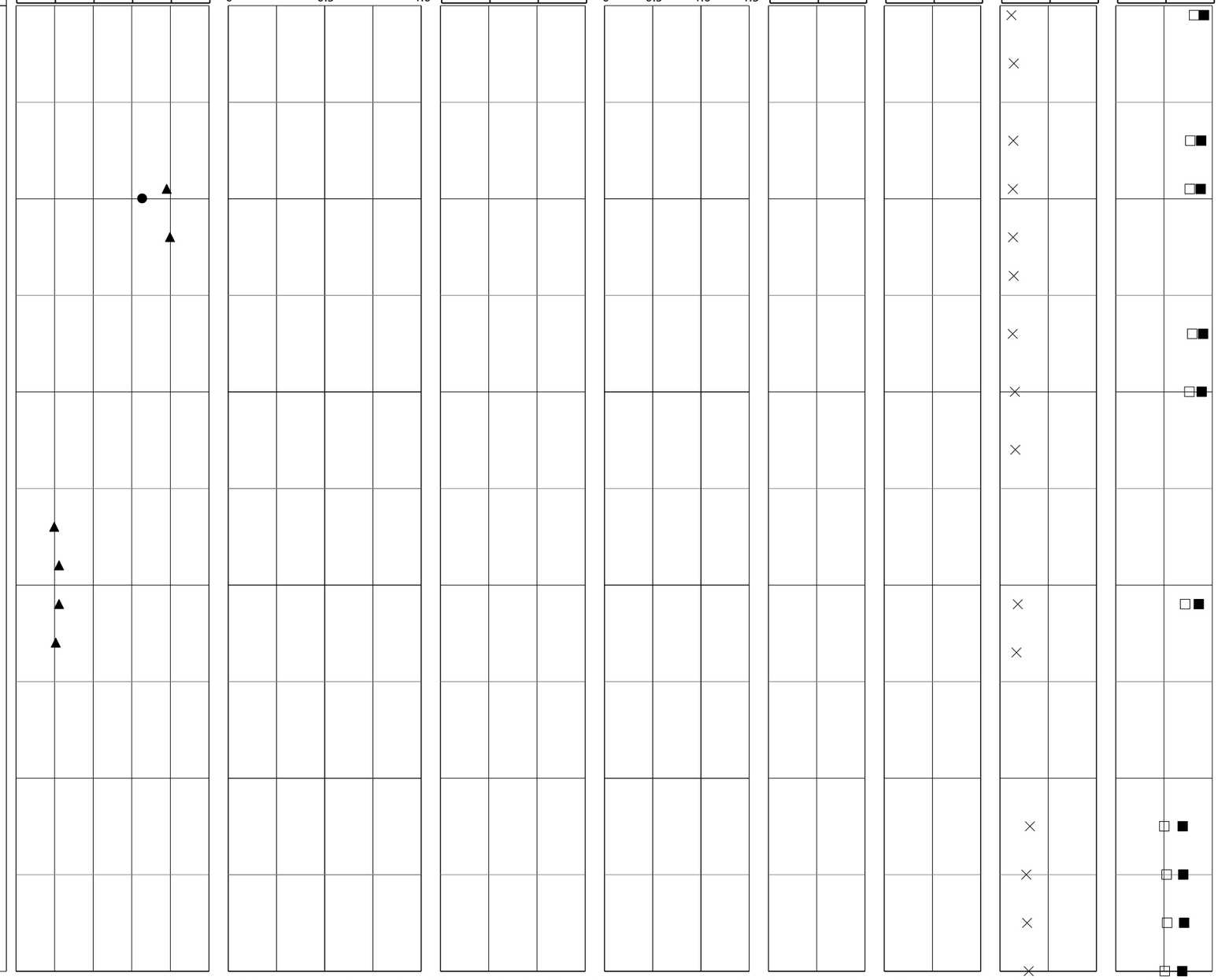
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
31.0	-55.0	29.40 m to 33.40 m - Very stiff brown slightly gravelly slightly sandy CLAY. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone, basalt and possible slate. [CARDIGAN BAY FORMATION]		100				
32.0	-56.0			100				
33.0	-57.0			100				
34.0	-58.0			100				
	-59.0	33.40 m to 34.00 m - ASSUMED ZONE OF CORE LOSS.		40				
		34.00 m to 37.45 m - Light brownish grey SAND. Slightly calcareous. Sand is fine and medium. [CARDIGAN BAY FORMATION] 34.40m to 34.50m; assumed zone of core loss. 34.40m to 34.90m; slightly silty.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 8 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
36.0	-60.0	34.00 m to 37.45 m - Light brownish grey SAND. Slightly calcareous. Sand is fine and medium. [CARDIGAN BAY FORMATION]						
37.0	-61.0							
	-62.0	37.13m to 37.25m; thin bed of stiff dark brownish grey slightly sandy gravelly clay. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of mixed lithologies including basalt, quartz and sandstone.						
38.0	-63.0	37.45 m to 39.00 m - Stiff brownish grey CLAY. [CARDIGAN BAY FORMATION]						
		38.50m to 38.80m; rare lenses (<20mm x 3mm) of fine and medium sand.						
		38.80m to 39.00m; no recovery openhole drilling.						
39.0	-64.0	39.00 m to 41.50 m - Very stiff brown slightly sandy CLAY with rare gravel. Sand is fine and medium predominantly fine. Gravel is subrounded fine to coarse of basalt and quartz. [CARDIGAN BAY FORMATION]						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

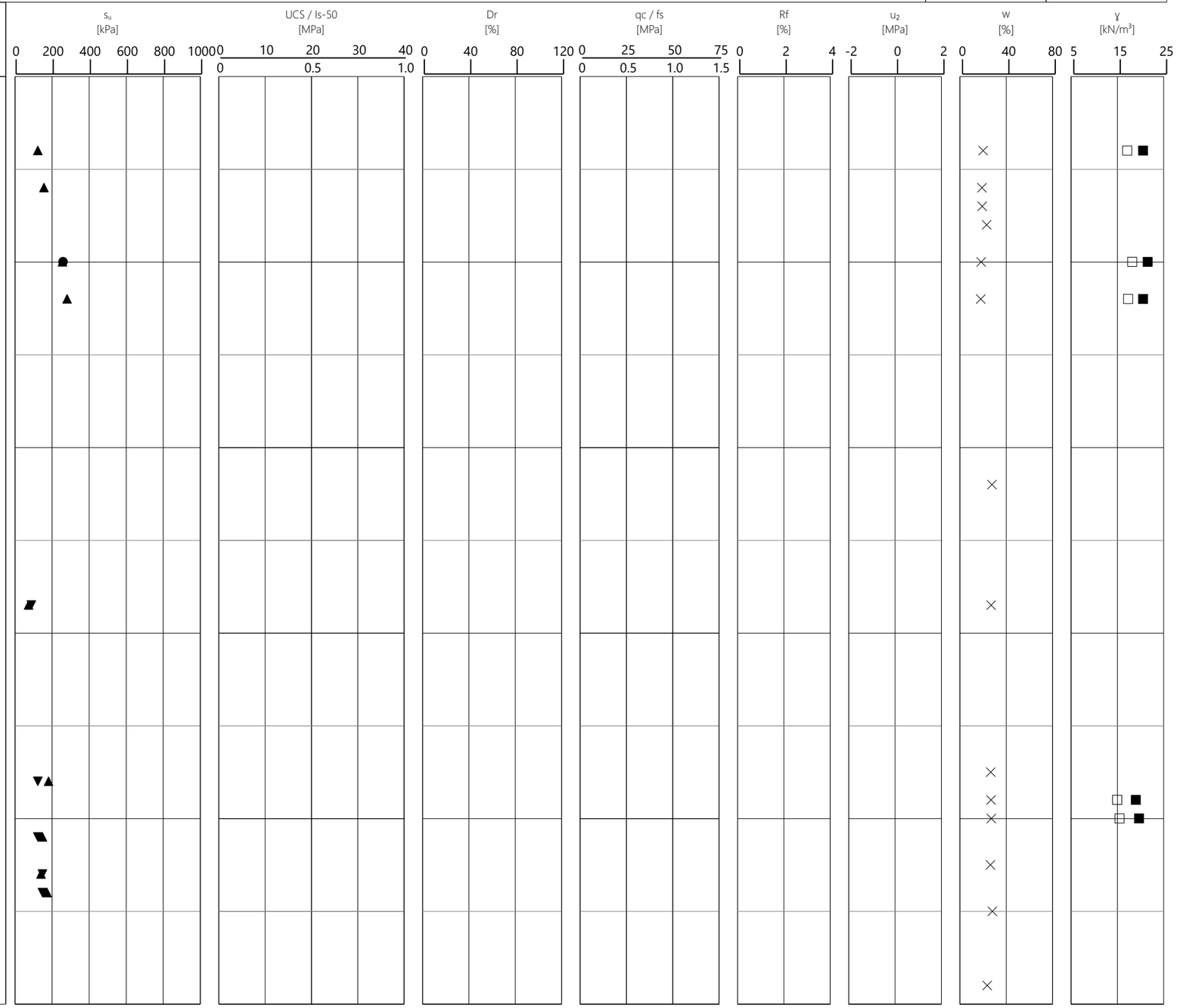
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	75.00	**BH01**
Fugro Reference	F186642			Seabed Level [m LAT]	-24.80	
Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum	UTM Zone 30	Date	06 06 2022 to 10 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 9 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-65.0	39.00 m to 41.50 m - Very stiff brown slightly sandy CLAY with rare gravel. Sand is fine and medium predominantly fine. Gravel is subrounded fine to coarse of basalt and quartz. [CARDIGAN BAY FORMATION]						
		40.10m to 40.20m; no recovery.						
		40.70m to 41.50m; with rare pockets (<50mm x 40mm) of soft sandt silt.						
41.0	-66.0	41.40m to 41.50m; no recovery.						
		41.50 m to 42.75 m - Brown slightly silty SAND with occasional pockets (<40mm x 20mm x 20mm) of clay and rare gravel. Sand is fine and medium predominantly fine. Gravel is subangular medium of basalt. [CARDIGAN BAY FORMATION]						
42.0	-67.0	42.68m to 42.72m; very thin bed of clay.						
		42.75 m to 44.50 m - Stiff very dark grey thinly laminated silty CLAY with frequent silt dusting betwen individual laminae. [CARDIGAN BAY FORMATION]						
43.0	-68.0	43.69m to 43.71m; rare subrounded medium and coarse gravel of fine grained sandstone.						
44.0	-69.0	44.50 m to 45.20 m - Greyish brown SAND. Sand is fine and medium. [CARDIGAN BAY FORMATION]		100				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

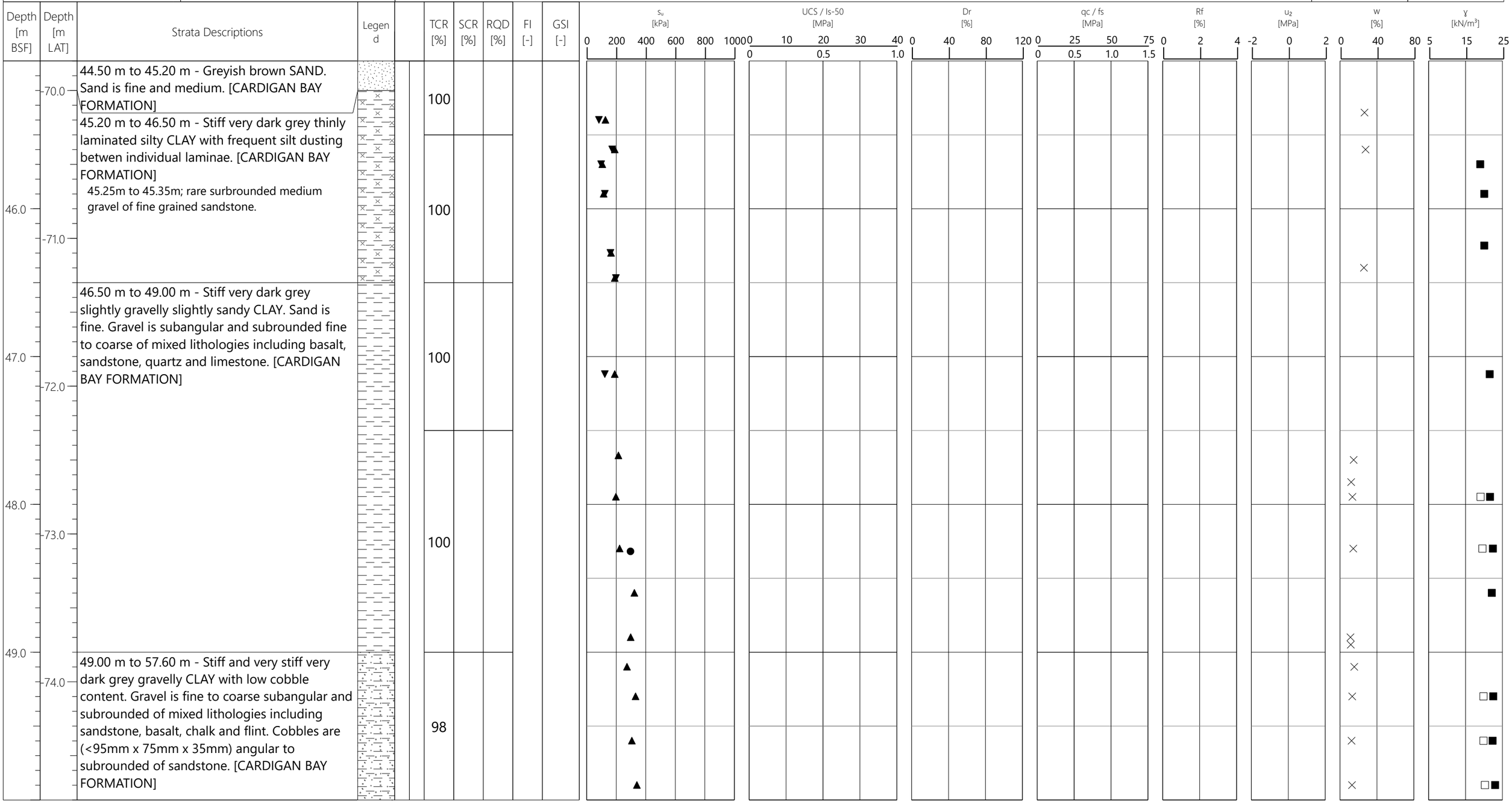
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
46.0	-70.0	44.50 m to 45.20 m - Greyish brown SAND. Sand is fine and medium. [CARDIGAN BAY FORMATION]		100				
	-71.0	45.20 m to 46.50 m - Stiff very dark grey thinly laminated silty CLAY with frequent silt dusting betwen individual laminae. [CARDIGAN BAY FORMATION] 45.25m to 45.35m; rare surbrounded medium gravel of fine grained sandstone.		100				
47.0	-72.0	46.50 m to 49.00 m - Stiff very dark grey slightly gravelly slightly sandy CLAY. Sand is fine. Gravel is subangular and subrounded fine to coarse of mixed lithologies including basalt, sandstone, quartz and limestone. [CARDIGAN BAY FORMATION]		100				
48.0	-73.0			100				
49.0	-74.0	49.00 m to 57.60 m - Stiff and very stiff very dark grey gravelly CLAY with low cobble content. Gravel is fine to coarse subangular and subrounded of mixed lithologies including sandstone, basalt, chalk and flint. Cobbles are (<95mm x 75mm x 35mm) angular to subrounded of sandstone. [CARDIGAN BAY FORMATION]		98				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 11 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
51.0	-75.0	49.00 m to 57.60 m - Stiff and very stiff very dark grey gravelly CLAY with low cobble content. Gravel is fine to coarse subangular and subrounded of mixed lithologies including sandstone, basalt, chalk and flint. Cobbles are (<95mm x 75mm x 35mm) angular to subrounded of sandstone. [CARDIGAN BAY FORMATION]						
	-76.0			53				
52.0	-77.0							
				95				
53.0	-78.0	52.95m to 53.00m; assumed zone of core loss.						
				100				
54.0	-79.0							

Plots: s_u [kPa] (0 200 400 600 800 1000); UCS / Is-50 [MPa] (0 10 20 30 40; 0 0.5 1.0); Dr [%] (0 40 80 120); qc / fs [MPa] (0 25 50 75; 0 0.5 1.0 1.5); Rf [%] (0 2 4); u_2 [MPa] (-2 0 2); w [%] (0 40 80); γ [kN/m³] (5 15 25)

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 12 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
56.0	-80.0	49.00 m to 57.60 m - Stiff and very stiff very dark grey gravelly CLAY with low cobble content. Gravel is fine to coarse subangular and subrounded of mixed lithologies including sandstone, basalt, chalk and flint. Cobbles are (<95mm x 75mm x 35mm) angular to subrounded of sandstone. [CARDIGAN BAY FORMATION]		100				
57.0	-81.0			93				
	-82.0	57.40m to 57.50m; assumed zone of core loss.						
58.0	-83.0	57.60 m to 67.85 m - Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY with rare gravel. Sand is fine and medium. Gravel is subangular and subrounded of quartz, sandstone, chalk and basalt. Laminations are very closely to medium spaced with silt dustings. [CARDIGAN BAY FORMATION]		100				
59.0	-84.0			100				

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

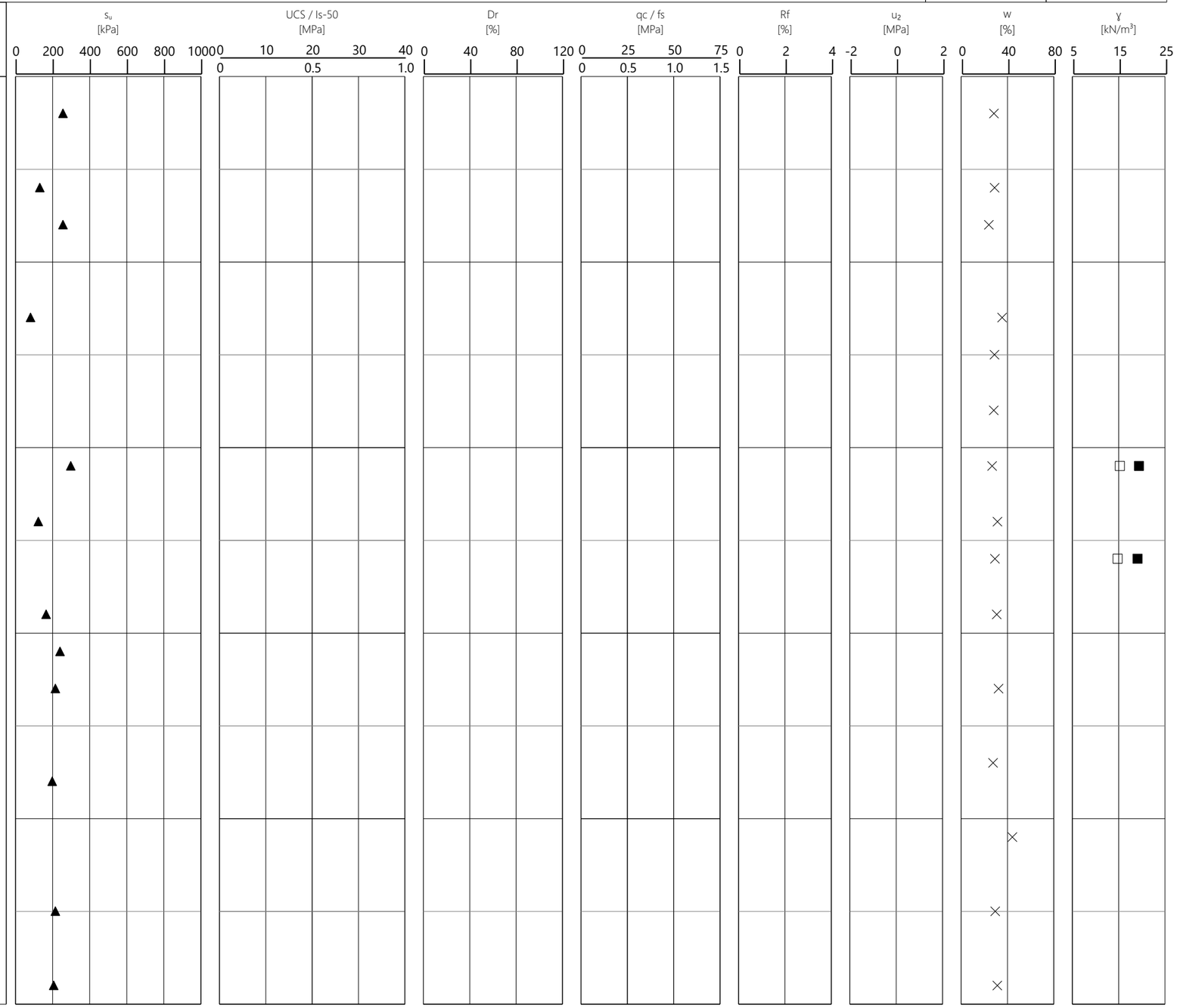
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
61.0	-85.0	57.60 m to 67.85 m - Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY with rare gravel. Sand is fine and medium. Gravel is subangular and subrounded of quartz, sandstone, chalk and basalt. Laminations are very closely to medium spaced with silt dustings. [CARDIGAN BAY FORMATION]		93				
	-86.0	60.90m to 61.00m; assumed zone of core loss						
62.0	-87.0			100				
63.0	-88.0	From 63.30m; with occasional thin laminations of black extremely weak lignite.		100				
64.0	-89.0			100				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

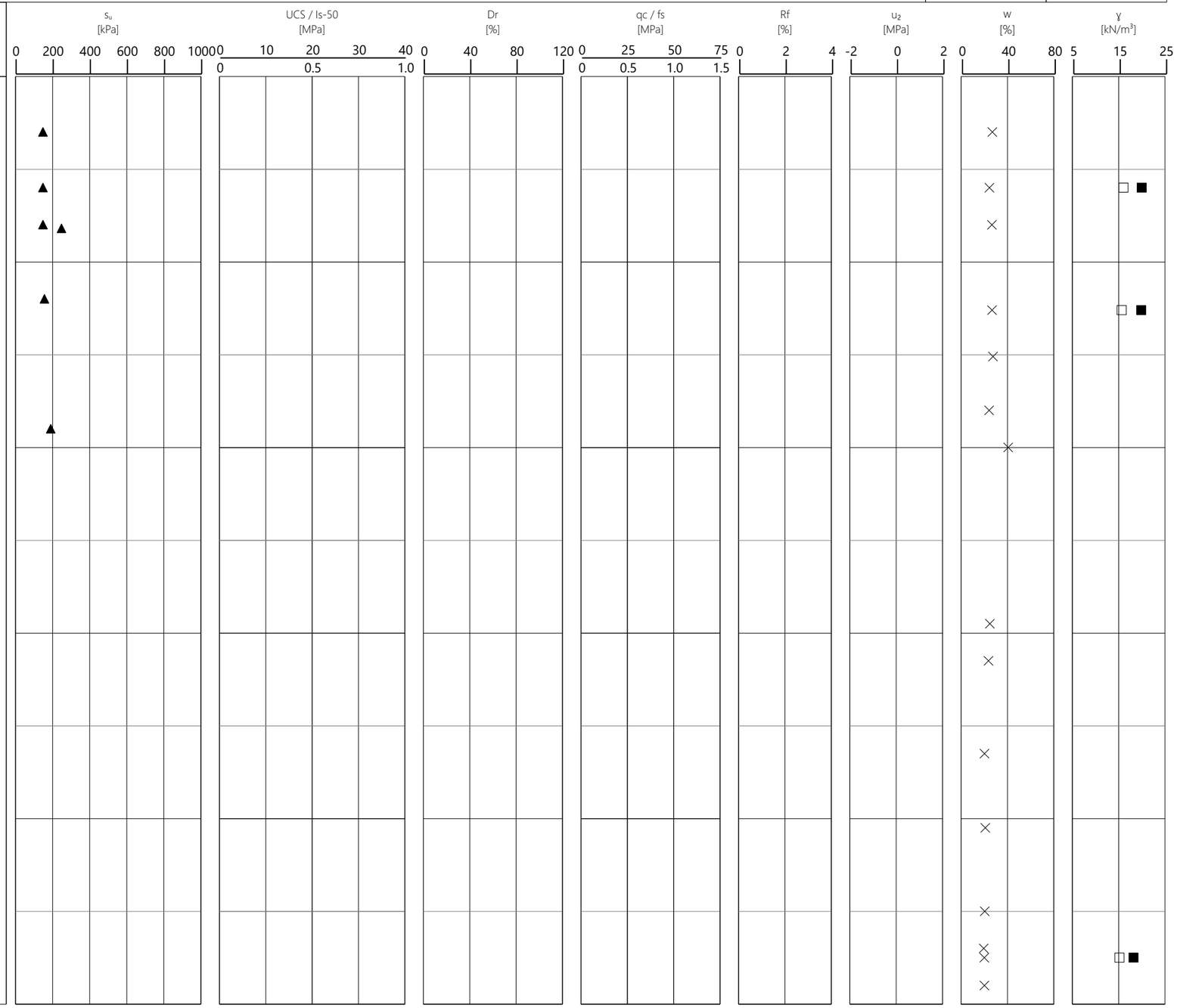
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
66.0	-90.0	57.60 m to 67.85 m - Very stiff locally stiff thinly and thickly laminated dark brown slightly sandy CLAY with rare gravel. Sand is fine and medium. Gravel is subangular and subrounded of quartz, sandstone, chalk and basalt. Laminations are very closely to medium spaced with silt dustings. [CARDIGAN BAY FORMATION]						
	-91.0			100				
67.0	-92.0	67.20m to 67.25m; 1 no angular to subangular cobble of basalt (<90mm x 65mm x 50mm). 67.54m to 67.85m; 1 no cored-through angular cobble or boulder of fractured greenish grey psammite (>100m diameter x 150mm length).						
68.0	-93.0	67.85 m to 69.70 m - Brown and dark brown gravelly very silty SAND with low cobble content. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. Cobbles are (<80mm x 70mm x 50mm) angular and subangular of greenish grey psammite and black dolerite. [CARDIGAN BAY FORMATION]		57				
69.0	-94.0			85				
		69.70 m to 70.20 m - Dark grey and grey very clayey SAND. Sand is fine to coarse						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear
- CPT Nkt=15
- CPT Nkt=20

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

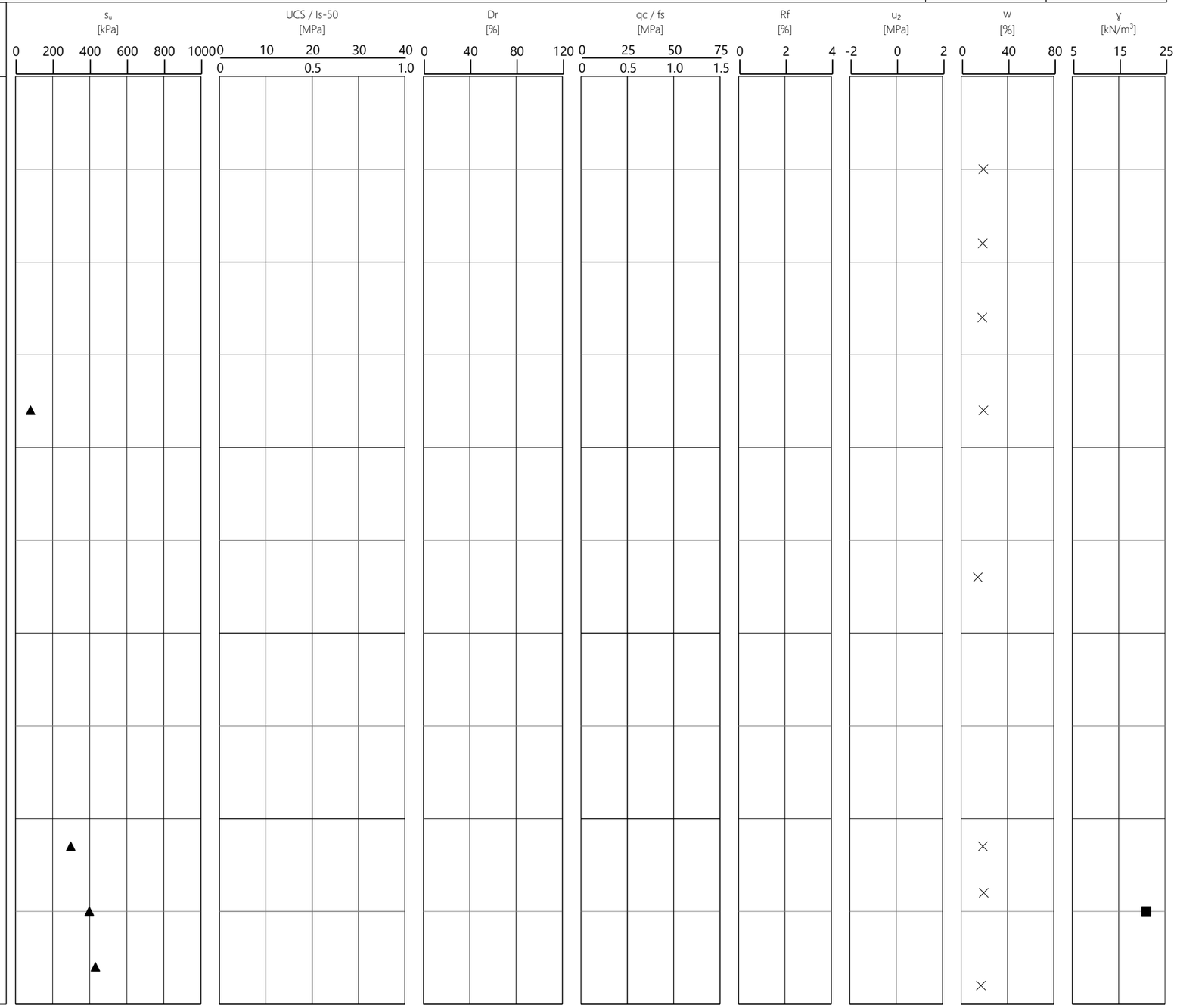
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	75.00	**BH01**
	Fugro Reference	F186642		Seabed Level [m LAT]	-24.80	
	Coordinates	303547.62 mE 5866922.76 mN	Coordinate Datum / UTM Zone 30	Date	06 06 2022 to 10 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 15

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-95.0	69.70 m to 70.20 m - Dark grey and grey very clayey SAND. Sand is fine to coarse predominantly fine and medium. [CARDIGAN BAY FORMATION]		100				
71.0	-96.0	70.20 m to 70.60 m - Recovered as brown silty gravelly SAND. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. Possible cavings/ cuttings. [CARDIGAN BAY FORMATION]		100				
72.0	-97.0	70.60 m to 74.00 m - Stiff dark grey and grey mottled slightly sandy CLAY possibly medium to thickly interbedded with grey and dark grey silty SAND. Slightly calcareous. Sand is fine and medium. [CARDIGAN BAY FORMATION] 72.07m to 72.15m; 1 no. cobble of basalt (<100mm x 100mm x 80mm). 72.15m 72.60m; recovered as brown slightly silty sand with frequent shell fragments (<20mm x 30mm). Sand is fine to coarse. Probable cavings/ cuttings. 72.70m to 73.00m; assumed zone of core loss.		80				
73.0	-98.0	73.00m to 73.37m; recovered as dark greyish brown silty slightly gravelly sand. Sand is fine to coarse predominantly medium. Gravel is subangular to rounded fine to coarse of basalt, psammite and sandstone. 73.37m to 73.45m; 1 no. cobble of dolerite (<100mm x 100mm x 80mm). 73.45m to 74.00m; assumed zone of core loss.		45				
74.0	-99.0	74.00 m to 75.00 m - Stiff dark greyish brown slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of psammite sandstone chalk and quartz. [CARDIGAN BAY FORMATION]		100				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
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- CPT Nkt=15
- CPT Nkt=20
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH01**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E303547.62 N5866922.76	Ground Elevation (m Datum)	-24.80	Sheet 1 of 1
	Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	52.50	RORC	06 06 2022	09 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB,CH,KH,JG	TC/FS	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 42.10m; Cantilever to LAT = 17.30m; LAT to Mud = 24.80m 3. All depths refer to depth below seabed level.
52.00	75.00	RC	09 06 2022	10 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	KH,JG	TC/FS	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
06 06 2022	07:00	0.00	0.00		
06 06 2022	19:35	5.50	5.50		
07 06 2022	07:35	14.50	14.00		
07 06 2022	19:00	23.50	22.50		
08 06 2022	07:41	36.00	35.50		
08 06 2022	19:15	39.00	39.00		
09 06 2022	06:50	42.00	41.50		
09 06 2022	19:00	52.00	50.50		
10 06 2022	07:00	75.00	75.00		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
3.00	178	2.50	178
75.00	146	75.00	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
29.50	30.50	PB	0		00:09
30.50	31.50	PB	0		00:08
31.50	32.50	PB	0		00:10
32.50	33.00	PB	0		00:05
33.00	34.00	PB	0		00:07
34.00	34.50	PB	0		00:05
34.50	35.00	PB	0		00:05
35.00	36.00	PB	0		00:05
36.00	36.50	PB	0		00:04
36.50	37.00	PB	0		00:07
37.00	37.50	PB	0		00:06
37.50	39.00	PB	0		00:07
39.00	39.70	PB	0		00:07
39.70	40.20	PB	0		00:09
40.20	40.70	PB	0		00:08
40.70	41.50	PB	0		00:09
41.50	42.00	PB	0		00:07
42.00	43.50	PB	0		00:07
43.50	44.50	PB	0		00:11
44.50	45.50	PB	0		00:10
45.50	46.50	PB	0		00:11
46.50	47.50	PB	0		00:09
47.50	49.00	PB	0		00:10
49.00	50.50	PB	0		00:12
50.50	52.00	PB	0		00:12
52.00	53.00	PB	0		00:07
53.00	54.50	PB	0		00:08
54.50	56.00	PB	0		00:07
56.00	57.50	PB	0		00:07
57.50	58.50	PB	0		00:06
58.50	59.50	PB	0		
59.50	61.00	PB	0		
61.00	62.50	PB	0		
62.50	64.00	PB	0		
64.00	65.50	PB	0		
65.50	67.00	PB	0		
67.00	68.50	PB	0		
68.50	69.50	PB	0		
69.50	70.50	PB	0		
70.50	71.50	PB	0		
71.50	73.00	PB	0		
73.00	74.00	PB	0		
74.00	75.00	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
29.50	30.50	102
30.50	31.50	102
31.50	32.50	102
32.50	33.00	102
33.00	34.00	102
43.50	44.50	102
44.50	45.50	102
45.50	46.50	102
46.50	47.50	102
47.50	49.00	102
49.00	50.50	102
50.50	52.00	102
52.00	53.00	102
53.00	54.50	102
54.50	56.00	102
56.00	57.50	102
57.50	58.50	102
58.50	59.50	102
59.50	61.00	102
61.00	62.50	102
62.50	64.00	102
64.00	65.50	102
65.50	67.00	102
67.00	68.50	102
68.50	69.50	102
69.50	70.50	102
70.50	71.50	102
71.50	73.00	102
73.00	74.00	102
74.00	75.00	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	75.00	Arisings	10 06 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	57.80	**BH08**
Fugro Reference	F186642			Seabed Level [m LAT]	-19.40	
Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum	UTM Zone 30	Date	11 07 2022 to 13 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 1 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
0								
	-20.0	0.00 m to 2.50 m - Yellowish brown slightly gravelly SAND with rare shell fragments (<15mm). Slightly calcareous. Sand is fine to coarse predominately medium. Gravel is subangular to rounded fine to coarse of quartz, basalt, chert and occasional sandstone. [HOLOCENE DEPOSITS]						
1.0		0.5m to 1.00m; sand is predominately fine.						
	-21.0	1.00m to 2.50m; dark yellowish brown						
2.0								
	-22.0	2.50 m to 13.30 m - Very dense greyish brown slightly gravelly slightly silty SAND. Sand is fine and medium. [WESTERN IRISH SEA FORMATION]						
3.0								
	-23.0							
4.0								
	-24.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

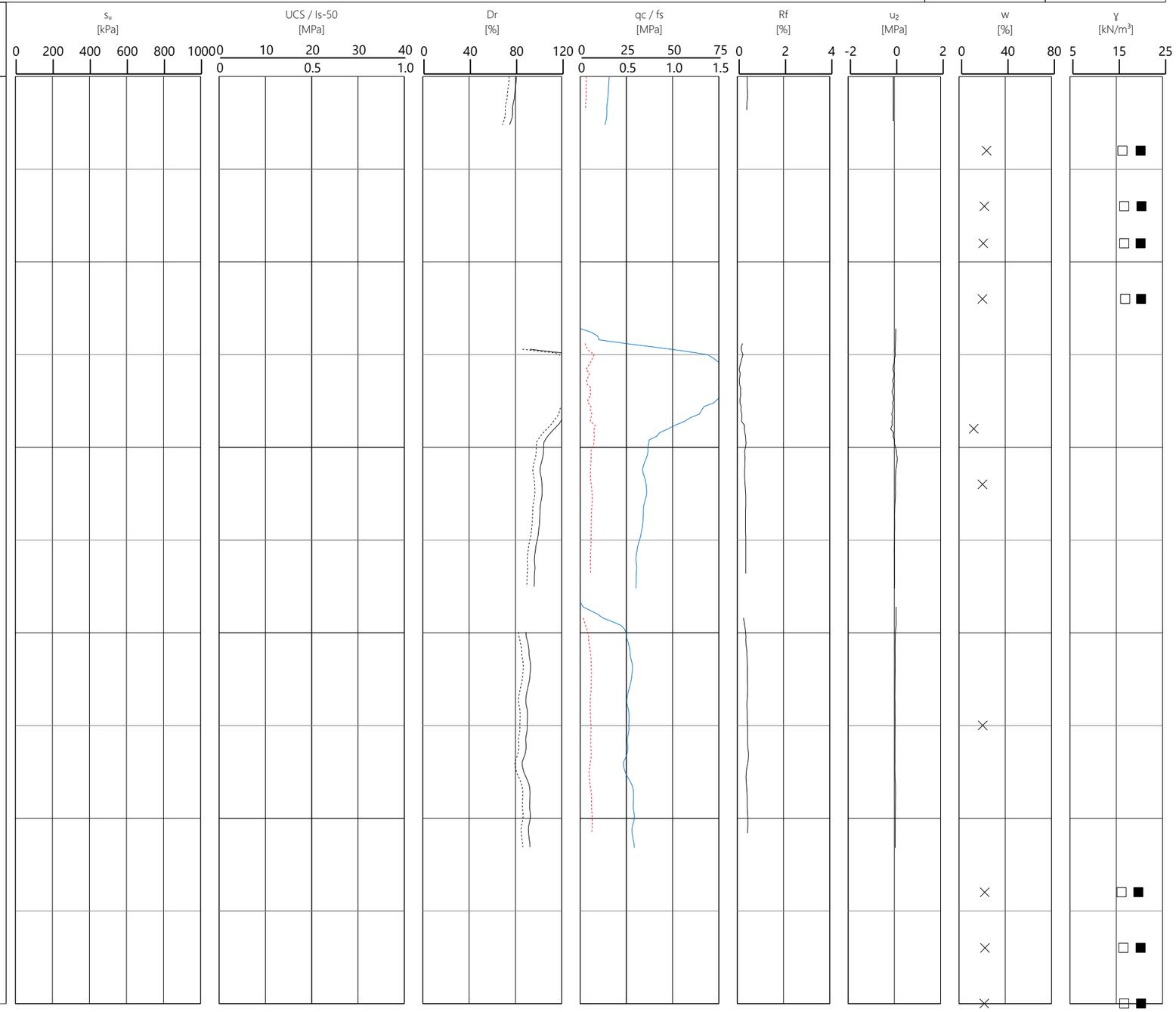
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
6.0	-25.0	2.50 m to 13.30 m - Very dense greyish brown slightly gravelly slightly silty SAND. Sand is fine and medium. [WESTERN IRISH SEA FORMATION]						
7.0	-26.0	6.80m to 7.00m; with a thin bed of dark greenish grey and brown gravel. Gravel is subangular to well rounded fine and medium of siltstone, quartz, chert and basalt						
8.0	-27.0							
9.0	-28.0							
	-29.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
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- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

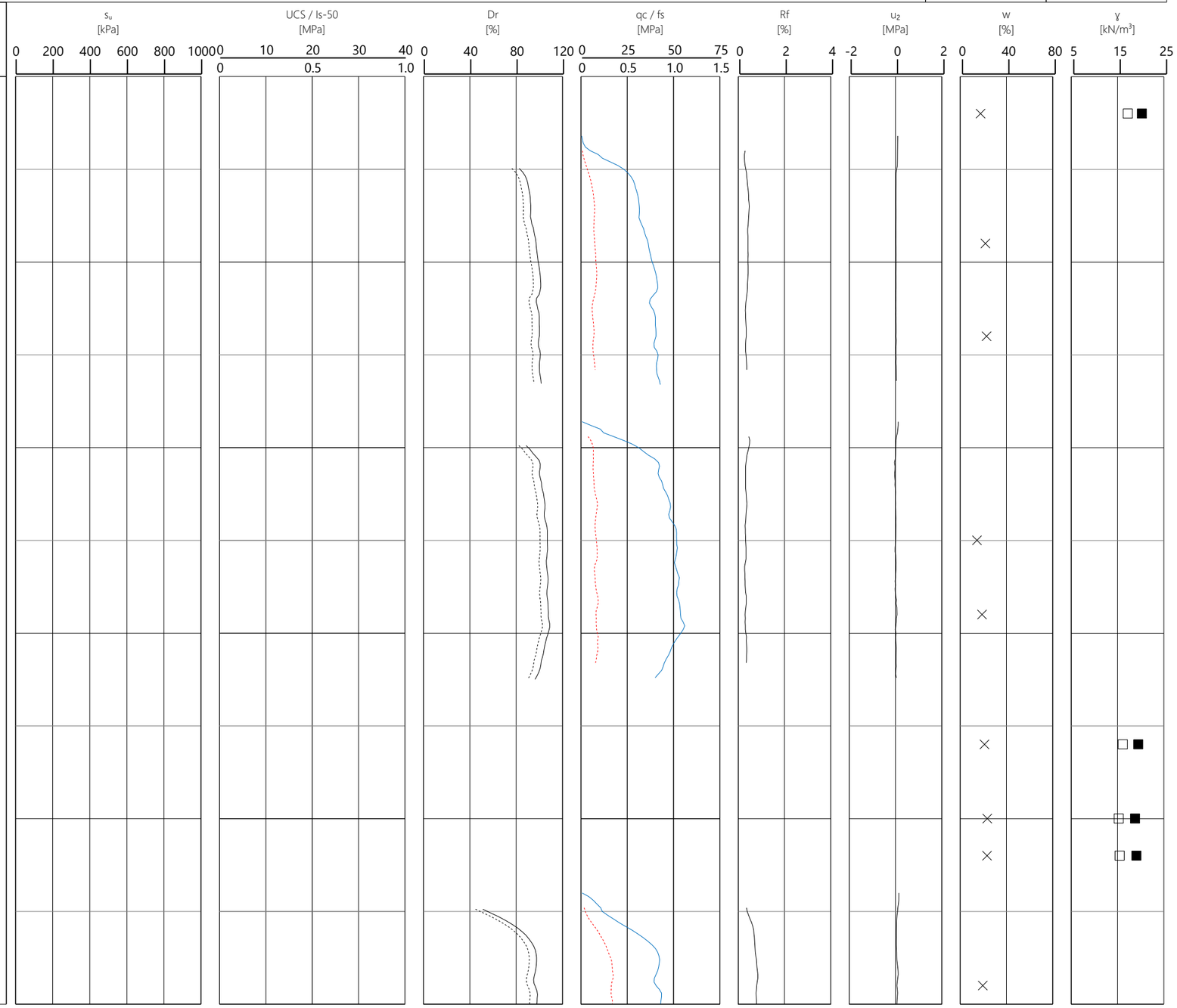
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	57.80	**BH08**
Fugro Reference	F186642			Seabed Level [m LAT]	-19.40	
Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum	UTM Zone 30	Date	11 07 2022 to 13 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 3 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
11.0	-30.0	2.50 m to 13.30 m - Very dense greyish brown slightly gravelly slightly silty SAND. Sand is fine and medium. [WESTERN IRISH SEA FORMATION]						
12.0	-31.0							
13.0	-32.0							
14.0	-33.0	13.30 m to 17.30 m - Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND. Sand is fine and medium. [WESTERN IRISH SEA FORMATION]						
	-34.0							



Sample / Testing:
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- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
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Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

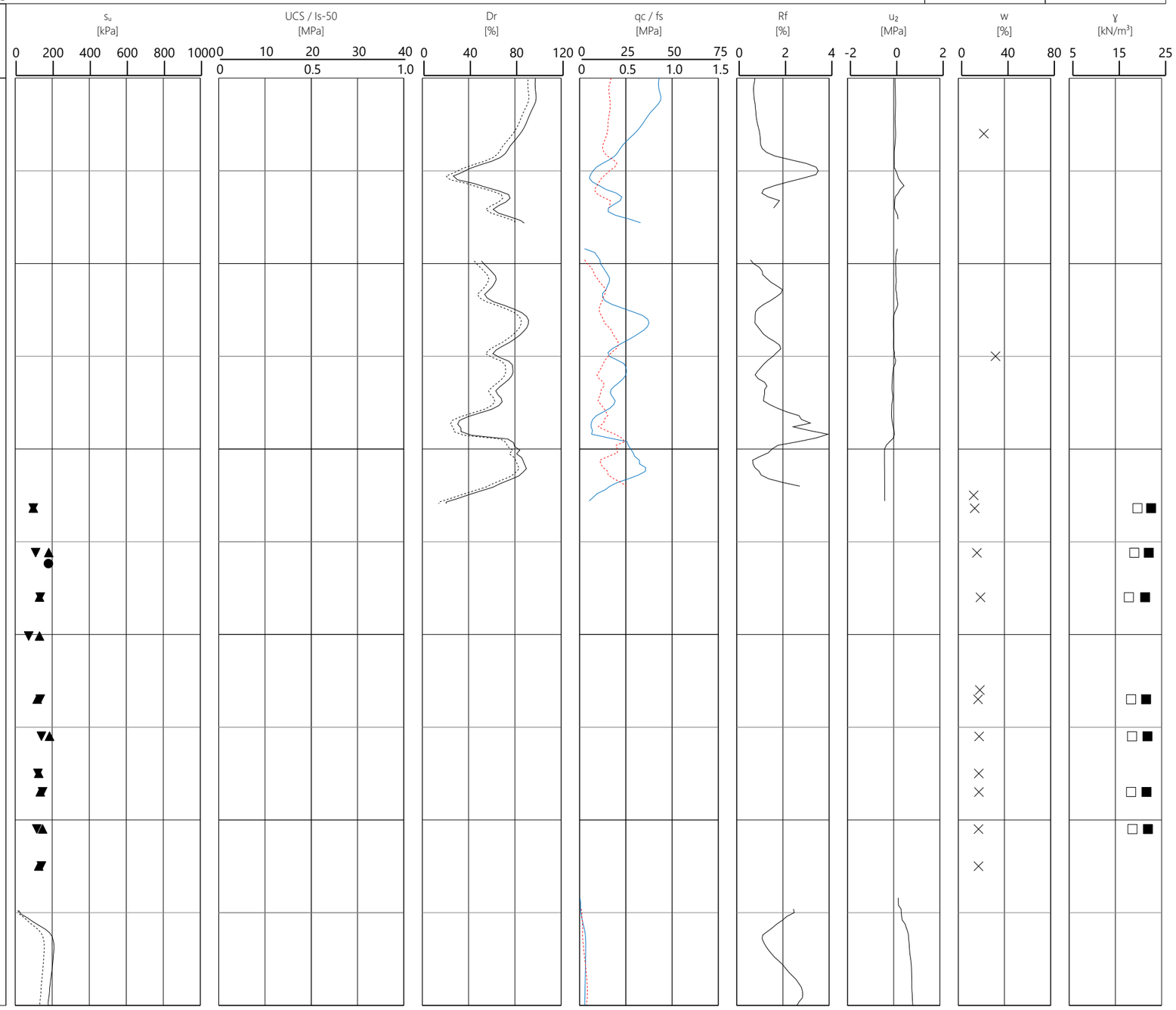
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		13.30 m to 17.30 m - Very dense becoming medium dense to dense greyish brown to brown slightly silty SAND. Sand is fine and medium. [WESTERN IRISH SEA FORMATION]						
16.0	-35.0							
	-36.0	16.80m to 17.05m; with a medium bed of greyish brown sandy clayey gravel. Sand is coarse. Gravel is angular and subangular fine to coarse of basalt, sandstone and silstone.						
17.0		17.30 m to 22.30 m - Firm greyish brown slightly gravelly slightly sandy CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of basalt, quartz and rare siltstone. [CARDIGAN BAY FORMATION]						
18.0	-37.0							
	-38.0							
19.0								
	-39.0	From 19.80m; stiff						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
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- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests performed on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

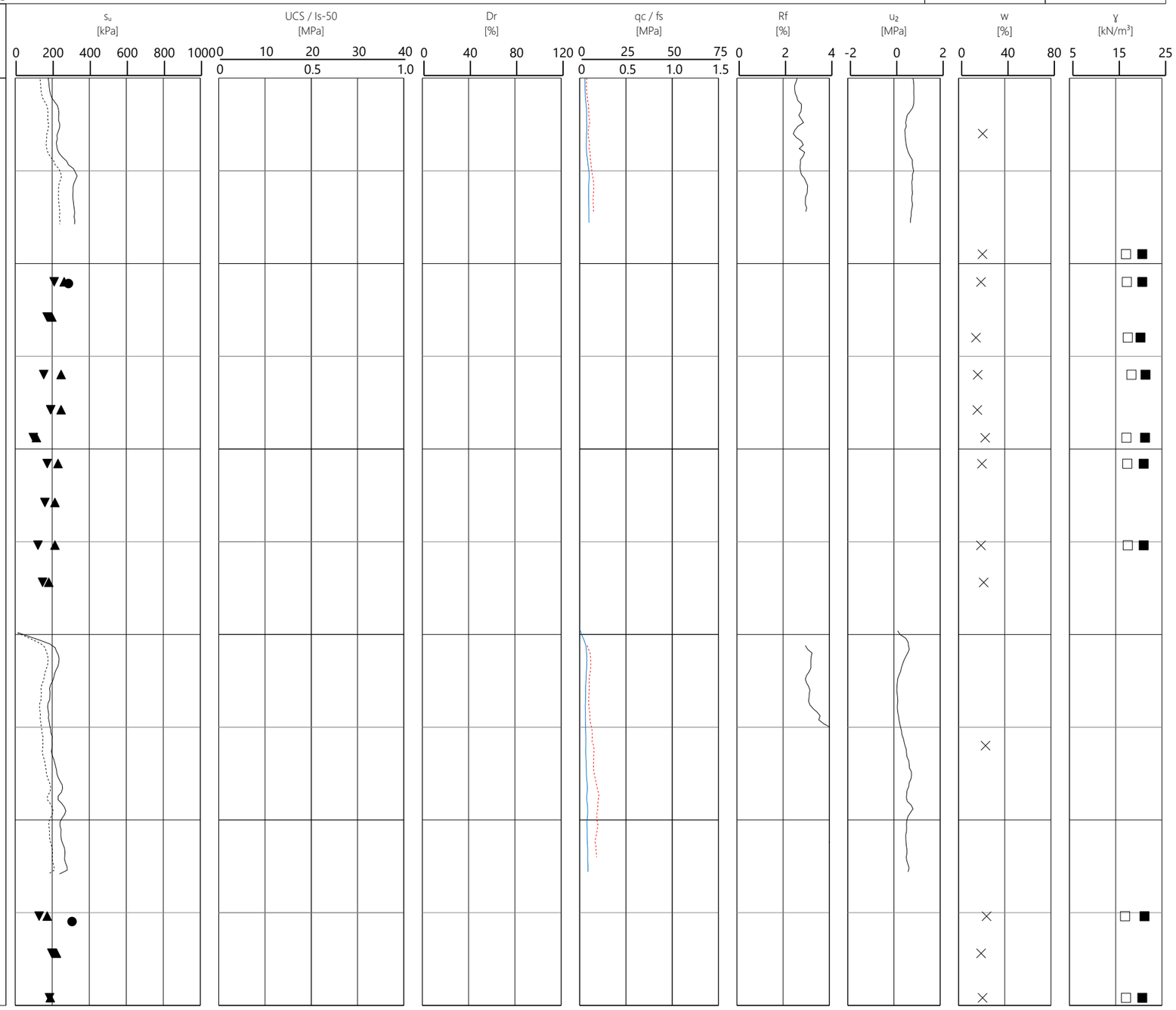
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	57.80
Fugro Reference	F186642			Seabed Level [m LAT]	-19.40
Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum	UTM Zone 30	Date	11 07 2022 to 13 07 2022
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 12

BH08

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
21.0	-40.0	17.30 m to 22.30 m - Firm greyish brown slightly gravelly slightly sandy CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of basalt, quartz and rare siltstone. [CARDIGAN BAY FORMATION]						
		21.30m to 21.80m; locally very stiff						
22.0	-41.0							
	-42.0	22.30 m to 27.80 m - Stiff greyish brown thinly laminated CLAY [CARDIGAN BAY FORMATION]						
23.0		23.30m to 24.30m; with rare pockets of fine sand (<15mm x 5mm)						
	-43.0							
24.0								
	-44.0	From 24.80m; very stiff						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

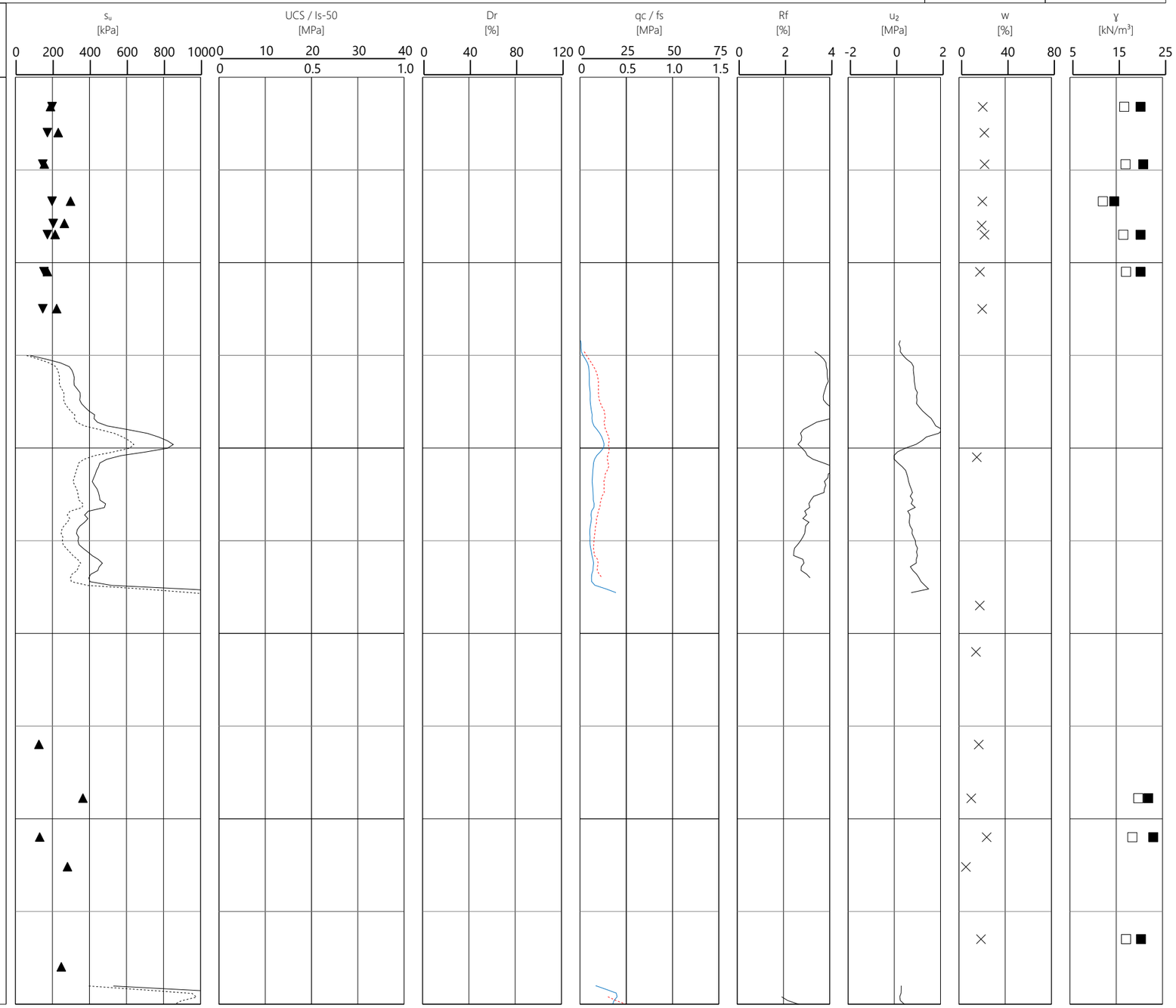
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
26.0	-45.0	22.30 m to 27.80 m - Stiff greyish brown thinly laminated CLAY [CARDIGAN BAY FORMATION]						
27.0	-46.0							
	-47.0							
28.0	-48.0	27.80 m to 29.80 m - Very stiff greyish brown slightly gravelly CLAY. Gravel is angular fine and medium of basalt. [CARDIGAN BAY FORMATION] 27.90m to 28.12m; with a medium bed of light greyish brown silty fine sand. 28.30m to 28.70m; with frequent pockets of fine sand (<50mm x 110mm)						
29.0	-49.0	29.30m to 29.80m; with a thick bed of slightly gravelly clayey to very clayey fine and medium sand						
		29.80 m to 35.30 m - Stiff dark greyish brown						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
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Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

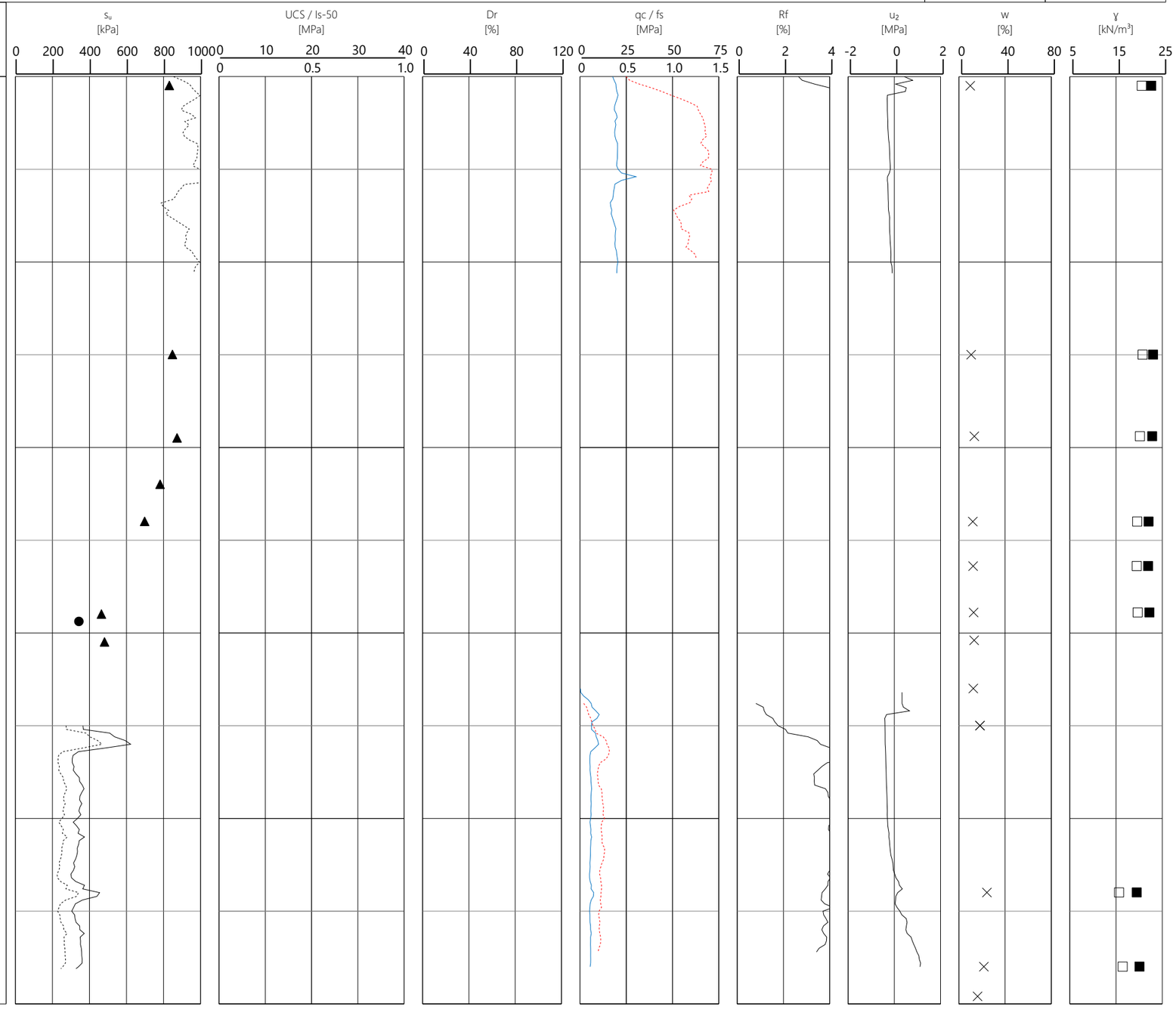
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	57.80	**BH08**
Fugro Reference	F186642			Seabed Level [m LAT]	-19.40	
Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum	UTM Zone 30	Date	11 07 2022 to 13 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 7 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
31.0	-50.0	29.80 m to 35.30 m - Stiff dark greyish brown gravelly sandy CLAY. Sand is fine. Gravel is angular fine to coarse of mixed lithologies including basalt. [CARDIGAN BAY FORMATION]		100				
32.0	-51.0			100				
33.0	-52.0	33.30m to 33.55m; slightly gravelly		100				
34.0	-53.0			100				
	-54.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

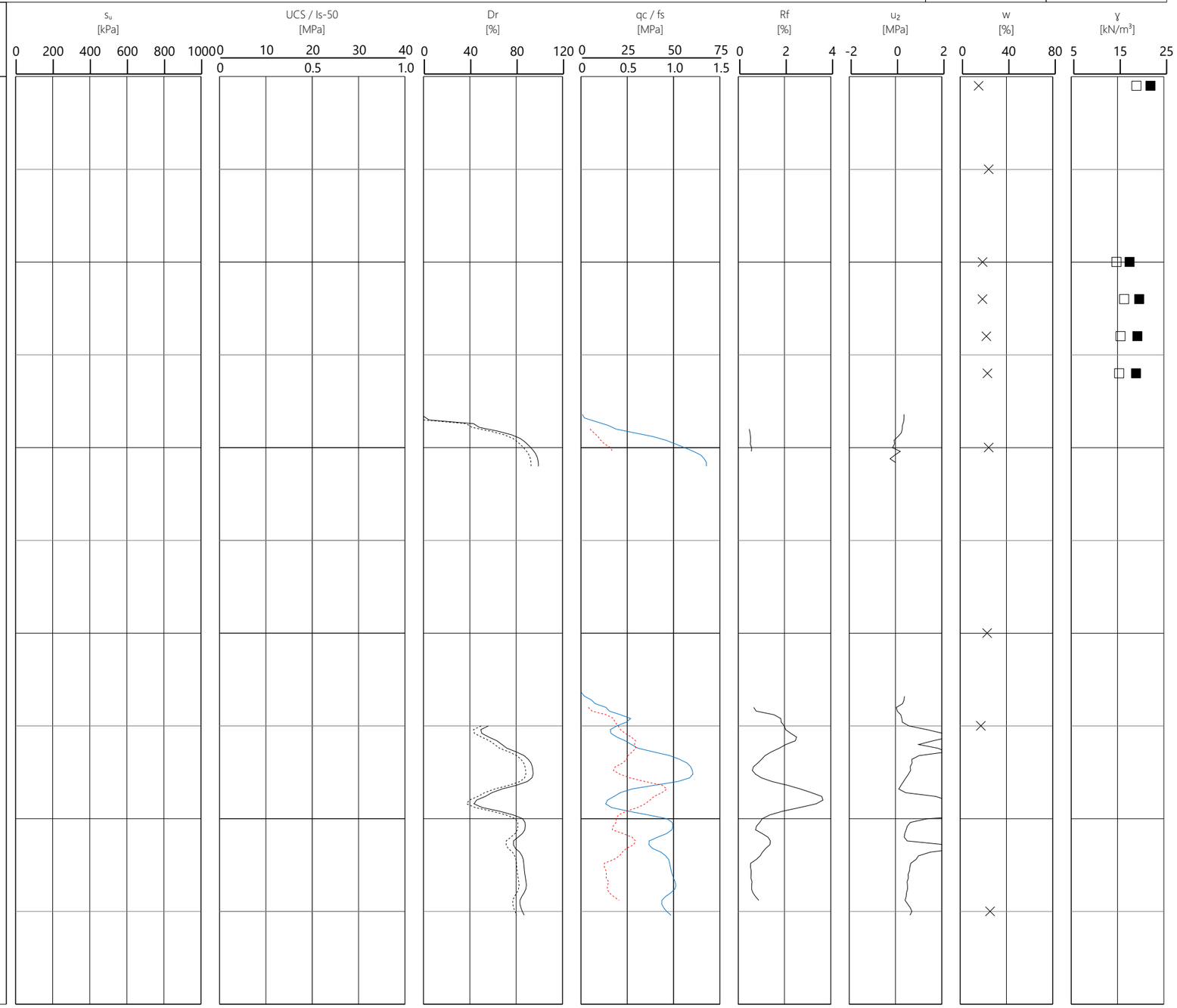
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
36.0	-55.0	29.80 m to 35.30 m - Stiff dark greyish brown gravelly sandy CLAY. Sand is fine. Gravel is angular fine to coarse of mixed lithologies including basalt. [CARDIGAN BAY FORMATION]		100				
37.0	-56.0	35.30 m to 47.80 m - Dense to very dense locally medium dense brown silty SAND with rare mica crystals (<2mm) . Sand is fine. [CARDIGAN BAY FORMATION]						
38.0	-57.0			100				
39.0	-58.0							
	-59.0			93				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

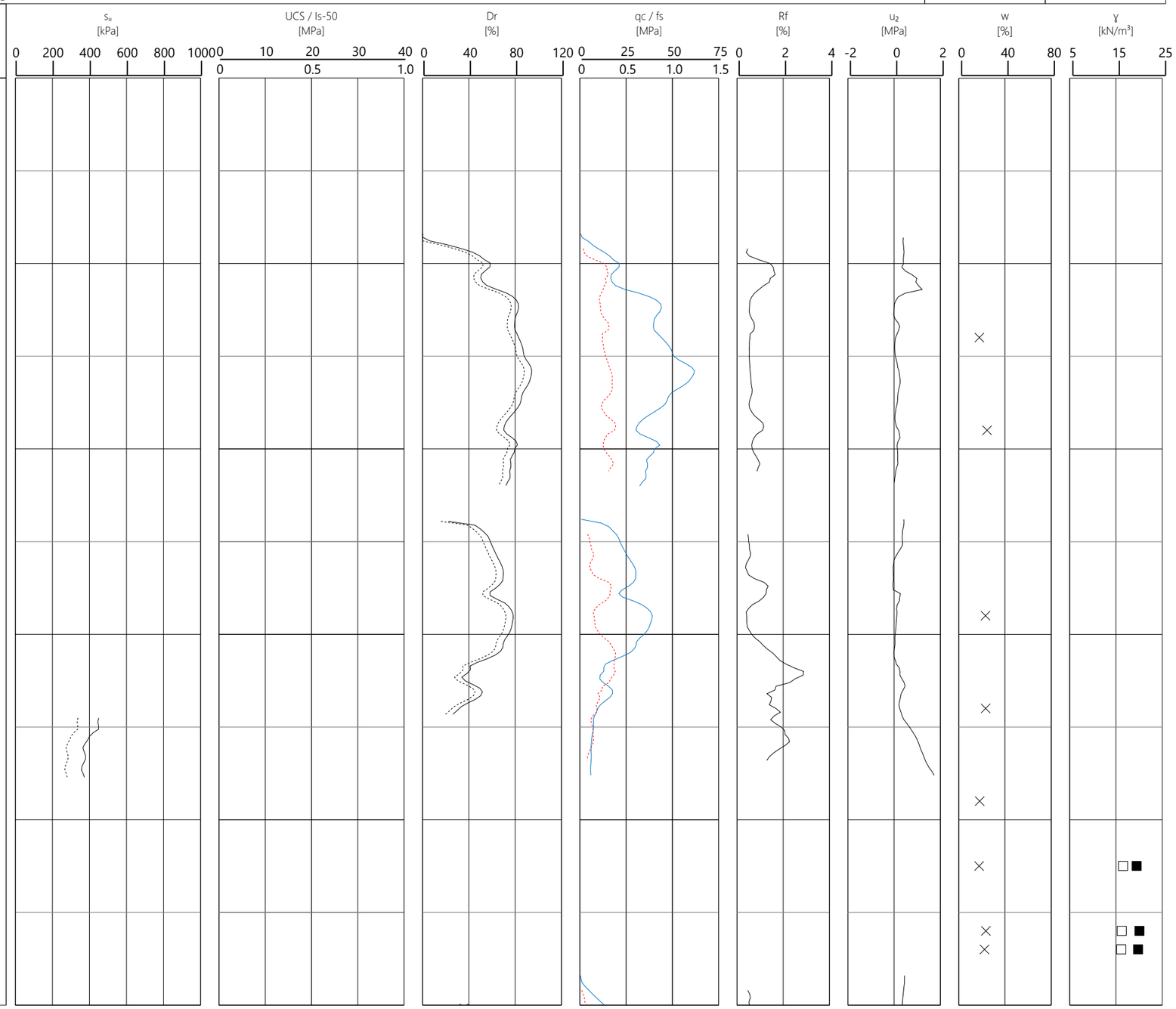
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
41.0	-60.0	35.30 m to 47.80 m - Dense to very dense locally medium dense brown silty SAND with rare mica crystals (<2mm) . Sand is fine. [CARDIGAN BAY FORMATION]		30				
		40.10m to 40.80m; assumed zone of core loss.						
42.0	-61.0							
	-62.0							
43.0		43.30m to 43.95m; with a thick bed of stiff dark brownish grey thinly to thickly laminated silty CLAY with very closely to closely spaced partings of light grey fine sand.						
	-63.0							
44.0		44.20m to 44.30m; with a thin bed of dark grey slightly silty sandy clay						
	-64.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
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- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		35.30 m to 47.80 m - Dense to very dense locally medium dense brown silty SAND with rare mica crystals (<2mm) . Sand is fine. [CARDIGAN BAY FORMATION]						
	-65.0	45.30m to 46.30m; with medium spaced very thin beds of silty clay and rare pockets of organic matter (<20mm).						
46.0								
	-66.0							
		46.80m to 47.20m; gravelly. Gravel is angular to subrounded fine and medium of quartz and basalt.						
47.0								
		47.20m to 47.25m; with a very thin bed of slighty gravelly sandy clay. Sand is fine to coarse. Gravel is subangular fine to medium of basalt and quartz.						
	-67.0							
		47.80 m to 49.80 m - Firm greyish brown slightly gravelly slightly sandy clayey SILT with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of basalt, quartz and chert. Cobbles are subangular and subrounded of basalt and chert. [CARDIGAN BAY FORMATION]						
48.0								
	-68.0							
49.0				74				
	-69.0							
		49.80 m to 50.48 m - Dense to very dense						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
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Core Details:
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- ▼ Torvane
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- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
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Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

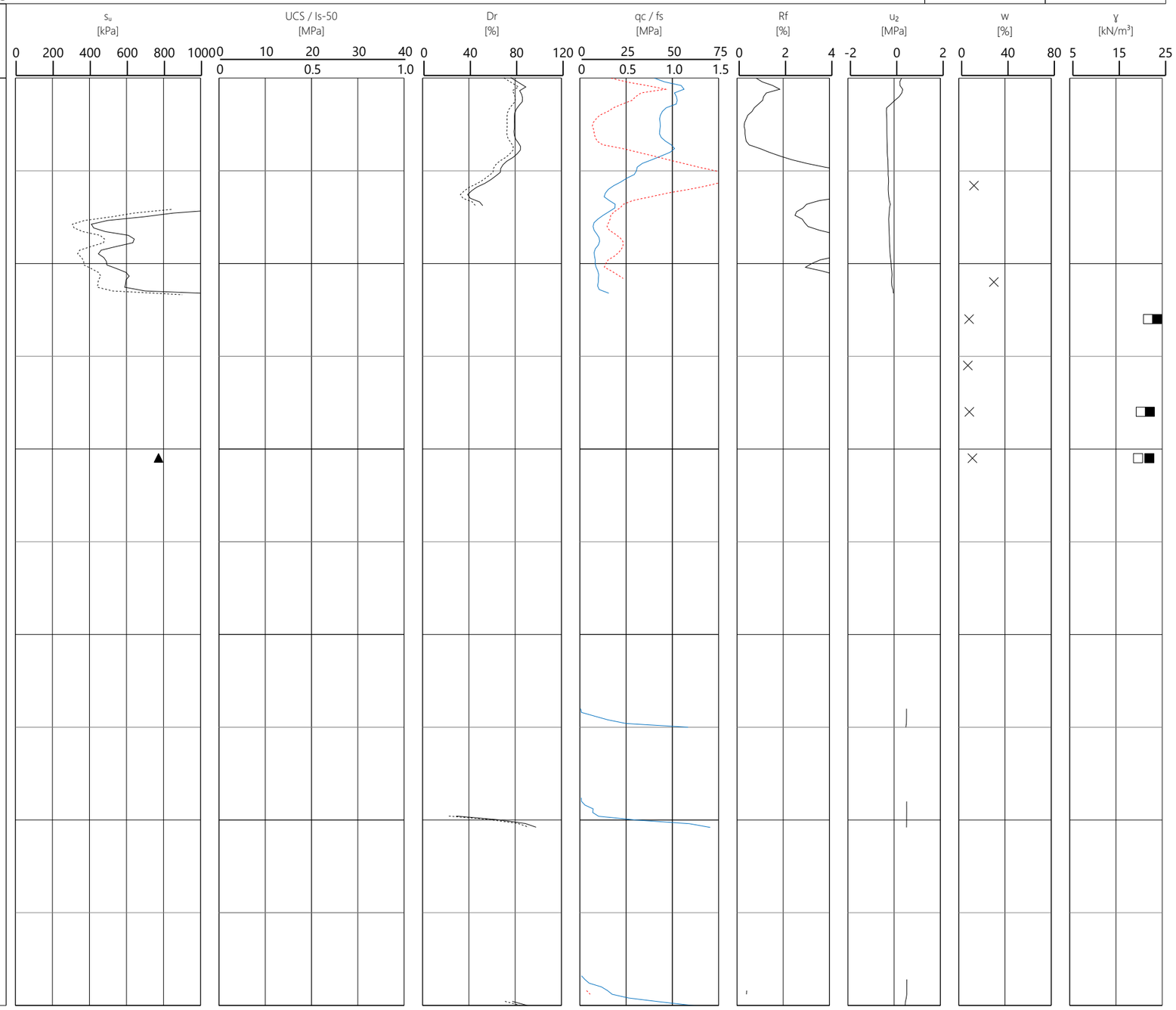
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 11 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		49.80 m to 50.48 m - Dense to very dense SAND						
	-70.0	50.48 m to 52.30 m - Firm greyish brown slightly gravelly slightly sandy clayey SILT with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of basalt, quartz and chert. Cobbles are subangular and subrounded of basalt and chert. [CARDIGAN BAY FORMATION]		70				
51.0		50.57m to 50.97m; with a medium bed of firm thinly laminated greyish brown slightly gravelly silty clay. Gravel is angular fine of basalt.						
	-71.0			100				
52.0								
		52.30 m to 55.79 m - Very dense SAND, possibly gravel. (No sample recovery - CPT description only)						
	-72.0			0				
53.0								
	-73.0			0				
54.0								
	-74.0			0				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
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Key for Friction Ratio (Rf):

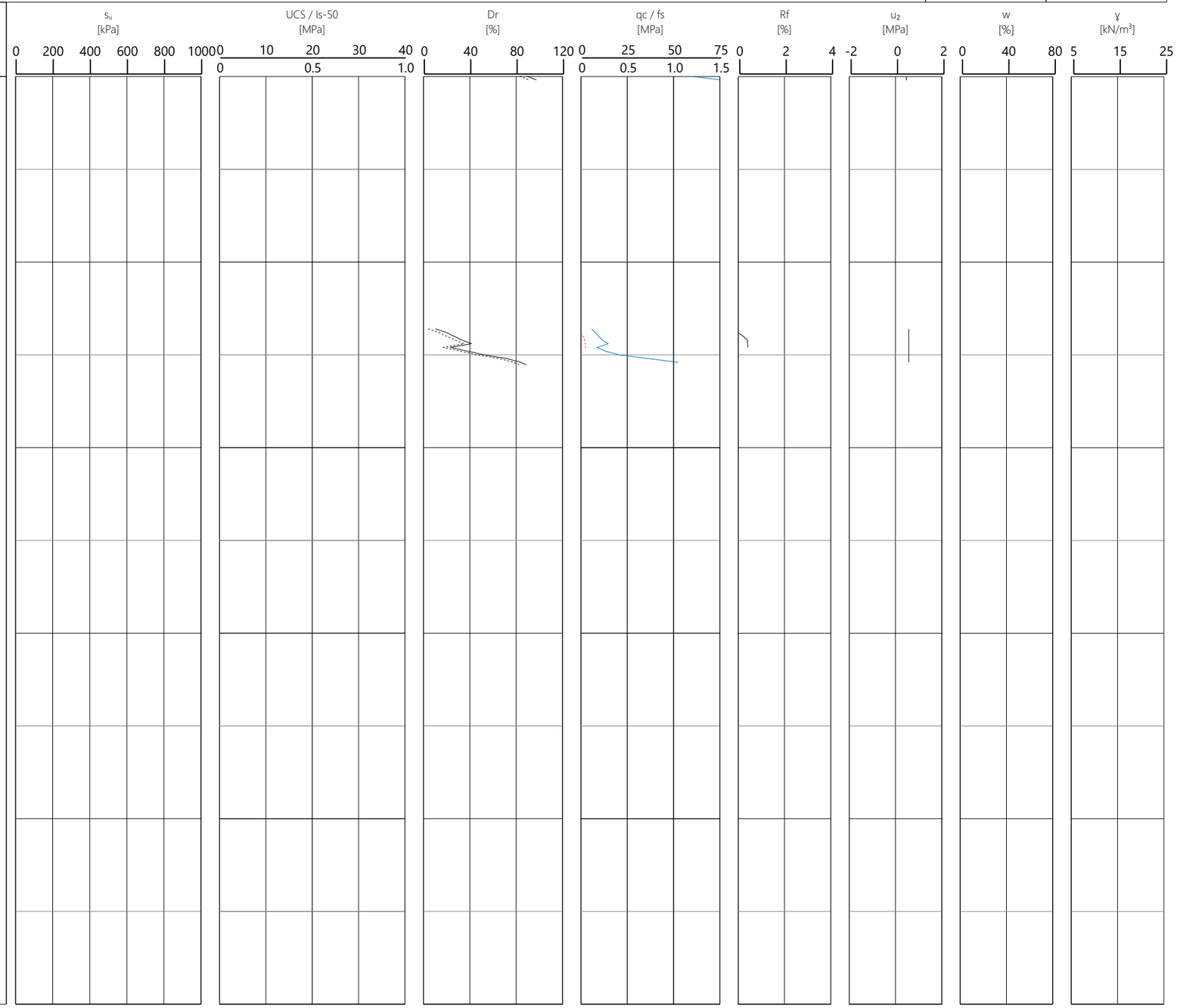
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	57.80	**BH08**
	Fugro Reference	F186642		Seabed Level [m LAT]	-19.40	
	Coordinates	301523.68 mE 5856887.61 mN	Coordinate Datum / UTM Zone 30	Date	11 07 2022 to 13 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 12 of 12

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-75.0	52.30 m to 55.79 m - Very dense SAND, possibly gravel. (No sample recovery - CPT description only)		34				
56.0	-76.0	55.79 m to 57.80 m - Dense to very dense ulticoloured black white dark green yellowish brown dark grey GRAVEL with low cobble content. Gravel is angular to rounded, medium to coarse of mixed lithologies including schist, quartz, flint chert, basalt, sandstone and siltstone. Cobbles are subangular and subrounded of basalt, siltstone and sandstone. [CARDIGAN BAY FORMATION]		53				
57.0	-77.0							
58.0	-78.0							
59.0	-79.0							



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- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.29

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH08**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301523.68 N5856887.61	Ground Elevation (m Datum)	-19.40	Sheet 1 of 3
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	57.80	RORC	11 07 2022	13 07 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	JL,MT,AB,CH	RF,MN	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 34.30m; Cantilever to LAT = 14.90m; LAT to Mud = 19.40m 3. All depths refer to depth below seabed level.

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
11 07 2022	07:00	0.00	2.50		
11 07 2022	08:40	0.00			
11 07 2022	09:28	2.80	2.50		
11 07 2022	09:47	3.80	2.80		
11 07 2022	10:15	4.30	3.80		
11 07 2022	10:37	5.30	4.30		
11 07 2022	11:03	6.30	5.30		
11 07 2022	11:30	6.80	6.30		
11 07 2022	12:40	7.80	6.80		
11 07 2022	13:20	8.30	7.80		
11 07 2022	13:50	9.30	8.30		
11 07 2022	14:18	10.30	9.30		
11 07 2022	15:00	10.80	10.30		
11 07 2022	15:22	11.80	10.80		
11 07 2022	16:00	12.30	11.80		
11 07 2022	16:28	13.30	12.30		
11 07 2022	16:54	13.80	13.30		
11 07 2022	17:10	14.30	13.80		
11 07 2022	17:45	14.80	14.30		
11 07 2022	18:08	15.80	14.80		
11 07 2022	19:00	15.80	15.80		
11 07 2022	19:15	16.30	16.30		
11 07 2022	19:35	17.30	17.30		
11 07 2022	20:20	18.30	18.30		
11 07 2022	21:00	19.30	19.30		
11 07 2022	21:50	19.80	19.80		
11 07 2022	22:15	20.80	20.80		
11 07 2022	23:00	21.80	21.80		
11 07 2022	23:40	22.80	22.80		
12 07 2022	01:20	23.30	23.30		
12 07 2022	01:55	24.30	24.30		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.50	177	2.50	177
57.80	146	57.80	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	2.50	W	0		00:11
2.50	2.80	PB	100	Grey	00:09
2.80	3.80	PB	100	Grey	00:09
3.80	4.30	PB	100	Grey	00:13
4.30	5.30	PB	100	Grey	00:10
5.30	6.30	PB	100	Grey	00:06
6.30	6.80	PB	100	Grey	00:06
6.80	7.80	PB	100	Grey	00:05
7.80	8.30	PB	100	Grey	00:04
8.30	9.30	PB	100	Grey	00:08
9.30	10.30	PB	100	Grey	00:06
10.30	10.80	PB	100	Grey	00:07
10.80	11.80	PB	100	Grey	00:01
11.80	12.30	PB	100	Grey	00:03
12.30	13.30	PB	100	Grey	00:05
13.30	13.80	PB	100	Grey	00:05
13.80	14.30	PB	100	Grey	
14.30	14.80	PB	100	Grey	
14.80	15.80	PB	100	Grey	
15.80	16.30	PB	100	Grey	
16.30	17.30	PB	100	Grey	
17.30	18.30	PB	100	Grey	
18.30	19.30	PB	100	Grey	
19.30	19.80	PB	100	Grey	
19.80	20.80	PB	100	Grey	
20.80	21.80	PB	100	Grey	
21.80	22.80	PB	100	Grey	
22.80	23.30	PB	100	Grey	
23.30	24.30	PB	100	Grey	
24.30	25.30	PB	100	Grey	
25.30	26.30	PB	100	Grey	
26.30	26.80	PB	100	Grey	
26.80	27.80	PB	100	Grey	
27.80	29.60	PB	100	Grey	
28.80	29.80	PB	100	Grey	
29.80	31.30	PB	100	Grey	
31.30	32.30	PB	100	Grey	
32.30	33.30	PB	100	Grey	
33.30	34.80	PB	100	Grey	
34.80	35.80	PB	100	Grey	
35.80	36.80	PB	100	Grey	
36.80	38.30	PB	100	Grey	
38.30	39.80	PB	100	Grey	
39.80	40.80	PB	100	Grey	
40.80	41.30	PB	100	Grey	
41.30	42.30	PB	100	Grey	
42.30	42.80	PB	100	Grey	
42.80	43.80	PB	100	Grey	
43.80	44.80	PB	100	Grey	
44.80	45.30	PB	100	Grey	
45.30	46.30	PB	100	Grey	
46.30	46.80	PB	100	Grey	
46.80	47.80	PB	100	Grey	
47.80	48.80	PB	100	Grey	
48.80	49.80	PB	100	Grey	
49.80	51.30	PB	100	Grey	
51.30	52.30	PB	100	Grey	
52.30	53.30	PB	100	Grey	
53.30	53.80	PB	100	Grey	
53.80	54.80	PB	100	Grey	
54.80	56.30	PB	100	Grey	
56.30	57.80	PB	90	Grey	

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
29.80	31.30	102
31.30	32.30	102
32.30	33.30	102
33.30	34.80	102
34.80	35.80	102
36.80	38.30	102
38.30	39.80	102
39.80	40.80	102
48.80	49.80	102
49.80	51.30	102
51.30	52.30	102
52.30	53.30	102
53.30	53.80	102
53.80	54.80	102
54.80	56.30	102
56.30	57.80	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	57.80	Arisings	

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH08**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E301523.68 N5856887.61	Ground Elevation (m Datum)	-19.40	Sheet 2 of 3
	Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
12 07 2022	02:45	25.30	25.30		
12 07 2022	03:35	26.30	25.30		
12 07 2022	04:45	26.80	25.30		
12 07 2022	05:10	27.80	27.80		
12 07 2022	05:25	2.50	2.50		
12 07 2022	06:00	29.60	29.60		
12 07 2022	07:00	0.00	28.80		
12 07 2022	07:13	29.60	29.60		
12 07 2022	07:25	29.80	28.80		
12 07 2022	08:20	31.30	29.80		
12 07 2022	08:50	32.30	31.30		
12 07 2022	09:14	33.30	32.30		
12 07 2022	10:00	34.80	33.30		
12 07 2022	10:25	35.80	34.80		
12 07 2022	11:10	36.80	35.80		
12 07 2022	11:49	38.30	36.80		
12 07 2022	13:07	39.80	38.30		
12 07 2022	13:31	40.80	39.80		
12 07 2022	14:05	41.30	40.80		
12 07 2022	14:38	42.30	41.30		
12 07 2022	15:15	42.80	42.30		
12 07 2022	15:42	43.80	42.80		
12 07 2022	16:53	44.80	43.80		
12 07 2022	17:35	45.30	44.80		
12 07 2022	17:54	46.30	45.30		
12 07 2022	19:00	46.30	46.30		
12 07 2022	19:30	46.80	46.80		
12 07 2022	19:55	47.80	47.80		
12 07 2022	20:40	48.80	48.80		
12 07 2022	21:00	49.80	49.80		
12 07 2022	22:20	51.30	51.30		

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH08**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301523.68 N5856887.61	Ground Elevation (m Datum)	-19.40	Sheet 3 of 3
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
12 07 2022	22:45	52.30	52.30		
12 07 2022	23:15	53.30	53.30		
13 07 2022	01:15	53.80	53.80		
13 07 2022	02:15	54.80	54.80		
13 07 2022	03:15	56.30	56.30		
13 07 2022	04:30	57.80	57.80		
13 07 2022	07:00	57.80	57.80		

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

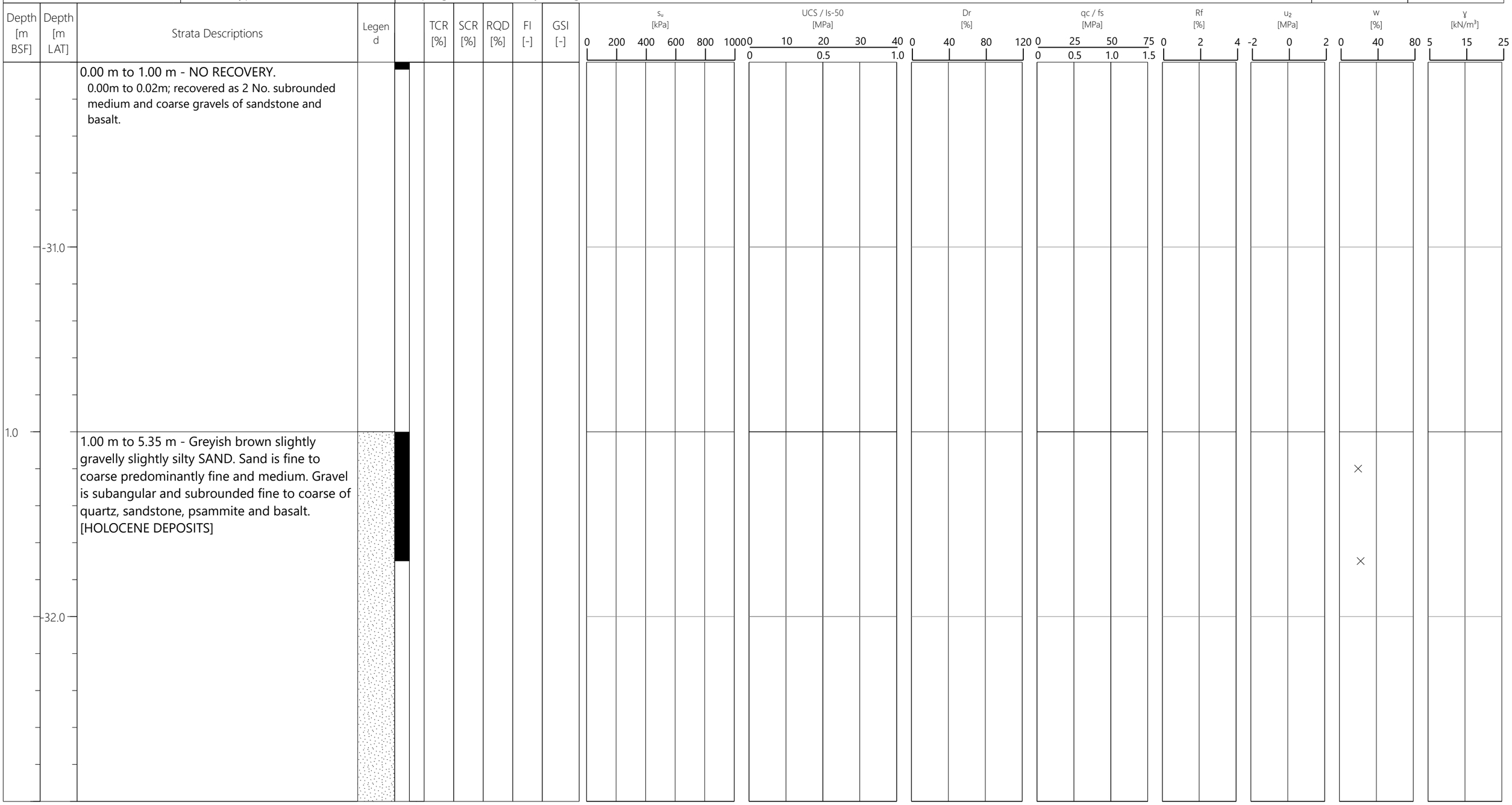
Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
	Client	Sure Partners Ltd			Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642			Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum	UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 1 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 1.00 m - NO RECOVERY. 0.00m to 0.02m; recovered as 2 No. subrounded medium and coarse gravels of sandstone and basalt.						
	-31.0							
1.0		1.00 m to 5.35 m - Greyish brown slightly gravelly slightly silty SAND. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone, psammite and basalt. [HOLOCENE DEPOSITS]						
	-32.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

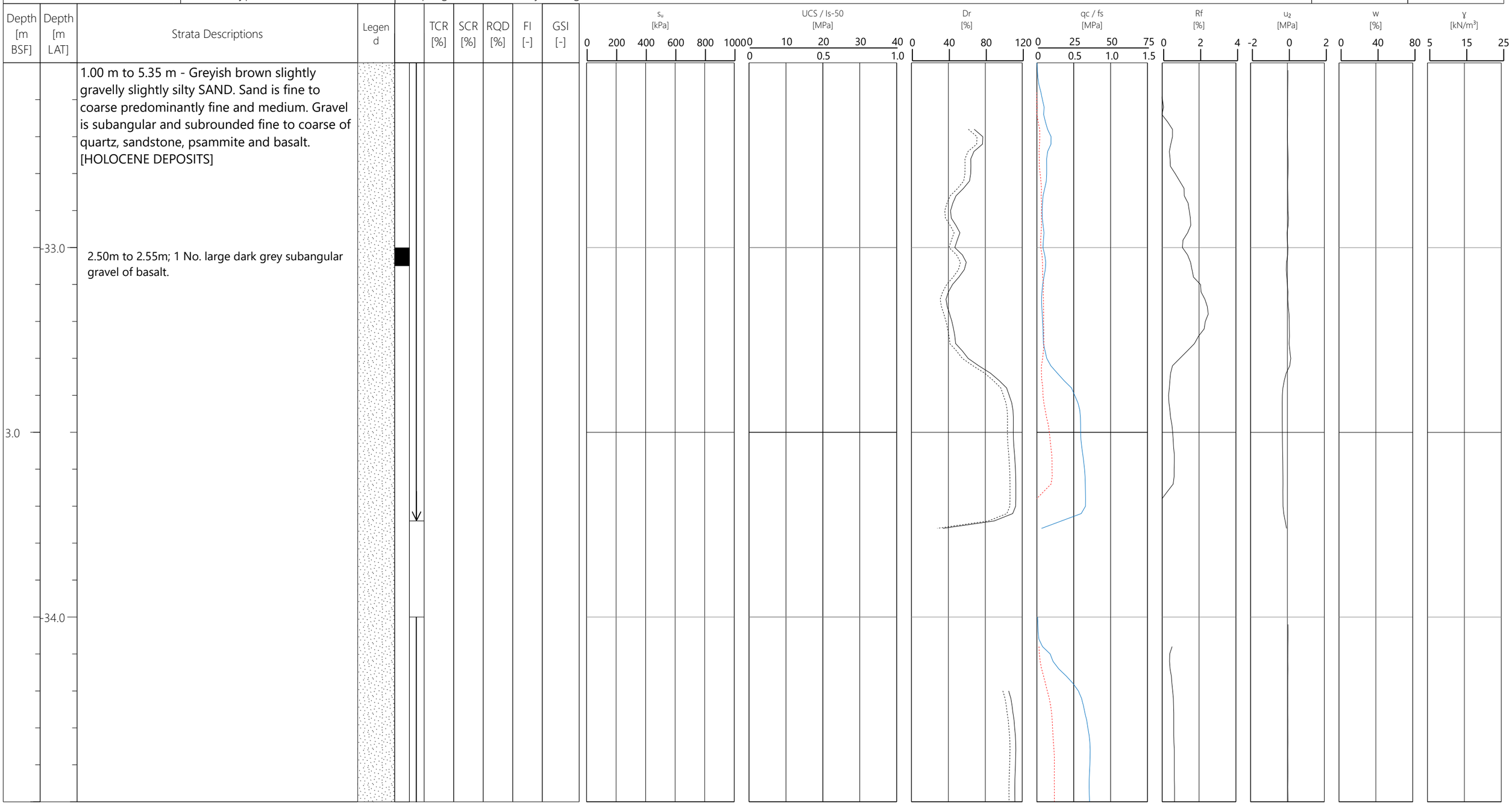
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
0.0		1.00 m to 5.35 m - Greyish brown slightly gravelly slightly silty SAND. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone, psammite and basalt. [HOLOCENE DEPOSITS]						
3.0	-33.0	2.50m to 2.55m; 1 No. large dark grey subangular gravel of basalt.						
	-34.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.34

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
5.0		1.00 m to 5.35 m - Greyish brown slightly gravelly slightly silty SAND. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone, psammite and basalt. [HOLOCENE DEPOSITS] 4.15m to 5.00m; no recovery.						
	35.0							
	36.0	5.35 m to 12.00 m - Greyish brown slightly silty SAND. Sand is fine and medium. [HOLOCENE DEPOSITS] 5.35m to 5.70m; medium bed of firm dark brown slightly gravelly sandy silt. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of basalt. 5.40m to 5.50m; no recovery 5.90m to 6.50m; no recovery.						

s_u [kPa]: 0 200 400 600 800 1000
UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0
Dr [%]: 0 40 80 120
qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5
Rf [%]: 0 2 4
u_2 [MPa]: -2 0 2
w [%]: 0 40 80
γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

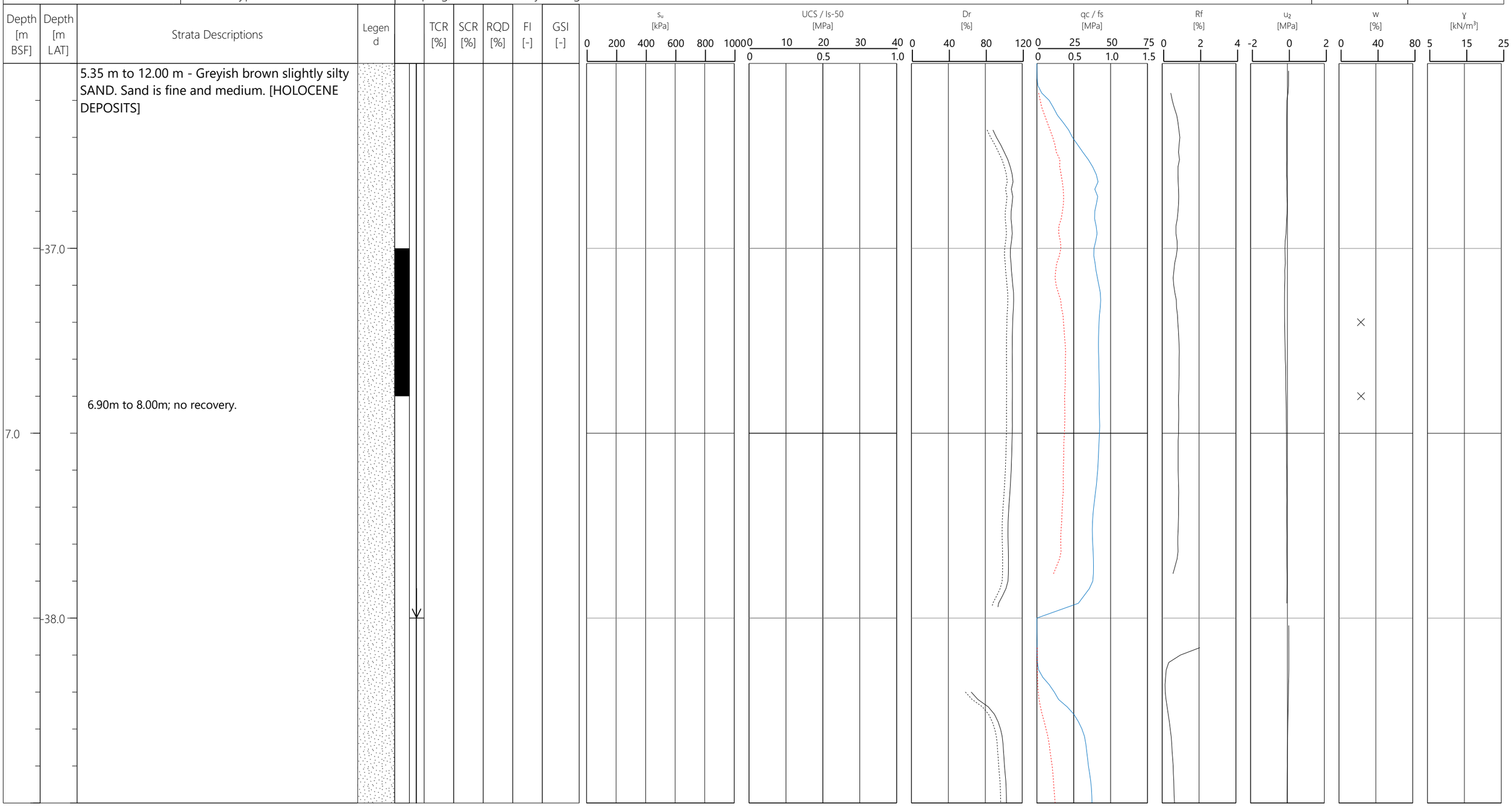
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		5.35 m to 12.00 m - Greyish brown slightly silty SAND. Sand is fine and medium. [HOLOCENE DEPOSITS]						
	-37.0							
		6.90m to 8.00m; no recovery.						
7.0								
	-38.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

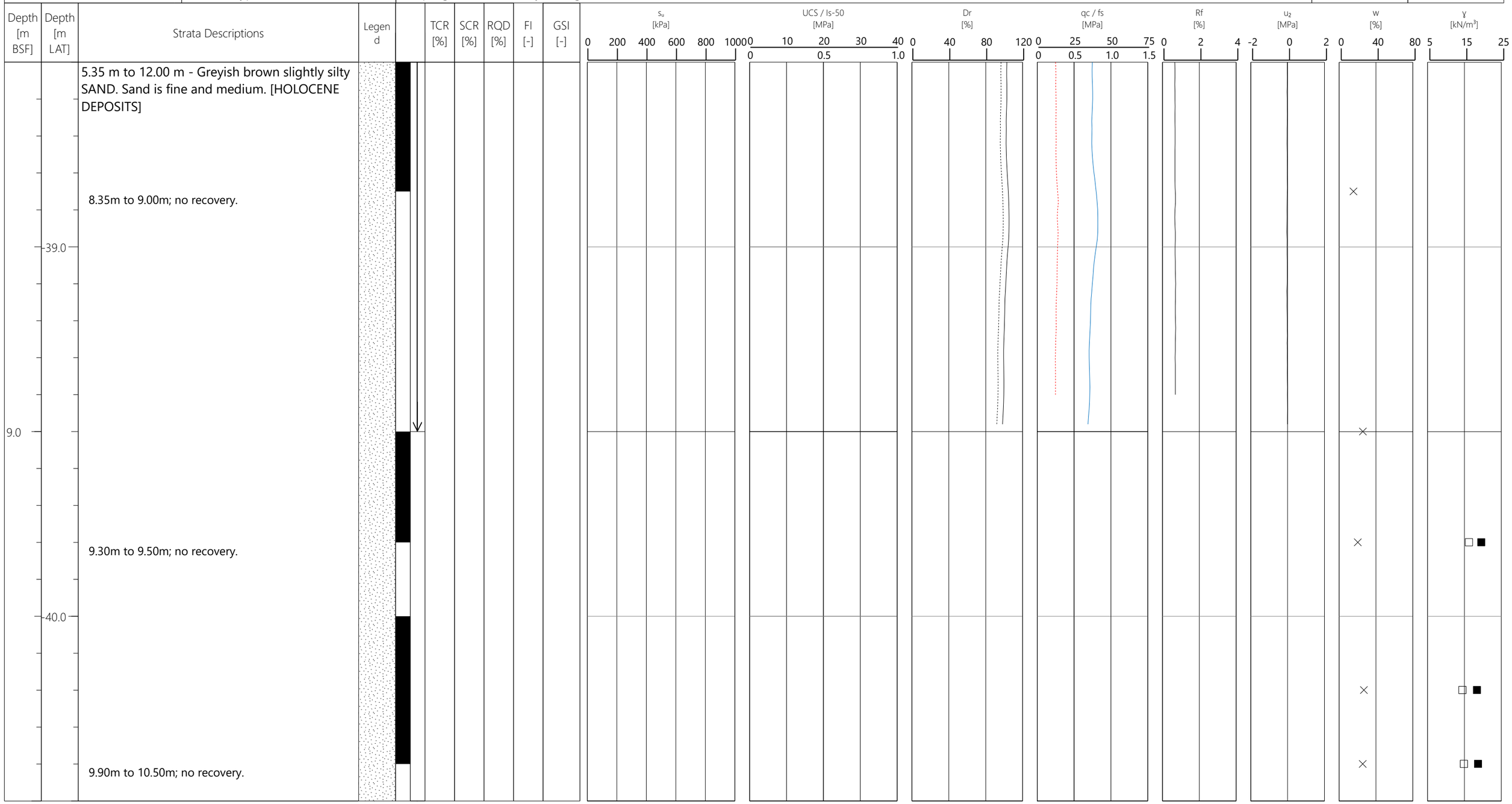
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	55.50	**BH09**
Fugro Reference	F186642			Seabed Level [m LAT]	-30.50	
Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum	UTM Zone 30	Date	17 06 2022 to 19 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 5 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		5.35 m to 12.00 m - Greyish brown slightly silty SAND. Sand is fine and medium. [HOLOCENE DEPOSITS]						
		8.35m to 9.00m; no recovery.						
	-39.0							
9.0								
		9.30m to 9.50m; no recovery.						
	-40.0							
		9.90m to 10.50m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		5.35 m to 12.00 m - Greyish brown slightly silty SAND. Sand is fine and medium. [HOLOCENE DEPOSITS]						
	-41.0							
11.0		10.95m to 12.00m; no recovery.						
	-42.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

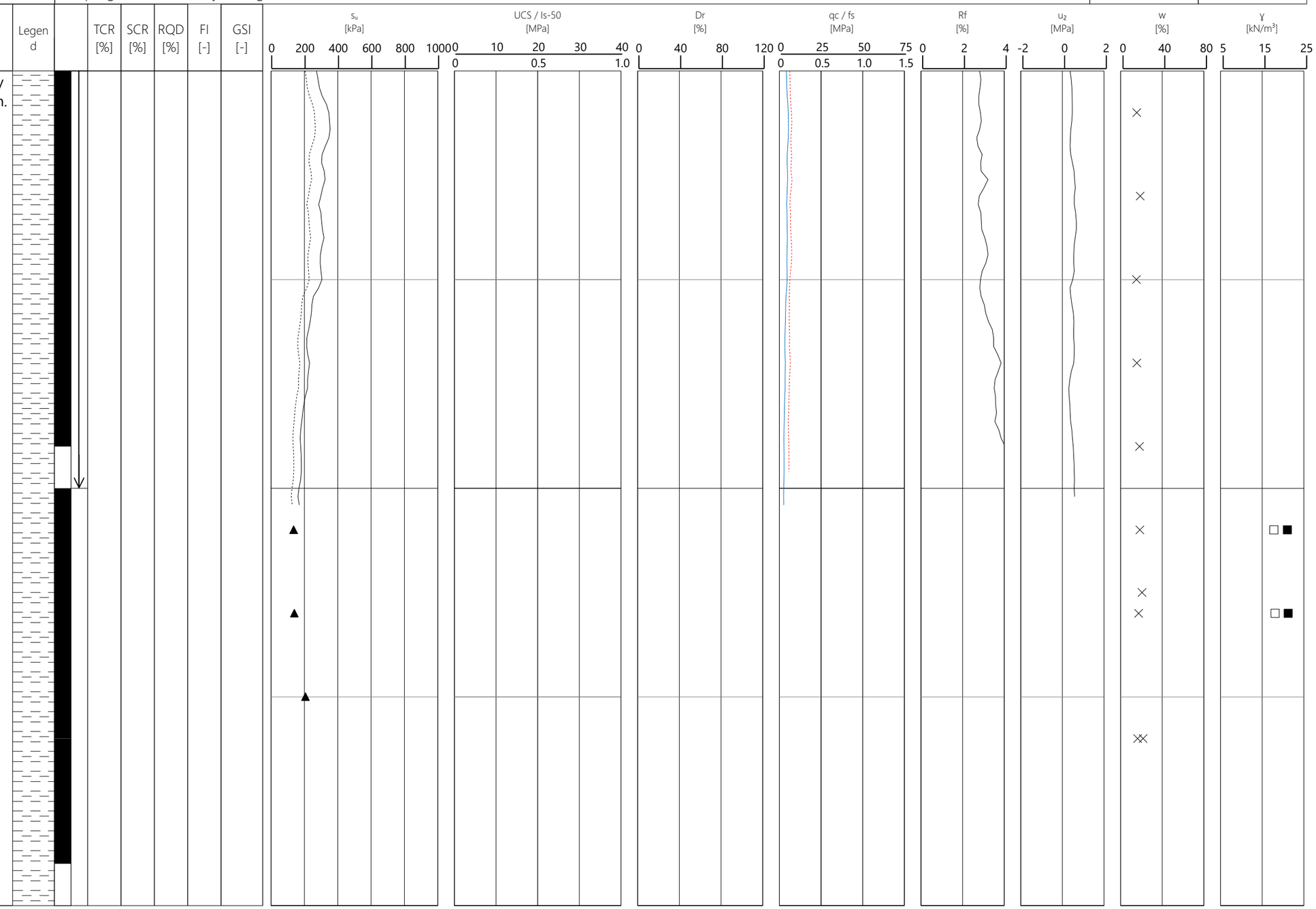
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		12.00 m to 14.50 m - Firm brown slightly sandy CLAY with rare gravel. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION]						
	-43.0							
		12.90m to 13.00m; no recovery.						
13.0								
	-44.0							
		13.90m to 14.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

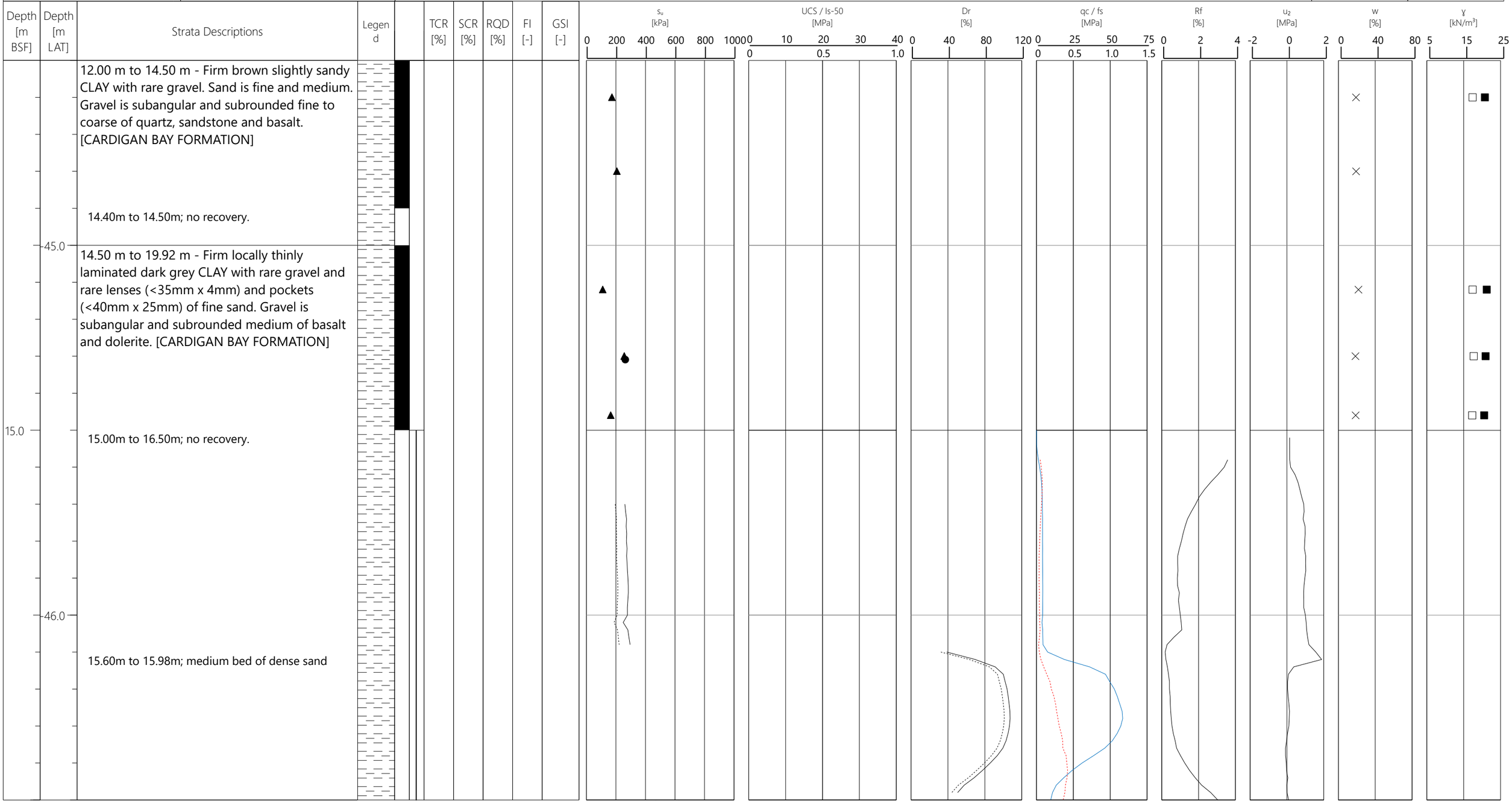
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		12.00 m to 14.50 m - Firm brown slightly sandy CLAY with rare gravel. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION]						
		14.40m to 14.50m; no recovery.						
	-45.0	14.50 m to 19.92 m - Firm locally thinly laminated dark grey CLAY with rare gravel and rare lenses (<35mm x 4mm) and pockets (<40mm x 25mm) of fine sand. Gravel is subangular and subrounded medium of basalt and dolerite. [CARDIGAN BAY FORMATION]						
15.0		15.00m to 16.50m; no recovery.						
	-46.0	15.60m to 15.98m; medium bed of dense sand						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

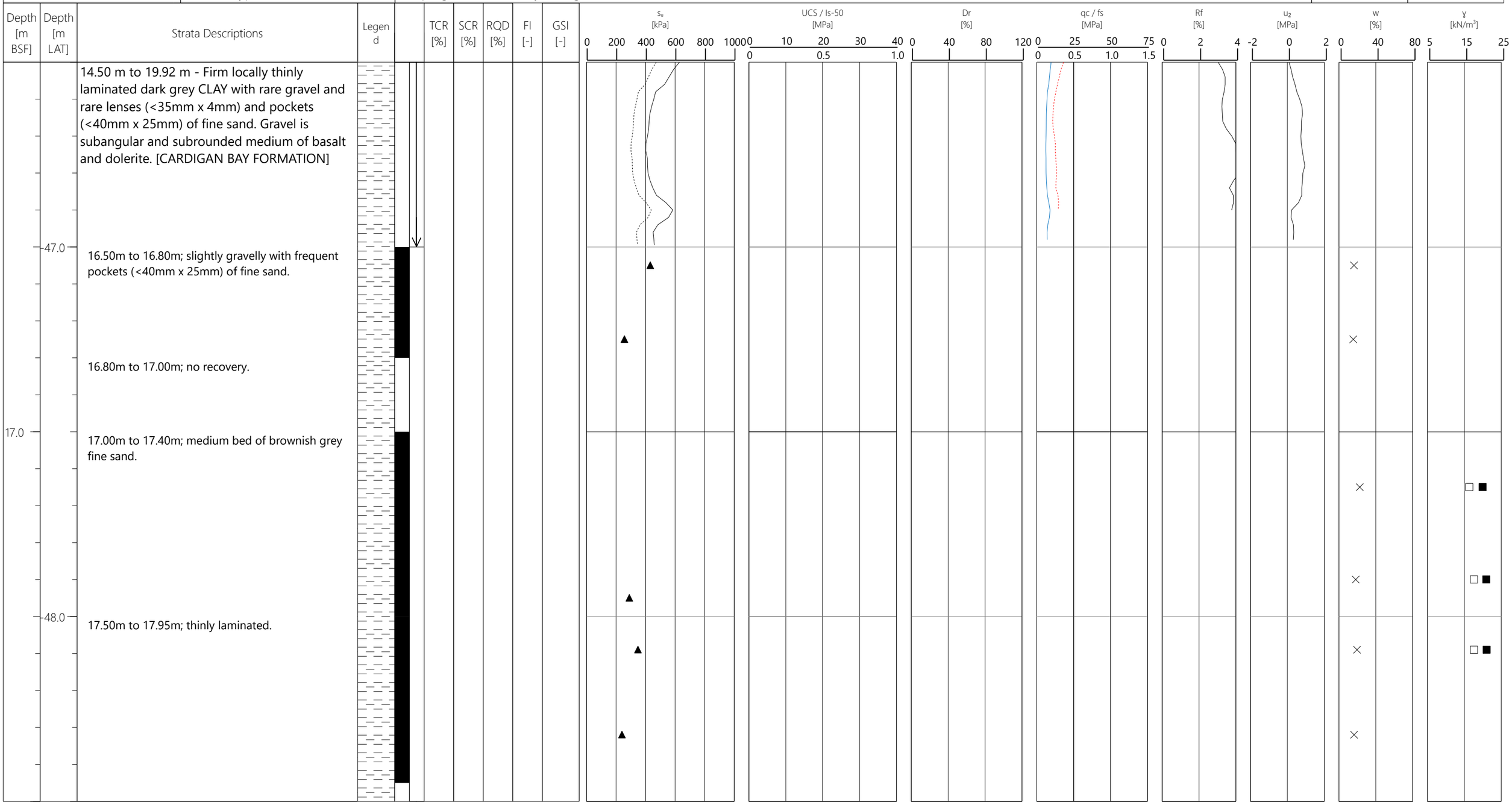
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		14.50 m to 19.92 m - Firm locally thinly laminated dark grey CLAY with rare gravel and rare lenses (<35mm x 4mm) and pockets (<40mm x 25mm) of fine sand. Gravel is subangular and subrounded medium of basalt and dolerite. [CARDIGAN BAY FORMATION]						
	-47.0	16.50m to 16.80m; slightly gravelly with frequent pockets (<40mm x 25mm) of fine sand.						
		16.80m to 17.00m; no recovery.						
17.0		17.00m to 17.40m; medium bed of brownish grey fine sand.						
	-48.0	17.50m to 17.95m; thinly laminated.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

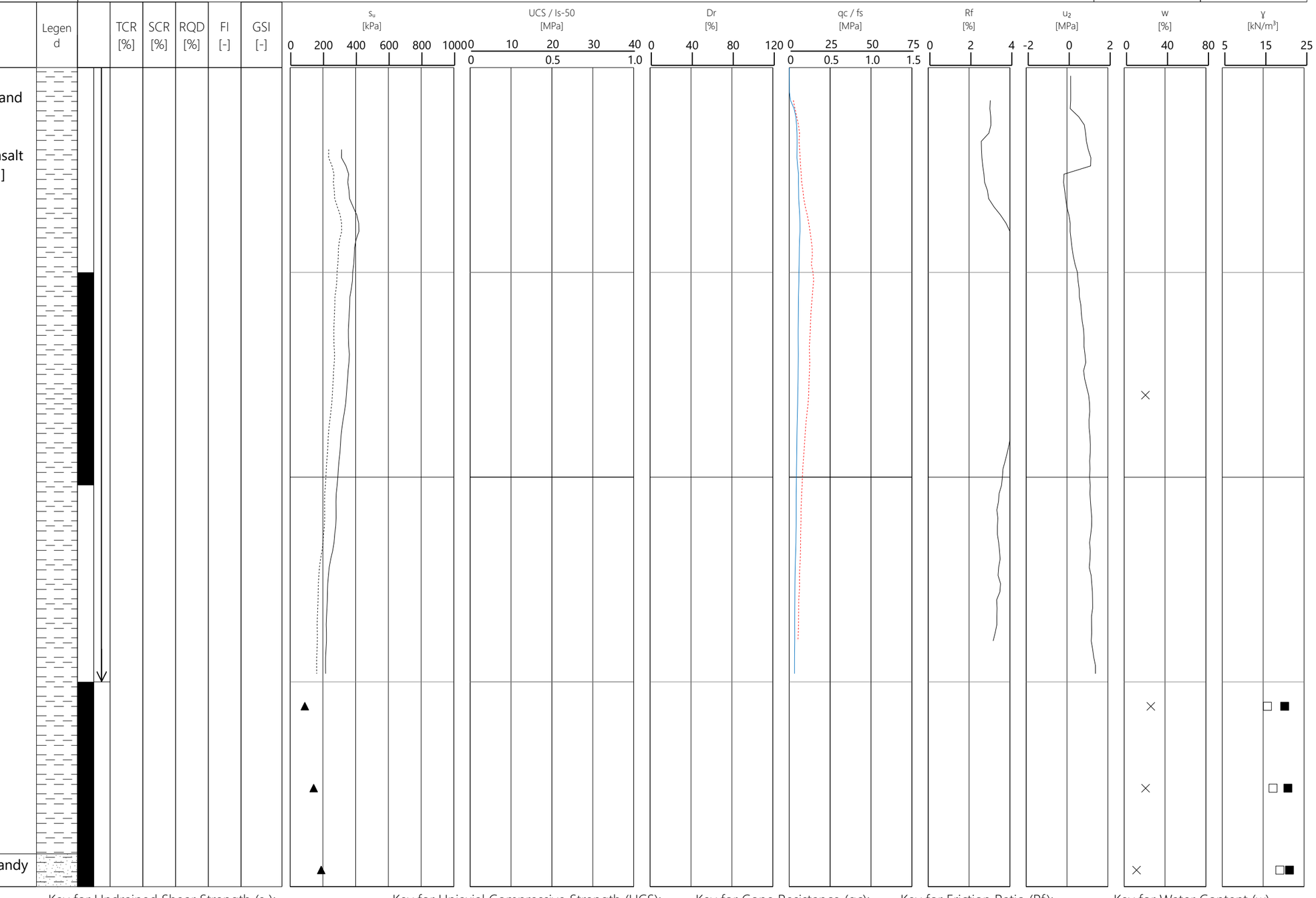
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		14.50 m to 19.92 m - Firm locally thinly laminated dark grey CLAY with rare gravel and rare lenses (<35mm x 4mm) and pockets (<40mm x 25mm) of fine sand. Gravel is subangular and subrounded medium of basalt and dolerite. [CARDIGAN BAY FORMATION]						
	-49.0	18.50m to 19.00m; stiff.						
19.0		19.02m to 19.45m; no recovery.						
	-50.0	19.50m to 19.76m; thinly laminated.						
		19.76m to 19.92m; slightly sandy. Sand is fine.						
		19.92 m to 20.88 m - Firm very dark grey sandy						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

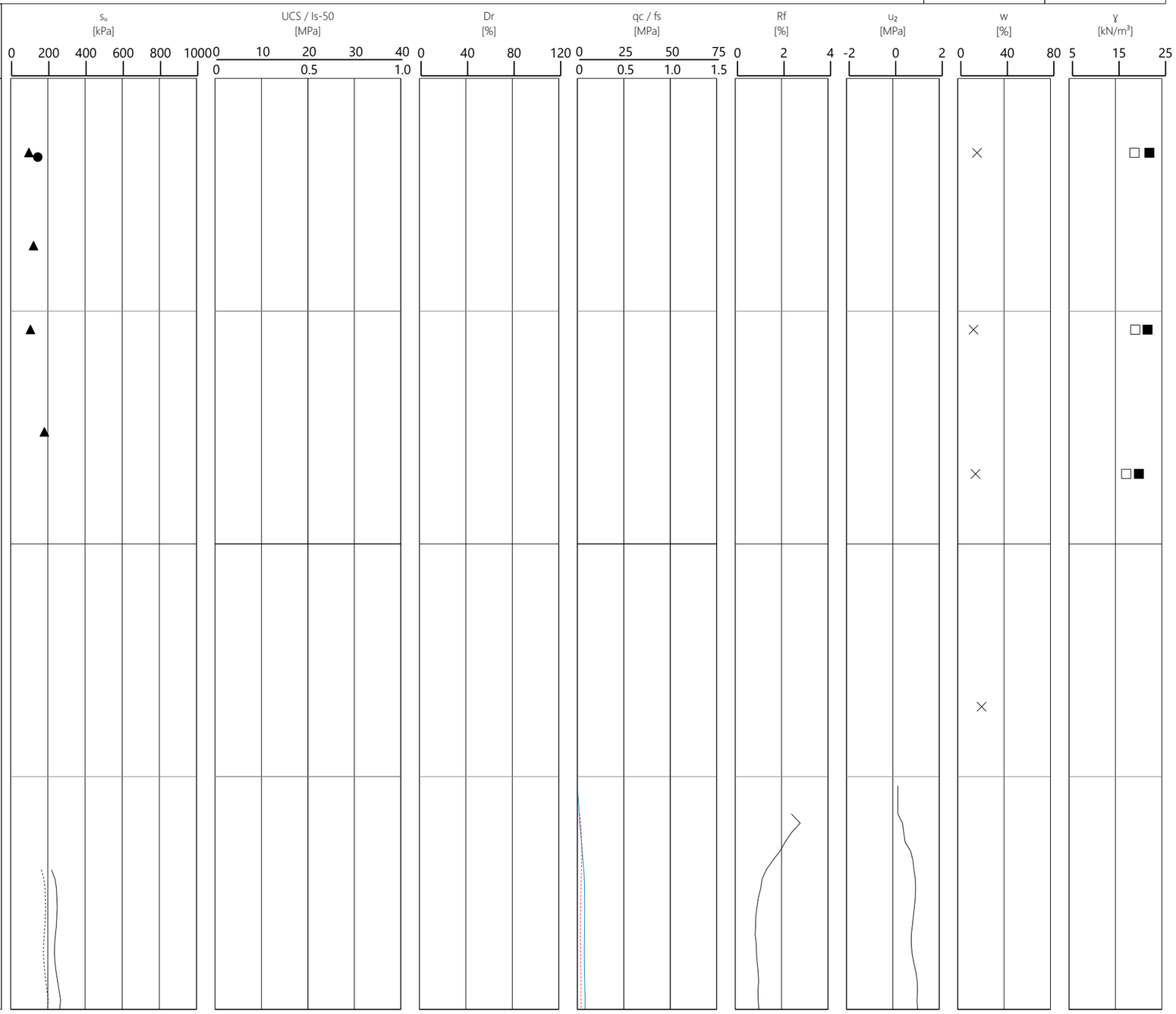
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 11 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		19.92 m to 20.88 m - Firm very dark grey sandy CLAY. Sand is fine. [CARDIGAN BAY FORMATION]						
		20.40m to 20.50m; no recovery.						
	-51.0							
21.0		20.88 m to 26.50 m - Firm very dark grey slightly gravelly slightly sandy CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to rounded predominantly subrounded fine to coarse of basalt, quartz, sandstone and granite. [CARDIGAN BAY FORMATION]						
		21.50m to 22.50m; no recovery.						
	-52.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

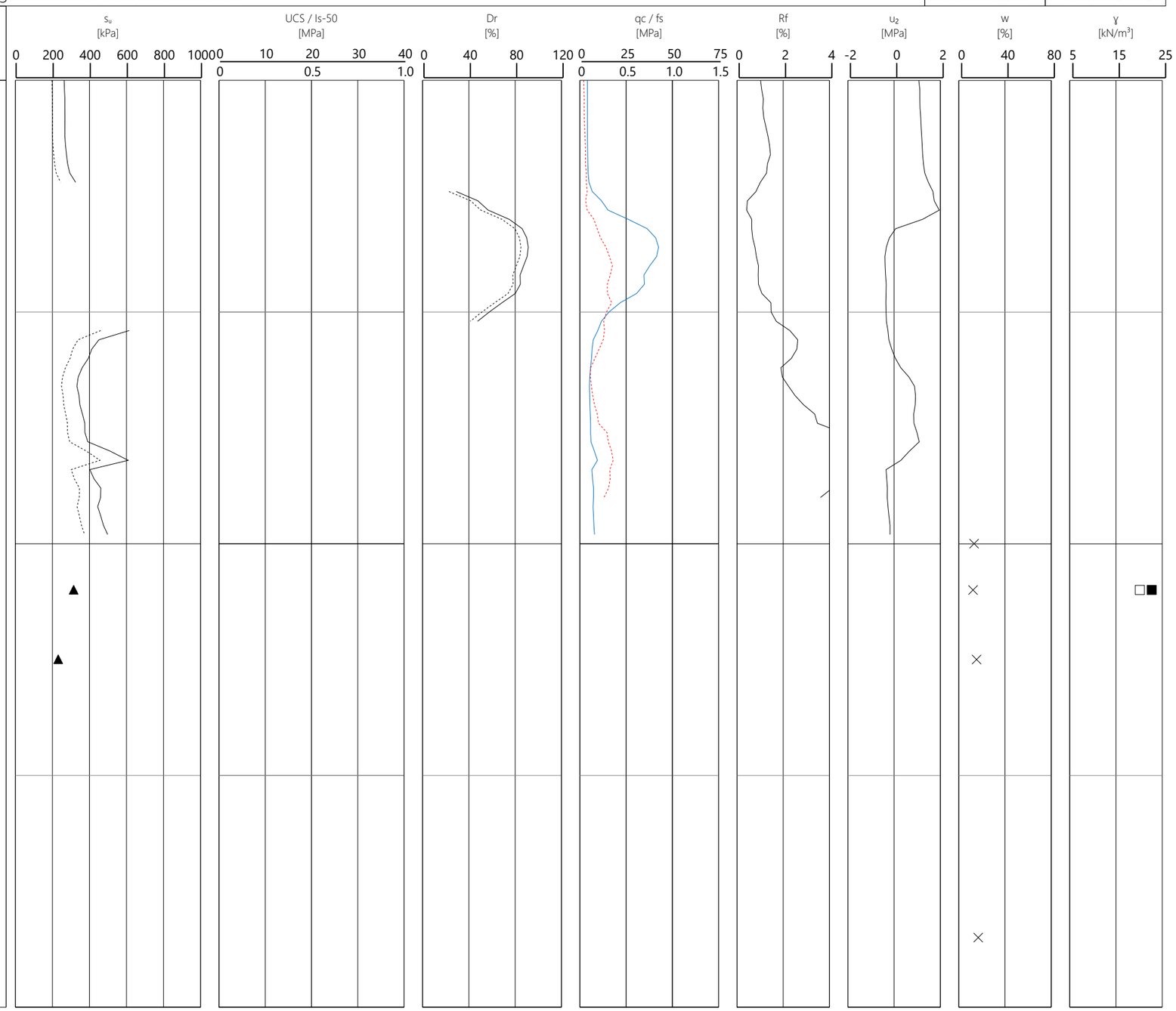
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.43

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	55.50	**BH09**
Fugro Reference	F186642			Seabed Level [m LAT]	-30.50	
Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum	UTM Zone 30	Date	17 06 2022 to 19 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 12 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		20.88 m to 26.50 m - Firm very dark grey slightly gravelly slightly sandy CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to rounded predominantly subrounded fine to coarse of basalt, quartz, sandstone and granite. [CARDIGAN BAY FORMATION]						
		22.24m to 22.52m; medium bed of sand						
	-53.0							
23.0								
	-54.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

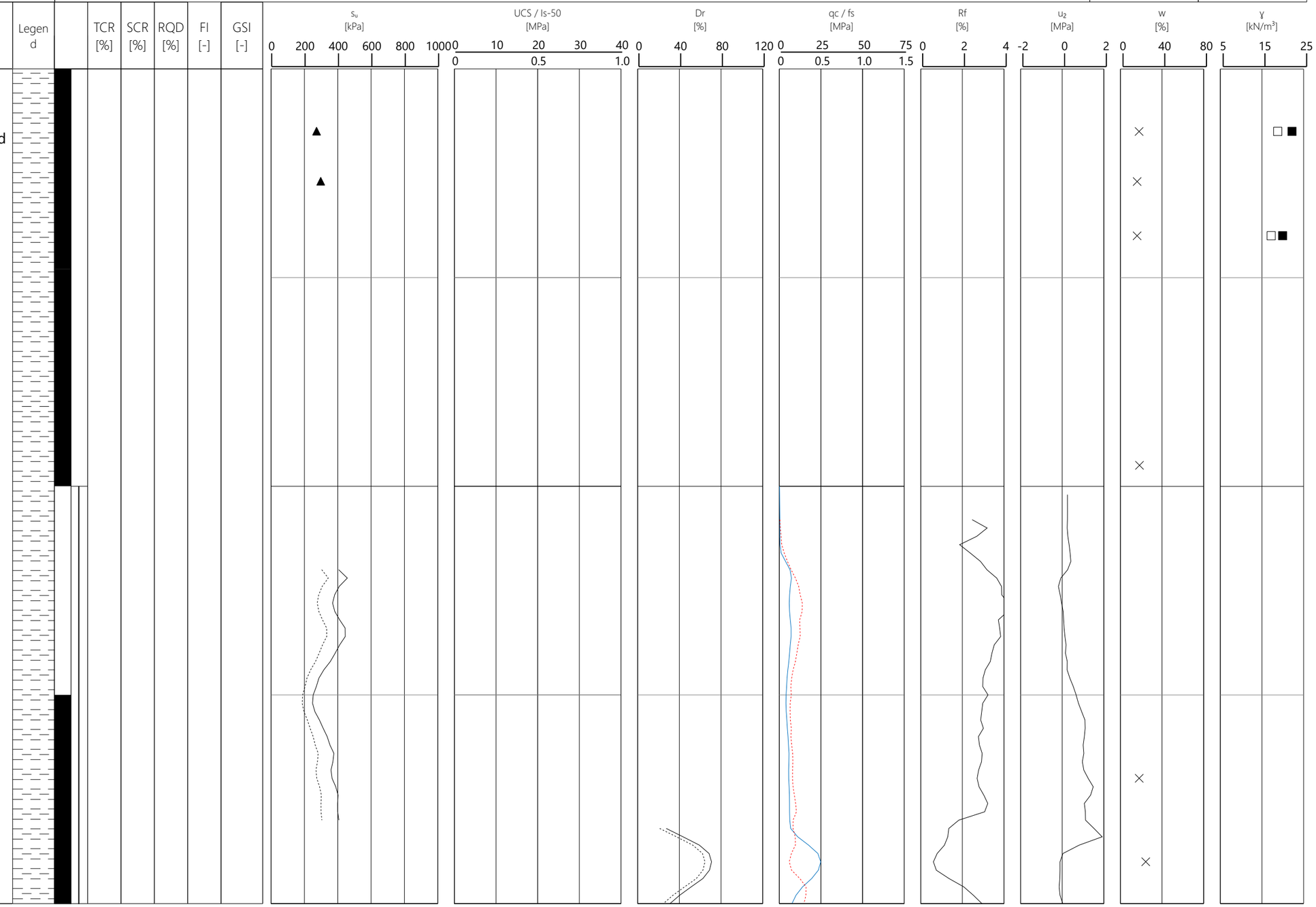
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	55.50	**BH09**
Fugro Reference	F186642			Seabed Level [m LAT]	-30.50	
Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum	UTM Zone 30	Date	17 06 2022 to 19 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 13 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		20.88 m to 26.50 m - Firm very dark grey slightly gravelly slightly sandy CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to rounded predominantly subrounded fine to coarse of basalt, quartz, sandstone and granite. [CARDIGAN BAY FORMATION]						
	55.0							
25.0								
	56.0	25.5m to 25.85m; firm thinly laminated slightly sandy silty clay. Sand is fine.						
		25.82m to 26.00m; thin bed of sand 25.85m to 26.00m; thin bed of dark grey slightly sandy clayey silt. Recovered as very soft.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		20.88 m to 26.50 m - Firm very dark grey slightly gravelly slightly sandy CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to rounded predominantly subrounded fine to coarse of basalt, quartz, sandstone and granite. [CARDIGAN BAY FORMATION] 26.00m to 26.40m; thinly laminated. 26.38m to 26.48m; thin bed of sand. 26.40m to 26.50m; no recovery.						
	-57.0	26.50 m to 28.40 m - Dark grey and grey slightly sandy slightly clayey GRAVEL with with moderate to medium cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. Cobbles are (<80mm x 70mm x 70mm) subangular and subrounded of quartz and basalt. [CARDIGAN BAY FORMATION] 26.80m to 27.00m; no recovery.						
	-27.0			100	0	0		
	-58.0	27.40m to 27.50m; reddish brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of mixed lithologies including quartz, sandstone, basalt and psammite. Recovered as soft (drilling disturbed).						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

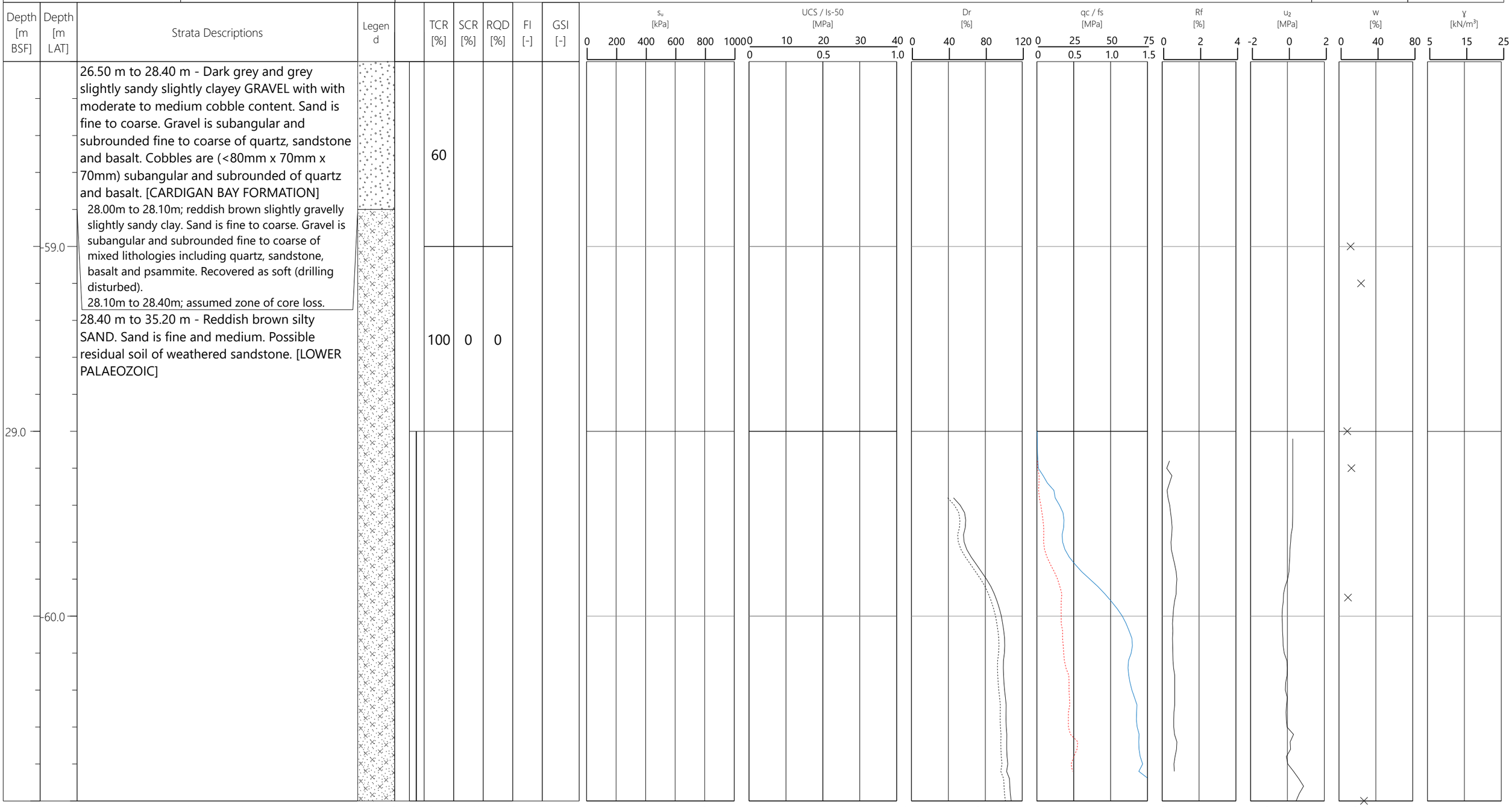
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		26.50 m to 28.40 m - Dark grey and grey slightly sandy slightly clayey GRAVEL with with moderate to medium cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. Cobbles are (<80mm x 70mm x 70mm) subangular and subrounded of quartz and basalt. [CARDIGAN BAY FORMATION]		60				
	-59.0	28.00m to 28.10m; reddish brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of mixed lithologies including quartz, sandstone, basalt and psammite. Recovered as soft (drilling disturbed).						
		28.10m to 28.40m; assumed zone of core loss.						
		28.40 m to 35.20 m - Reddish brown silty SAND. Sand is fine and medium. Possible residual soil of weathered sandstone. [LOWER PALAEOZOIC]		100	0	0		
	-29.0							
	-60.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

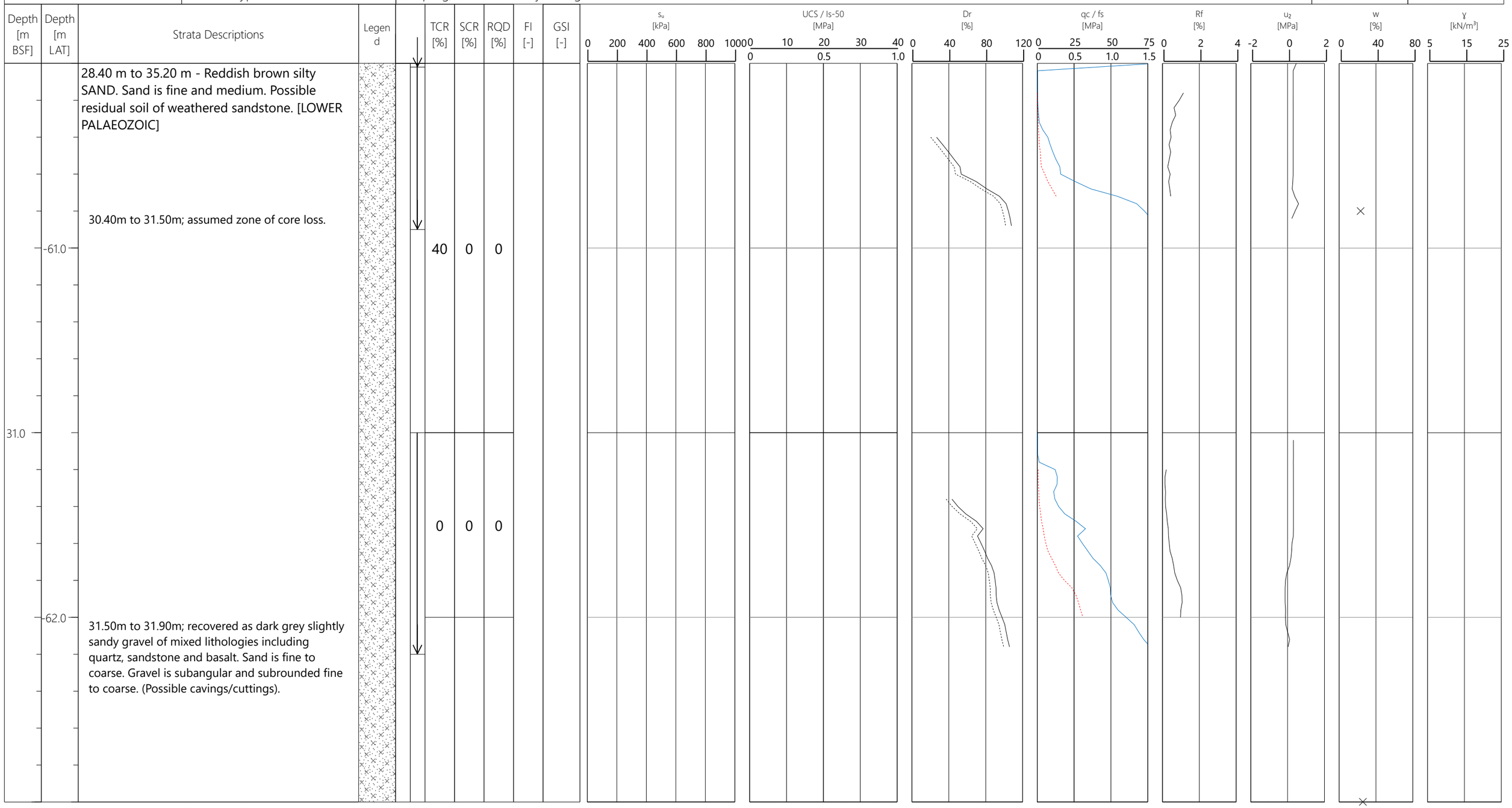
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 16 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		28.40 m to 35.20 m - Reddish brown silty SAND. Sand is fine and medium. Possible residual soil of weathered sandstone. [LOWER PALAEOZOIC]						
		30.40m to 31.50m; assumed zone of core loss.						
	-61.0			40	0	0		
31.0								
		31.50m to 31.90m; recovered as dark grey slightly sandy gravel of mixed lithologies including quartz, sandstone and basalt. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse. (Possible cavings/cuttings).						
	-62.0			0	0	0		



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

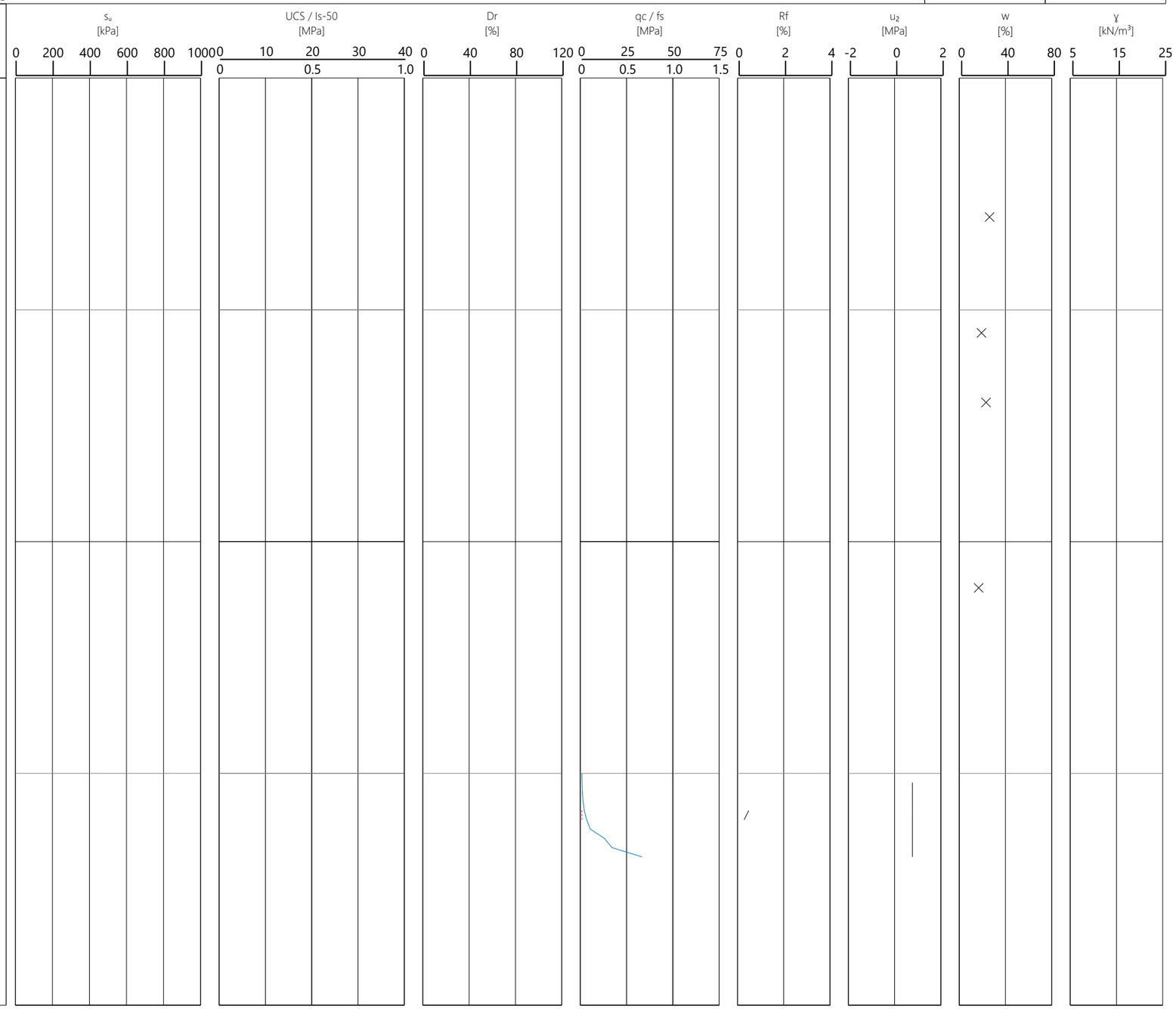
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	55.50	**BH09**
Fugro Reference	F186642			Seabed Level [m LAT]	-30.50	
Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum	UTM Zone 30	Date	17 06 2022 to 19 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 17 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		28.40 m to 35.20 m - Reddish brown silty SAND. Sand is fine and medium. Possible residual soil of weathered sandstone. [LOWER PALAEOZOIC]						
		32.30m to 32.45m; no recovery.						
	-63.0							
		32.80m to 33.00m; no recovery.						
	-33.0							
		33.10m to 33.50m; no recovery.						
	-64.0							
		33.50m to 34.50m; assumed zone of core loss.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

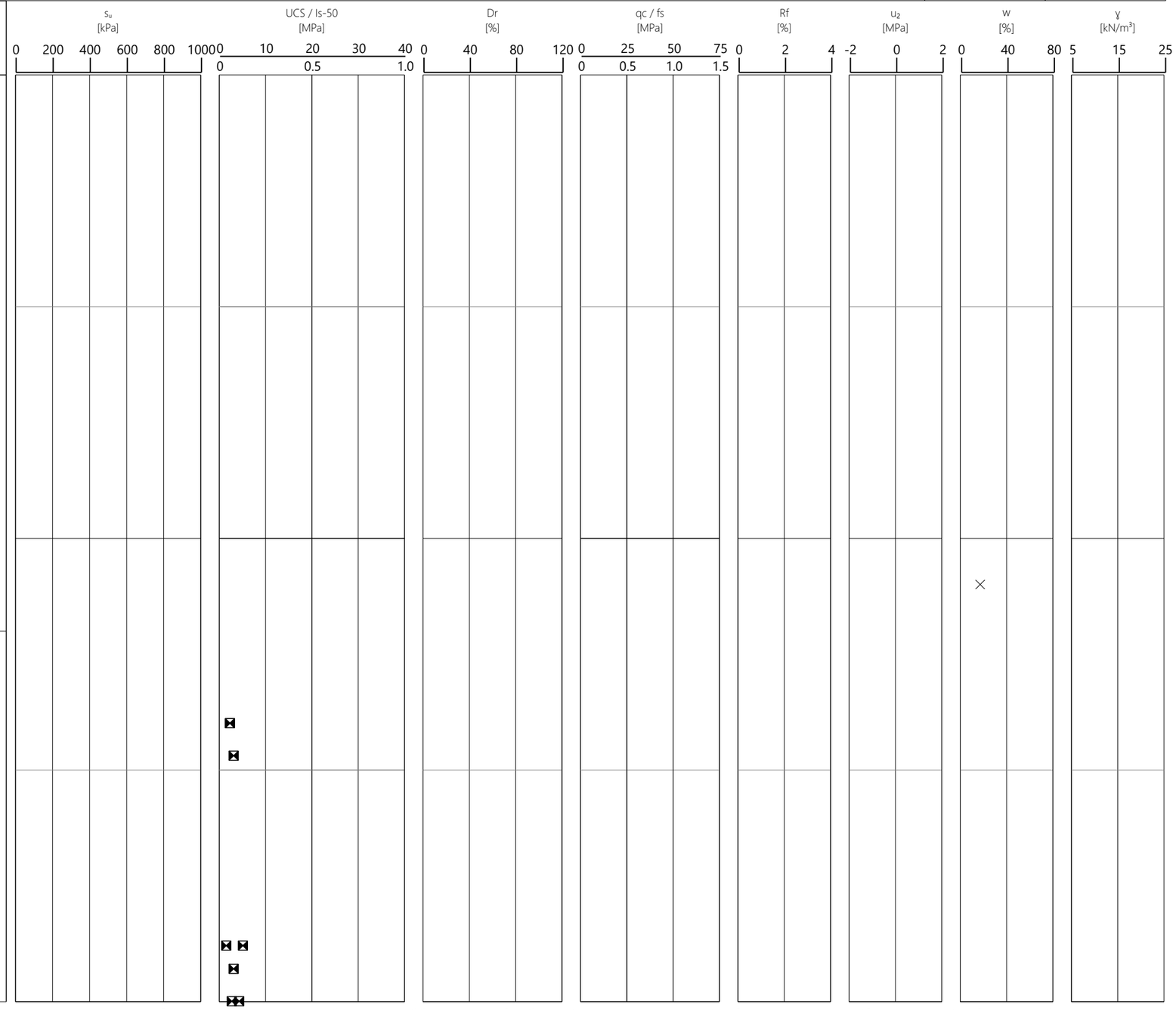
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 18 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		28.40 m to 35.20 m - Reddish brown silty SAND. Sand is fine and medium. Possible residual soil of weathered sandstone. [LOWER PALAEOZOIC]		0	0	0		
	-65.0	34.50m to 34.75m; recovered as dark grey sandy gravel of mixed lithologies including basalt, psammite and quartz. Sand is fine. Gravel is subangular and subrounded fine and medium. (Possible cavings/cuttings). 34.75m to 35.00m; no recovery.						
	-35.0	35.20 m to 36.62 m - Very weak thinly cross laminated brownish red fine grained SANDSTONE. Distinctly weathered. Fractures are 5 to 15 degrees very closely to medium spaced planar smooth partially open with clay infill (< 1mm). GSI = 30-35[LOWER PALAEOZOIC]		80	60	60	7	
	-66.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 19 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		35.20 m to 36.62 m - Very weak thinly cross laminated brownish red fine grained SANDSTONE. Distinctly weathered. Fractures are 5 to 15 degrees very closely to medium spaced planar smooth partially open with clay infill (< 1mm). GSI = 30-35[LOWER PALAEOZOIC]						
	-67.0							
		36.62 m to 41.74 m - Weak thinly laminated brownish red medium grained SANDSTONE. Distinctly weathered locally completely weathered to a residual soil. Fractures are 0 to 15 degrees extremely closely to widely spaced planar locally undulating smooth locally rough partially open and open with sandy clay infill (< 2mm). Fractures are 20 to 30 degrees very closely to medium spaced planar smooth locally rough partially open with sandy clay infill (< 1mm). GSI = 30-35 [LOWER PALAEOZOIC]		83	67	33		
37.0								
	-68.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 20 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		36.62 m to 41.74 m - Weak thinly laminated brownish red medium grained SANDSTONE. Distinctly weathered locally completely weathered to a residual soil. Fractures are 0 to 15 degrees extremely closely to widely spaced planar locally undulating smooth locally rough partially open and open with sandy clay infill (< 2mm). Fractures are 20 to 30 degrees very closely to medium spaced planar smooth locally rough partially open with sandy clay infill (< 1mm). GSI = 30-35 [LOWER PALAEOZOIC]		100	100	91		
	69.0							30-35
				100	100	66	5	
	70.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m^3]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

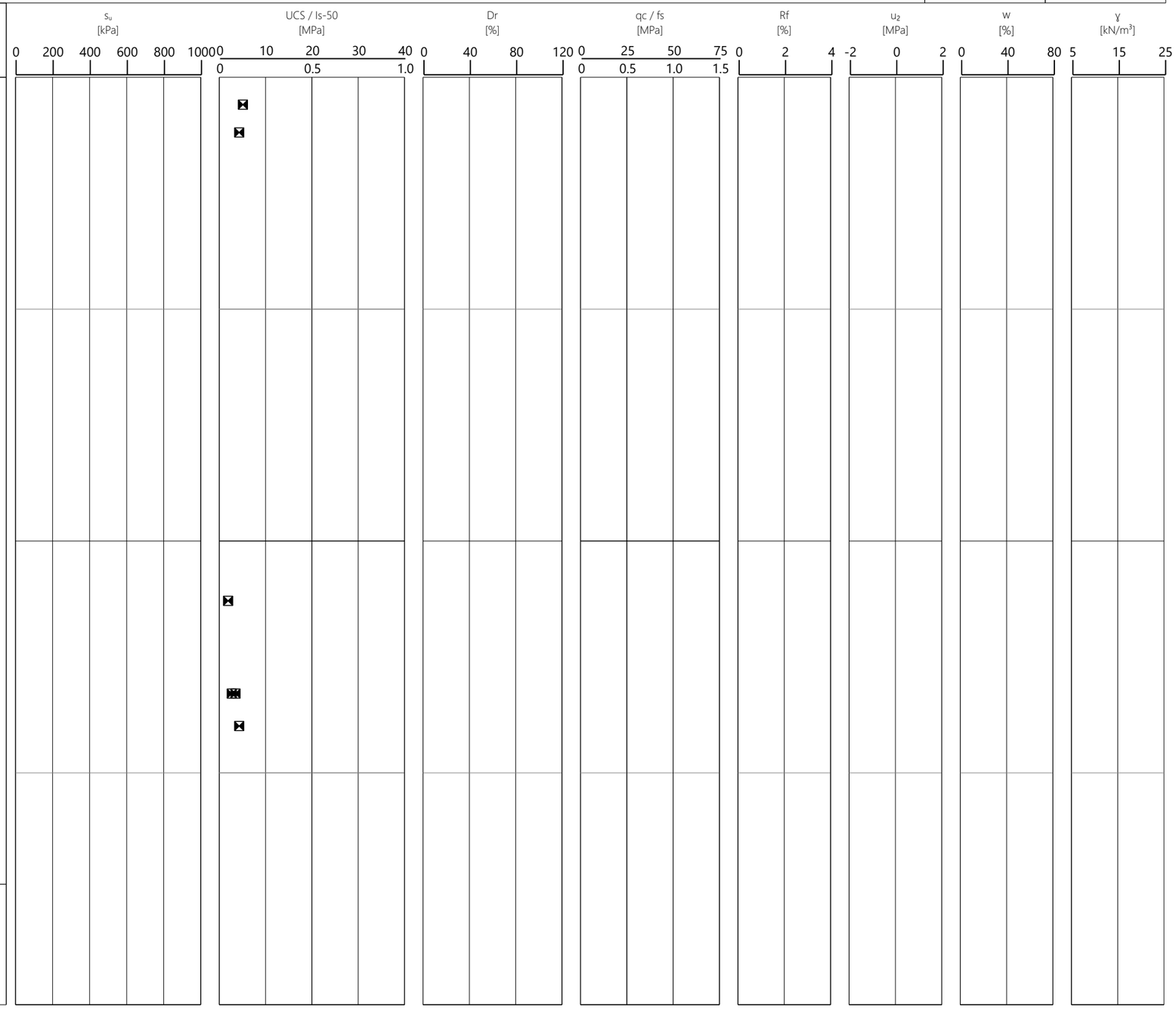
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 21 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		36.62 m to 41.74 m - Weak thinly laminated brownish red medium grained SANDSTONE. Distinctly weathered locally completely weathered to a residual soil. Fractures are 0 to 15 degrees extremely closely to widely spaced planar locally undulating smooth locally rough partially open and open with sandy clay infill (< 2mm). Fractures are 20 to 30 degrees very closely to medium spaced planar smooth locally rough partially open with sandy clay infill (< 1mm). GSI = 30-35 [LOWER PALAEOZOIC]		100	100	96		
	-71.0							
41.0		40.92m to 41.13m; recovered as silty fine sand. Residual soil.		100	79	75	3	
	-72.0							
		41.57m to 41.74m; recovered as silty fine sand. Residual soil.						
		41.74 m to 43.45 m - Very weak thinly laminated brownish red fine grained SANDSTONE. Partially weathered. Fractures are 5 to 15 degrees closely and medium spaced planar locally undulating smooth partially open						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

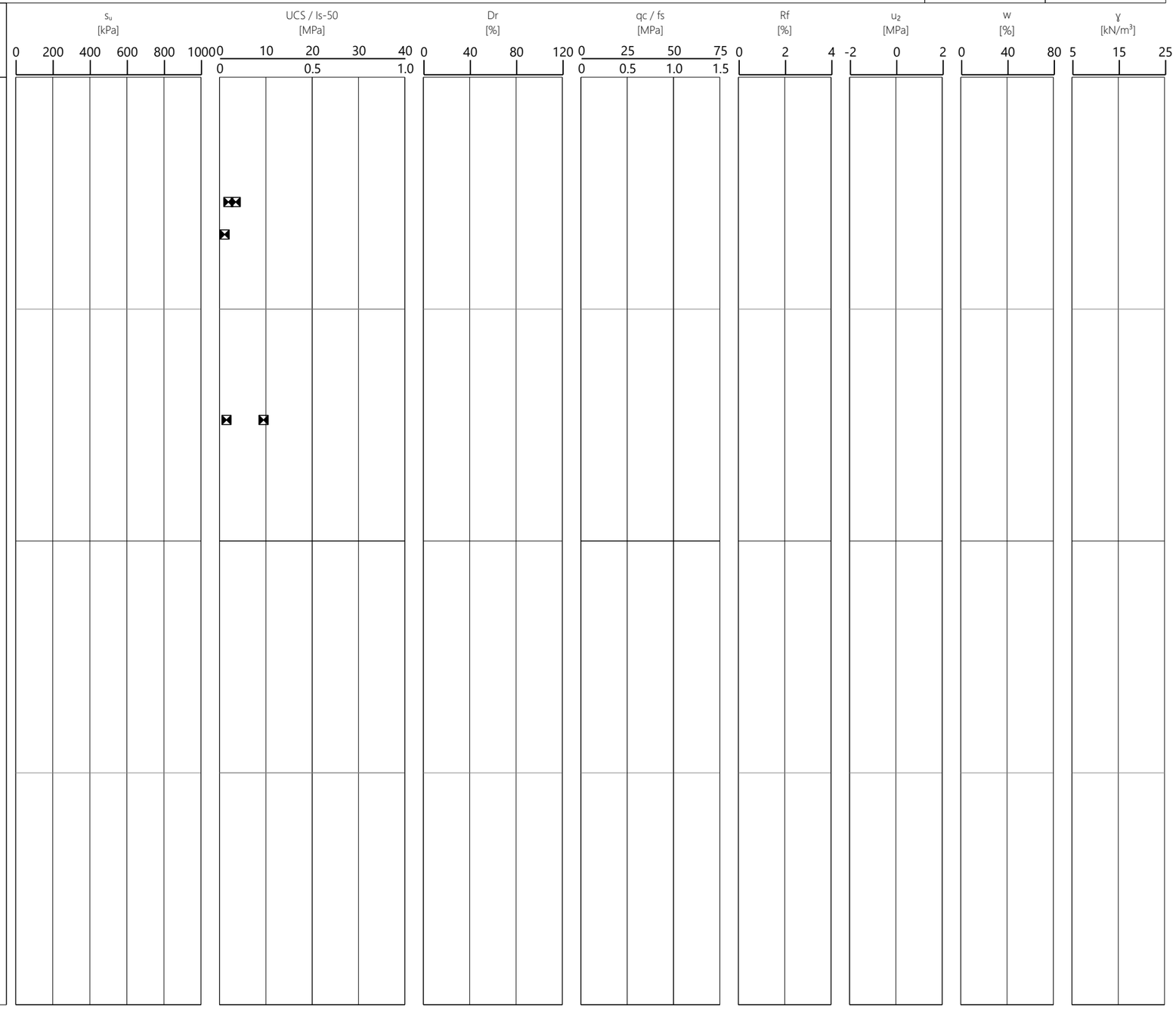
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 22 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.74 m to 43.45 m - Very weak thinly laminated brownish red fine grained SANDSTONE. Partially weathered. Fractures are 5 to 15 degrees closely and medium spaced planar locally undulating smooth partially open locally open with sandy clay infill (< 2mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	83	83	3	
43.0	73.0							
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	83	76		
	74.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

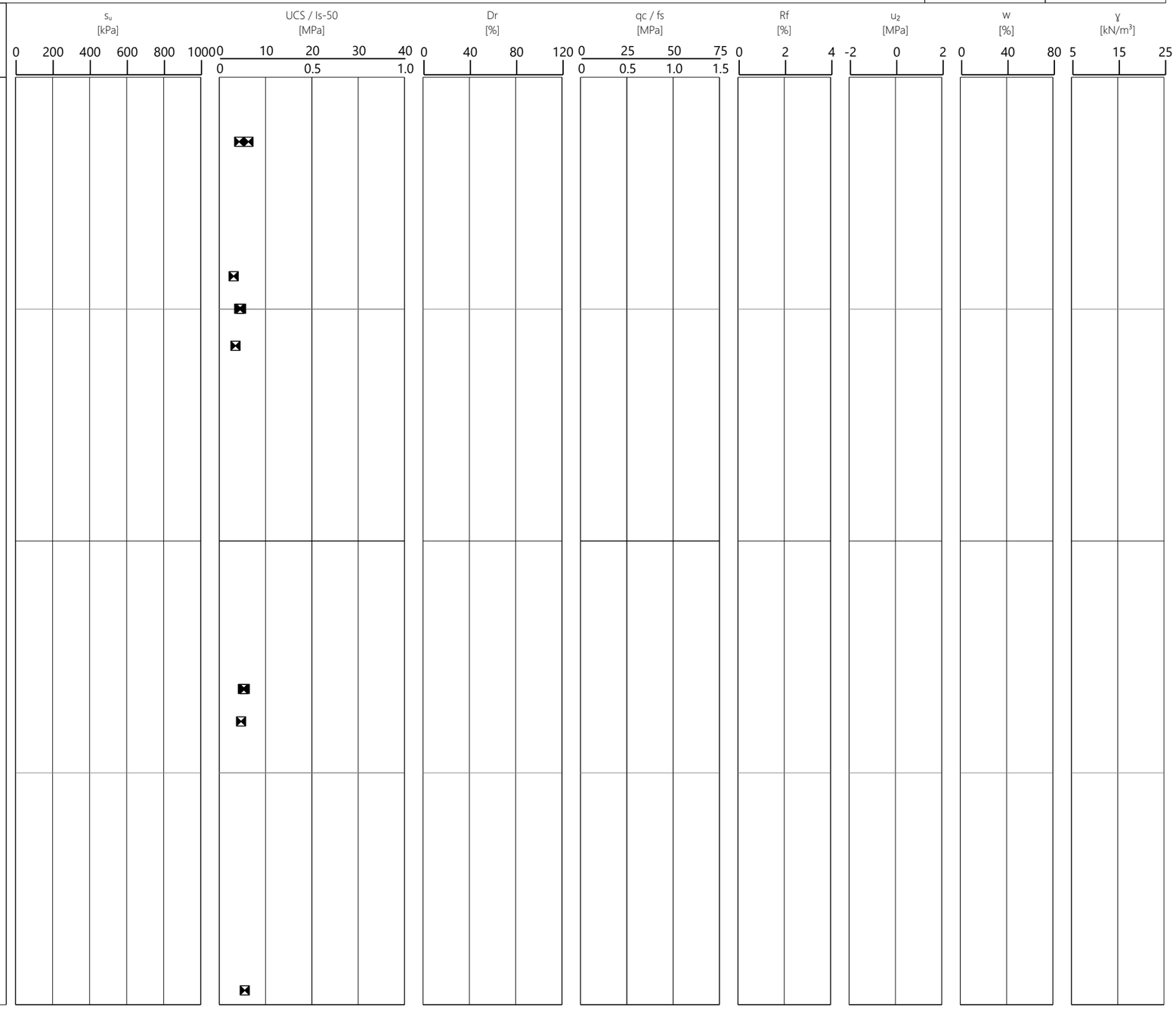
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 23 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	69		
45.0	-75.0							
		45.45m to 45.50m; assumed zone of core loss.		95	95	95	4	
	-76.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 24 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	78		
	77.0							
47.0				100	100	81	7	
	78.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 25 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	78		35-40
	-79.0							
49.0				100	100	82	2	
	-80.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m^3]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

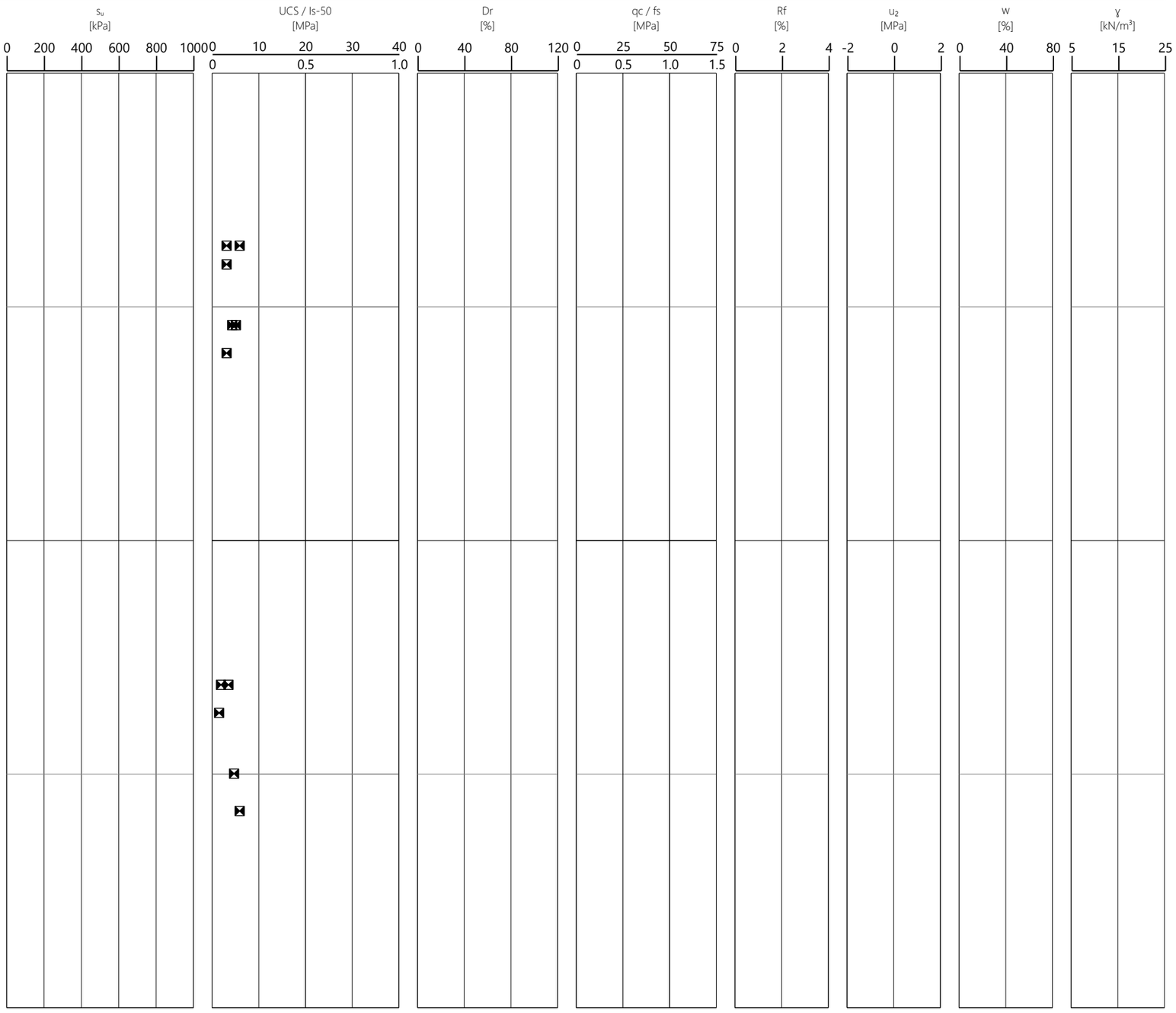
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 26 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	100		
	-81.0							
51.0				100	100	90	6	
	-82.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

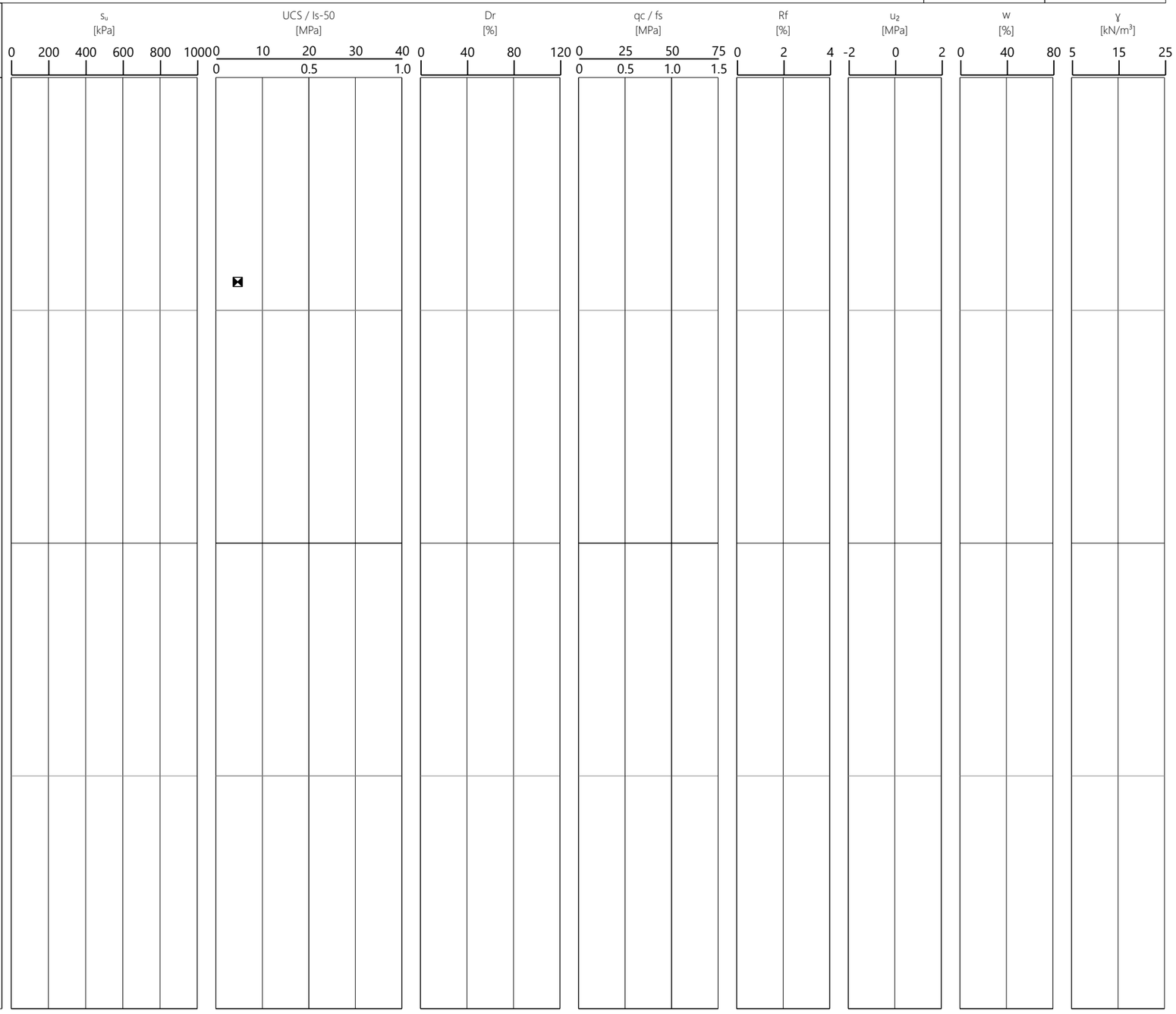
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 27 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	81		
53.0	-83.0			100	100	62	10	
	-84.0						6	



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (ɣ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	55.50	**BH09**
	Fugro Reference	F186642		Seabed Level [m LAT]	-30.50	
	Coordinates	300261.50 mE 5853958.52 mN	Coordinate Datum / UTM Zone 30	Date	17 06 2022 to 19 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 28 of 28

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		43.45 m to 54.59 m - Weak brownish red medium grained SANDSTONE. Partially weathered. Fractures are 0 to 15 degrees closely and medium spaced planar locally undulating partly open and open with sandy clay infill (< 2mm). Fractures are 25 to 30 degrees closely and medium spaced planar smooth partly open with sandy clay infill (< 1mm). GSI = 35-40. [LOWER PALAEOZOIC]		100	100	100		
	-85.0							
		54.59 m to 55.50 m - Extremely weak friable brownish red medium grained SANDSTONE. Distinctly weathered. GSI = 10-15. [LOWER PALAEOZOIC]						
55.0				100	95	87	0	10-15
	-86.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 1 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 2 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 3 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH09**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 4 of 28
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH09**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 5 of 28
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH09**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 6 of 28
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 7 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									13		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 8 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH09**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 9 of 28
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 10 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 11 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 12 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 13 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 14 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 15 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 16 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									31		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 17 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 18 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
35.20	BF	0		PO	Pl	Sm		Clay infill (< 1mm).	35	0 °	
35.33 - 35.35	BF	10		PO	Un	Sm		Clay infill (< 1mm).		10 °	
35.67 - 35.69	BF	10		PO	Pl	Sm		Clay infill (< 1mm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 19 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
36.12 - 36.14	BF	10		T	Pl	Sm				10 °	
36.18 - 36.20	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
36.33 - 36.37	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
36.36 - 36.40	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm). Terminating against joint.		25 °	
36.42 - 36.43	BF	10		PO	Un	Sm		Sandy clay infill (< 1mm). Further disturbed by drilling.		10 °	
36.49 - 36.51	BF	5		MW	Un	Sm		Sandy clay infill (< 4mm). Further disturbed by drilling.		5 °	
36.54 - 36.57	BF	10		MW	Sp	Ro		Sandy clay infill (< 4mm). Further disturbed by drilling.		10 °	
36.63	BF	0		PO	Un	Sm		Sandy clay infill (< 1mm).		0 °	
36.75 - 36.76	BF	5		PO	Sp	Sm		Sandy clay infill (< 1mm).		5 °	
36.76 - 36.80	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
36.78 - 36.82	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
36.88 - 36.89	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
37.00 - 37.25	NI							Non intact drilling induced recovered as very soft sandy clay.	37		
37.61 - 37.62	BF	10		T	Pl	Sm				10 °	
37.70 - 37.71	BF	10		T	Pl	Sm				10 °	
37.89 - 37.91	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH09**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 20 of 28
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
38.02 - 38.18	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
38.05 - 38.07	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
38.36 - 38.38	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
38.53 - 38.57	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
38.64 - 38.65	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
38.80 - 38.81	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
									39		
39.19 - 39.20	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
39.31 - 39.33	J	15		O	Pl	Sm		Sandy clay infill (< 2mm).		15 °	
39.43 - 39.45	J	15		O	Un	Sm		Sandy clay infill (< 2mm).		15 °	
39.73 - 39.74	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
39.87 - 39.88	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	
39.99 - 40.00	BF	10		PO	Pl	Sm		Sandy clay infill (< 1mm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 21 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
40.21 - 40.22	BF	10		O	Pl	Sm		Sandy clay infill (< 2mm).		10 °	
40.44 - 40.46	J	20		O	Un	Sm		Sandy clay infill (< 2mm).		20 °	
									41		
41.92 - 41.93	BF	10		PO	Pl	Ro		Sandy clay infill (< 1mm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 22 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
42.11	BF	5		PO	Pl	Sm		Sandy clay infill (< 1mm).		5 °	
42.27	BF	5		PO	Un	Sm		Sandy clay infill (< 1mm).		5 °	
42.87	BF	0		PO	Pl	Ro		Sandy clay infill (< 1mm).		0 °	
									43		
43.11 - 43.12	BF	10		PO	Pl	Ro		Sandy clay infill (< 1mm).		10 °	
43.52 - 43.78	J	75		PO	Pl	Sm		Sandy clay infill (< 1mm).		75 °	
43.80 - 43.81	BF	5		PO	Pl	Sm		Sandy clay infill (< 1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 23 of 28
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
44.02 - 44.23	J	60		O	Un	Sm		Sandy clay infill (< 2mm).		60 °	
44.14 - 44.15	BF	5		O	Un	Sm		Sandy clay infill (< 2mm).		5 °	
44.31 - 44.34	BF	5		O	Un	Ro		Sandy clay infill (< 2mm).		5 °	
44.41 - 44.44	BF	5		O	Un	Ro		Sandy clay infill (< 2mm).		5 °	
44.65 - 44.68	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
									45		
45.09 - 45.11	BF	30		PO	Un	Ro		Sandy clay infill (< 1mm).		30 °	
45.31 - 45.32	BF	5		PO	Un	Sm		Sandy clay infill (< 1mm).		5 °	
45.58	BF	0		O	Un	Sm		Sandy clay infill (< 2mm).		0 °	
45.80 - 45.83	J	30		PO	Pl	Sm		Sandy clayt infill (< 1mm).		30 °	
45.95 - 45.98	J	30		O	Un	Sm		Sandy clay infill (< 2mm).		30 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 24 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
46.44 - 46.47	J	30		O	Pl	Sm		Sandy clay infill (< 2mm).		30 °	
46.70 - 46.73	J	30		O	Pl	Sm		Sandy clay infill (< 2mm).		30 °	
46.98 - 47.01	J	30		O	Pl	Sm		Sandy clay infill (< 2mm).	47	30 °	
47.08 - 47.11	J	30		O	Pl	Sm		Sandy clay infill (< 2mm).		30 °	
47.22 - 47.25	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
47.40	BF	0		PO	Un	Ro		Sandy clay infill (< 1mm).		0 °	
47.54 - 47.57	J	30		O	Pl	Ro		Sandy clay infill (< 2mm).		30 °	
47.83 - 47.86	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
47.94 - 47.97	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 25 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
48.03 - 48.06	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
48.09 - 48.12	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
48.20 - 48.23	J	30		PO	Pl	Sm		Sandy clay infill (< 1mm).		30 °	
48.65 - 48.67	BF	5		PO	Un	Sm		Sandy clay infill (< 1mm).		5 °	
48.94 - 48.96	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).	49	15 °	
49.21 - 49.23	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	
49.28 - 49.32	BF	10		MW	Un	Ro		Sandy clay infill (< 4mm).		10 °	
49.41 - 49.43	J	15		O	Pl	Sm		Sandy clay infill (< 2mm).		15 °	
49.61 - 49.63	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	
49.88 - 49.90	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 26 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
50.01 - 50.03	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	
50.19 - 50.21	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	
50.36 - 50.38	J	15		PO	Pl	Sm		Sandy clay infill (< 1mm).		15 °	
50.53 - 50.56	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm).		25 °	
50.65 - 50.68	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm).		25 °	
50.84 - 50.87	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm).		25 °	
51.00 - 51.03	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm).	51	25 °	
51.21 - 51.24	J	25		PO	Pl	Sm		Sandy clay infill (< 1mm).		25 °	
51.29 - 51.32	J	25		T	Sp	Sm				25 °	
51.55 - 51.58	J	25		PO	Pl	Sm				25 °	
51.63 - 51.66	J	25		PO	Pl	Sm				25 °	
51.95 - 51.97	J	25		PO	Pl	Sm				25 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 27 of 28
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
52.12 - 52.14	J	25		PO	Pl	Sm				25 °	
52.25 - 52.29	J	25		PO	Pl	Sm				25 °	
52.44 - 52.46	J	25		O	Pl	Sm				25 °	
52.59 - 52.61	J	25		O	Pl	Sm				25 °	
52.66 - 52.68	J	25		PO	Pl	Sm				25 °	
52.78 - 52.81	J	25		PO	Pl	Sm				25 °	
52.88 - 52.89	BF	5		PO	Pl	Sm				5 °	
52.95 - 52.97	J	25		O	Pl	Sm				25 °	
									53		
53.09 - 53.11	J	25		PO	Pl	Sm				25 °	
53.17 - 53.18	BF	0		O	Pl	Sm				0 °	
53.32 - 53.35	J	25		PO	Pl	Sm				25 °	
53.44 - 53.47	J	25		O	Pl	Sm				25 °	
53.61 - 53.62	BF	0		O	Pl	Sm				0 °	
53.83 - 53.85	J	20		PO	Pl	Sm				20 °	
54.00 - 54.02	BF	10		PO	Pl	Sm				10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum) -30.50	Sheet 28 of 28	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
54.18 - 54.20	BF	10		PO	Pl	Sm				10 °	
54.58 - 54.59	BF	0		PO	Pl	Sm				0 °	
55.45 - 55.50	NI							Non intact drilling induced recovered as clayey fine sand.	55		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH09**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300261.50 N5853958.52	Ground Elevation (m Datum)	-30.50	Sheet 1 of 1
	Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	26.50	RO	17 06 2022	18 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB, CH, KH, JG	TC/FS	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 45.70m; Cantilever to LAT = 15.20m; LAT to Mud = 30.50m 3. All depths refer to depth below seabed level.
26.50	55.50	RORC	18 06 2022	19 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB, CH, KH, JG	TC/FS	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
17 06 2022	07:00	0.00	0.00		
17 06 2022	19:00	1.00	1.00		
18 06 2022	07:00	13.00	13.00		
18 06 2022	19:00	26.50	25.50		
19 06 2022	06:45	34.50	34.50		
19 06 2022	19:00	55.50	54.50		

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
27.00	27.50	W	100	Grey	00:04
27.50	28.50	W	100	Grey	00:08
28.50	29.00	W	100	Grey	00:05
30.00	31.00	W	100	Grey	00:08
31.00	31.50	W	0		00:03
33.50	34.50	W	0		00:04
35.00	36.00	PB	0		00:06
36.00	37.50	PB	0		00:07
37.50	38.50	PB	0		00:05
38.50	39.50	PB	0		00:05
39.50	40.50	PB	0		00:06
40.50	41.50	PB	0		00:05
41.50	42.50	PB	0		00:05
42.50	43.50	PB	0		00:06
43.50	44.50	PB	0		00:05
44.50	45.50	PB	0		00:05
45.50	46.50	PB	0		00:04
46.50	47.50	PB	0		00:04
47.50	48.50	PB	0		00:04
48.50	49.50	PB	0		00:04
49.50	50.50	PB	0		00:05
50.50	51.50	PB	0		00:04
51.50	52.50	PB	0		00:04
52.50	53.50	PB	0		00:04
53.50	54.50	PB	0		00:05
54.50	55.50	PB	0		00:05

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
27.00	27.50	102
27.50	28.50	102
28.50	29.00	102
30.00	31.00	102
31.00	31.50	102
33.50	34.50	102
35.00	36.00	102
36.00	37.50	102
37.50	38.50	102
38.50	39.50	102
39.50	40.50	102
40.50	41.50	102
41.50	42.50	102
42.50	43.50	102
43.50	44.50	102
44.50	45.50	102
45.50	46.50	102
46.50	47.50	102
47.50	48.50	102
48.50	49.50	102
49.50	50.50	102
50.50	51.50	102
51.50	52.50	102
52.50	53.50	102
53.50	54.50	102
54.50	55.50	102

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.00	178	2.00	178
55.50	146	55.50	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	55.50	Arisings	20 06 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	02 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 1 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 0.50 m - Yellowish brown slightly gravelly coarse SAND. Gravel is subangular and subrounded fine and medium of quartz. Occasional shell fragments (<20mm) [HOLOCENE DEPOSITS]						
	-33.0	0.50 m to 0.95 m - NO RECOVERY.						
1.0		0.95 m to 6.00 m - Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND. Gravel is subangular to rounded fine and medium of mixed lithologies including quartz, basalt, psammite and siltstone. Occasional shell fragments (>20mm) [WESTERN IRISH SEA FORMATION?]						
	-34.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

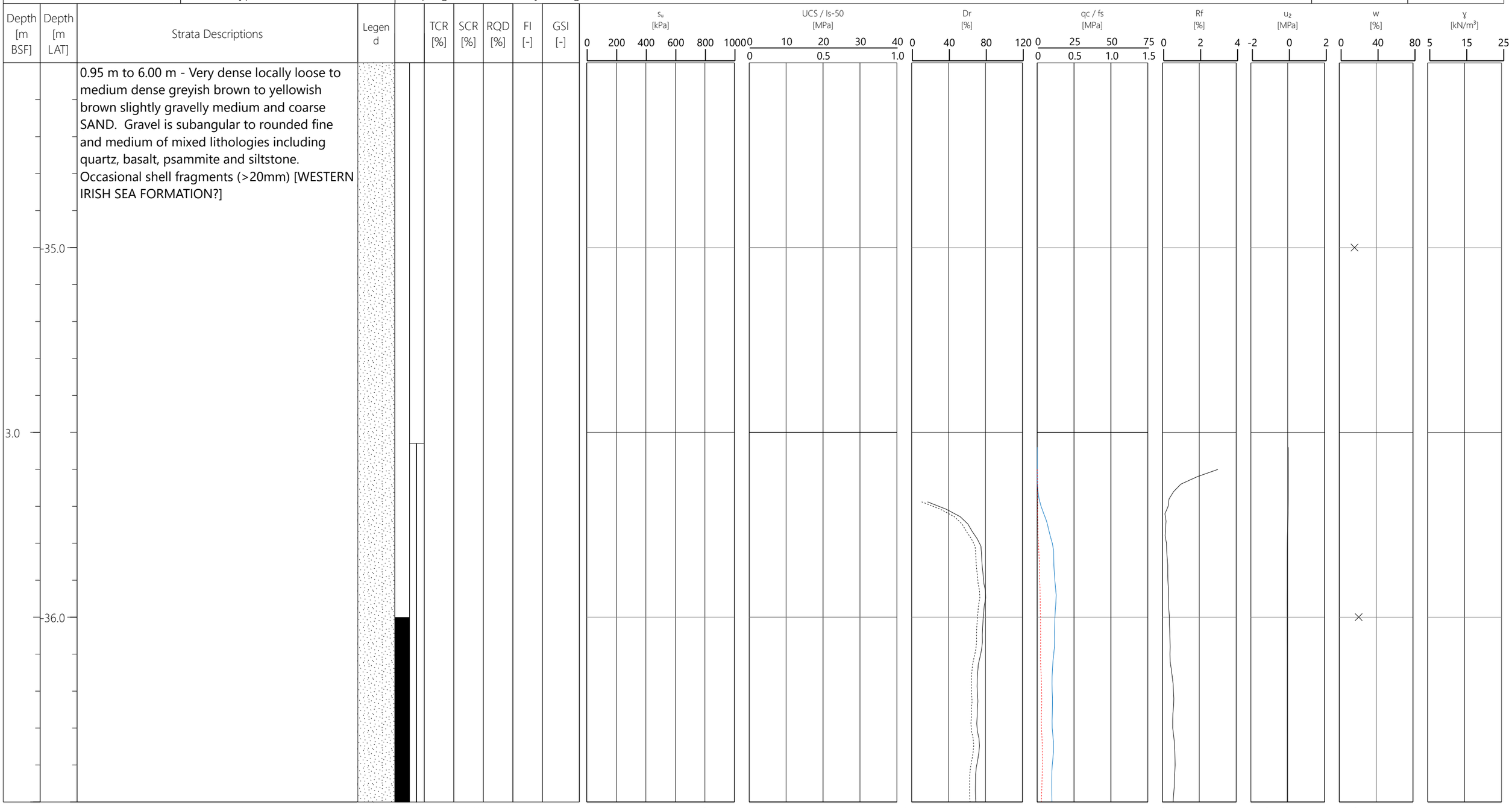
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.90

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.95 m to 6.00 m - Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND. Gravel is subangular to rounded fine and medium of mixed lithologies including quartz, basalt, psammite and siltstone. Occasional shell fragments (>20mm) [WESTERN IRISH SEA FORMATION?]						
3.0	35.0							
	36.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

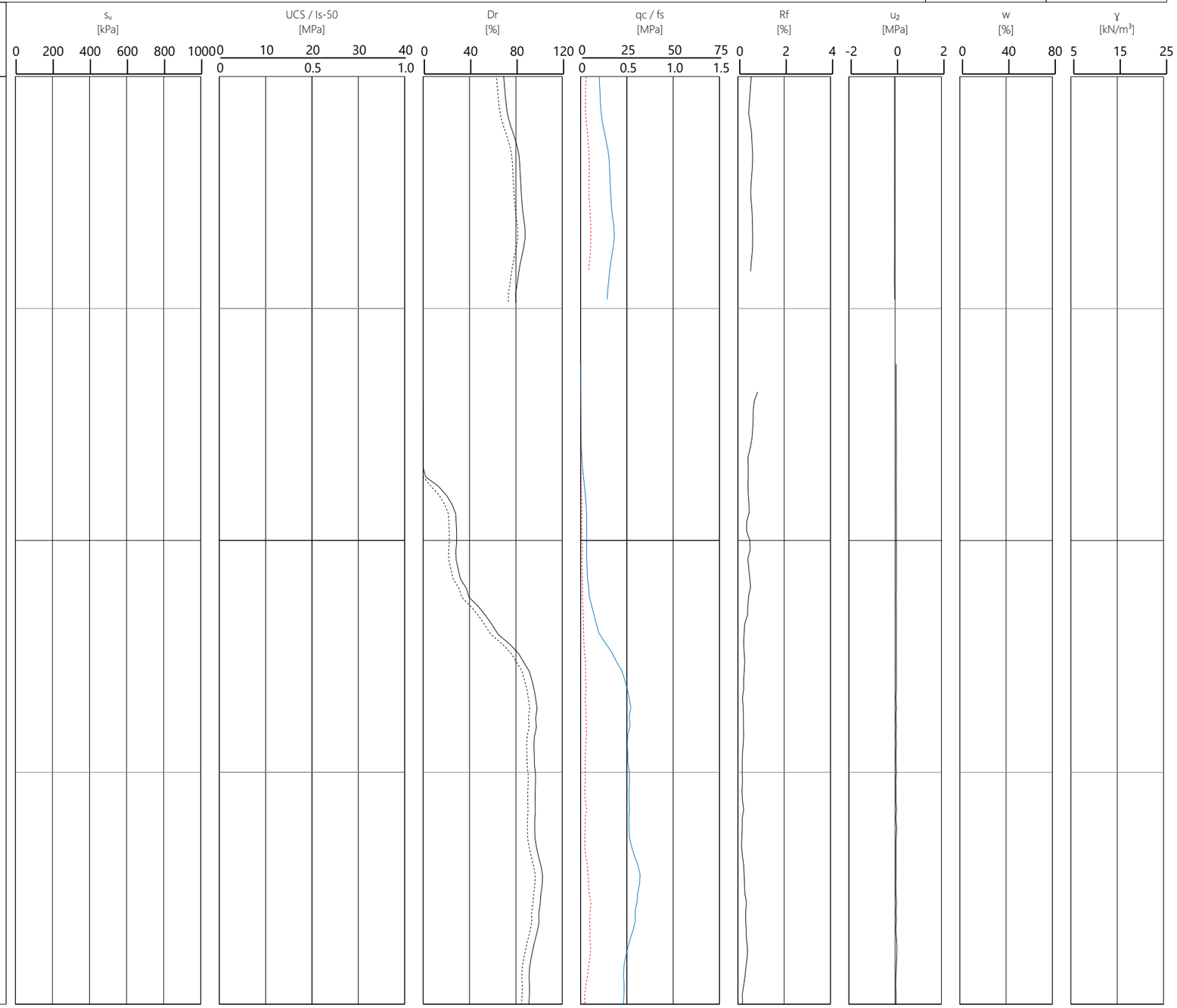
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.95 m to 6.00 m - Very dense locally loose to medium dense greyish brown to yellowish brown slightly gravelly medium and coarse SAND. Gravel is subangular to rounded fine and medium of mixed lithologies including quartz, basalt, psammite and siltstone. Occasional shell fragments (>20mm) [WESTERN IRISH SEA FORMATION?]						
	-37.0							
5.0		5.00m to 5.15m; with a thin bed of black to greyish brown sandy gravel. Gravel is subangular to rounded fine and medium of mixed lithologies including siltstone, quartz, basalt and sandstone.						
	-38.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

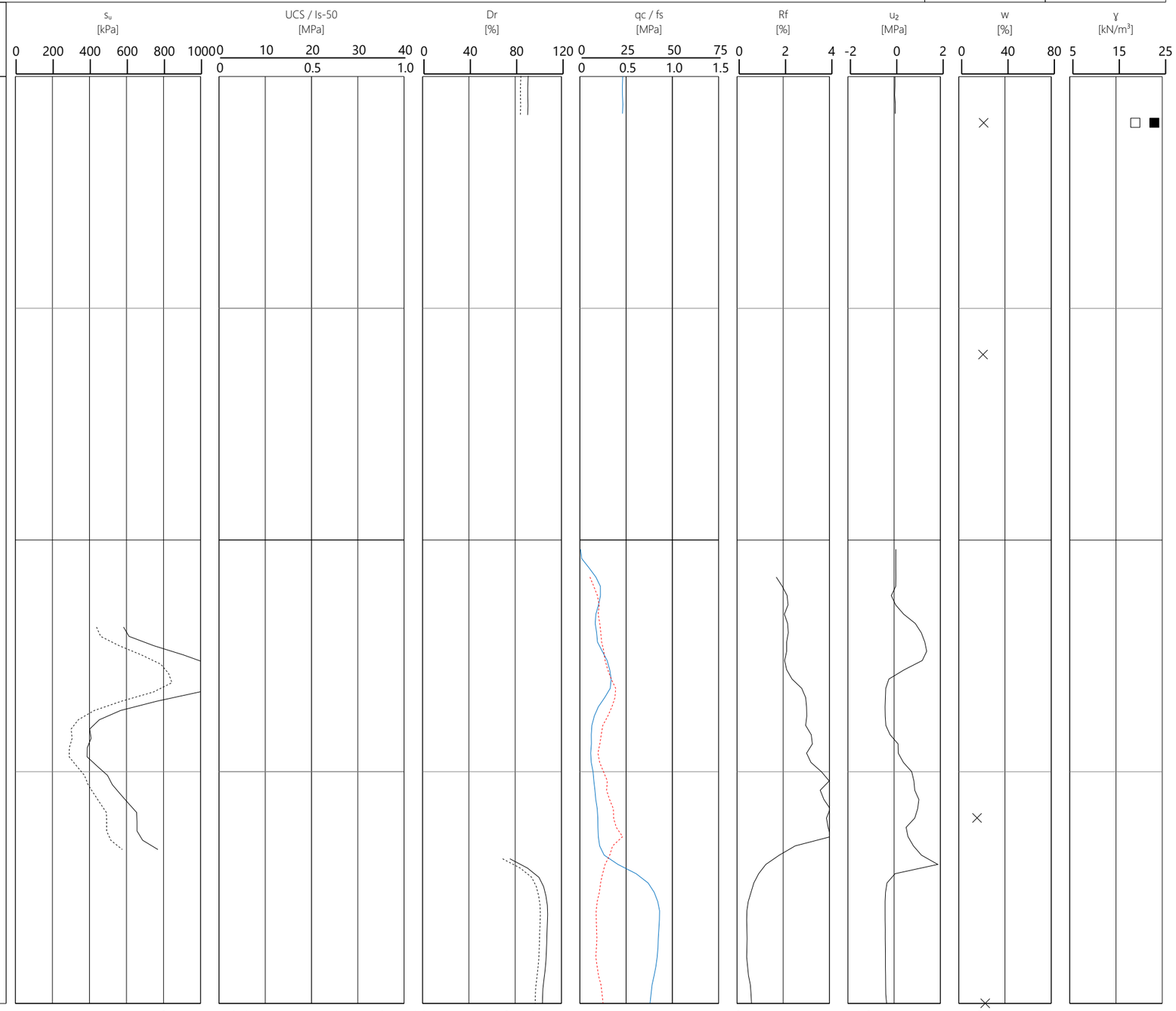
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		6.00 m to 11.30 m - Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND with closely to medium spaced thin beds of stiff thinly laminated clayey silt. [WESTERN IRISH SEA FORMATION?]						
	-39.0	6.50m to 6.70m; thin bed with extremely closely spaced thin laminae of firm dark brownish grey silt.						
7.0								
		7.20m to 7.67m; with a medium bed of clay						
	-40.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

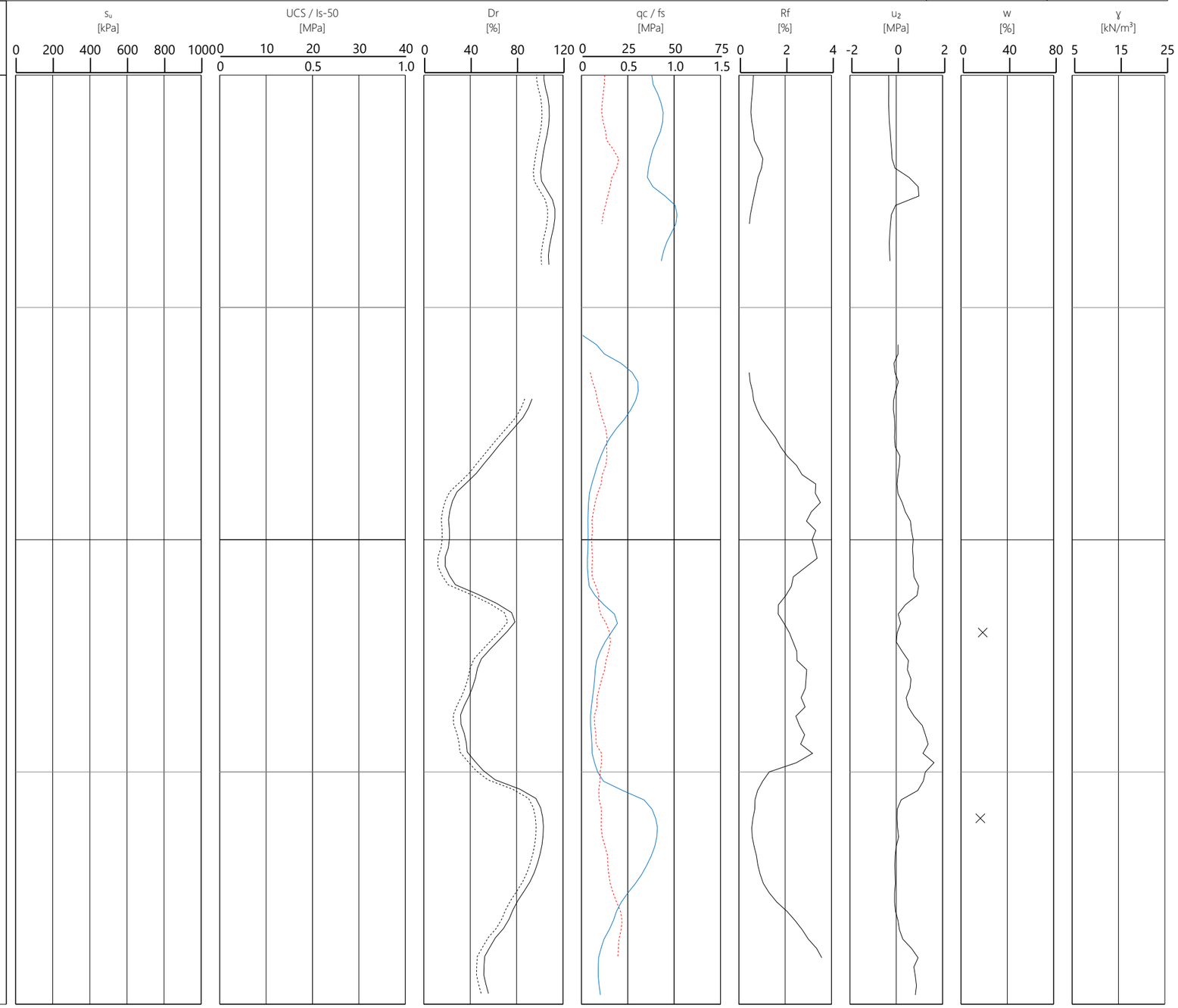
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
9.0	-41.0	6.00 m to 11.30 m - Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND with closely to medium spaced thin beds of stiff thinly laminated clayey silt. [WESTERN IRISH SEA FORMATION?]						
	-42.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

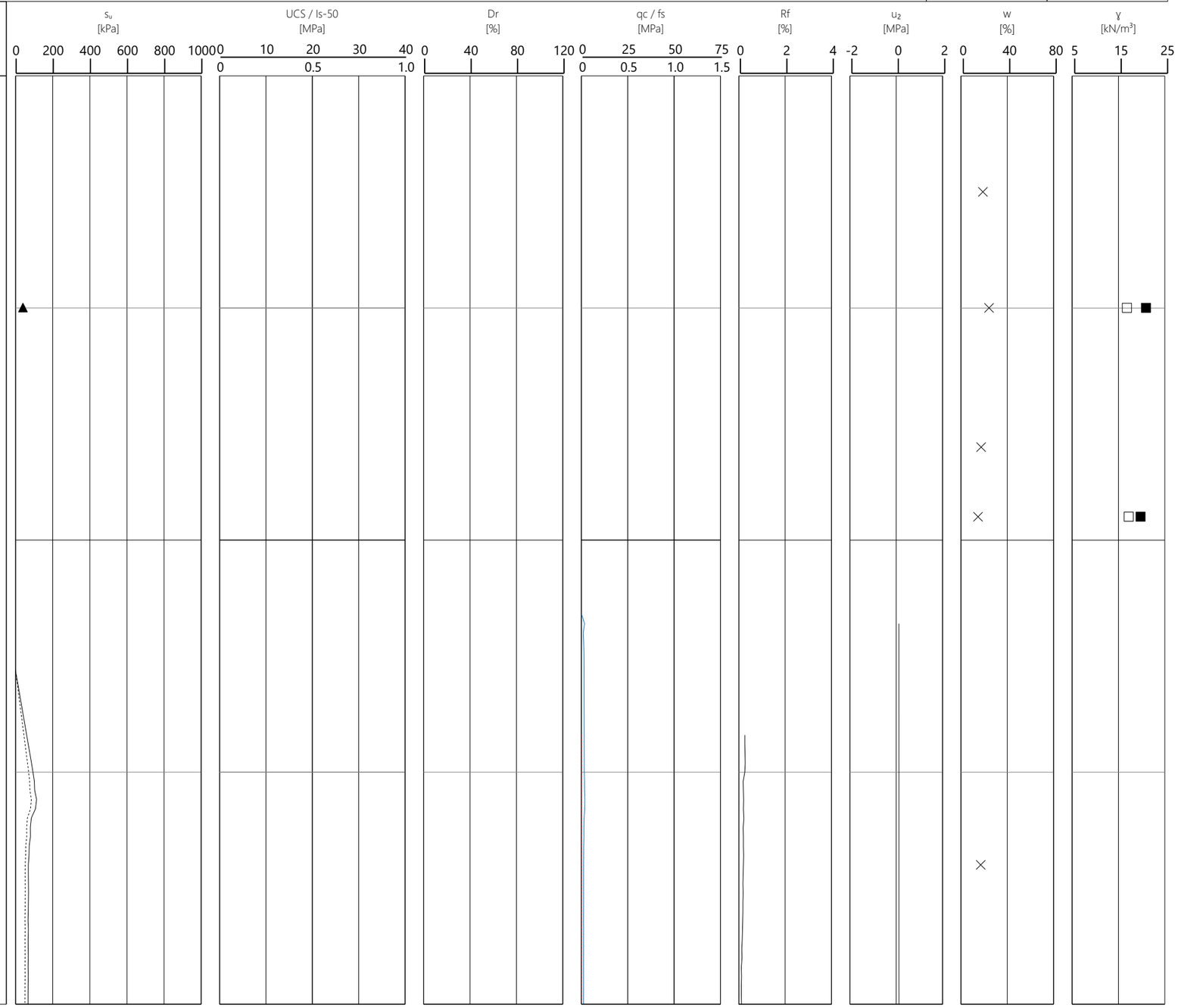
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.94

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		6.00 m to 11.30 m - Very dense becoming medium dense to dense dark brownish grey to brownish grey silty to very silty fine SAND with closely to medium spaced thin beds of stiff thinly laminated clayey silt. [WESTERN IRISH SEA FORMATION?]						
	-43.0							
11.0								
		11.30 m to 14.00 m - Stiff thinly to thickly laminated dark grey clayey SILT. [CARDIGAN BAY FORMATION]						
	-44.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

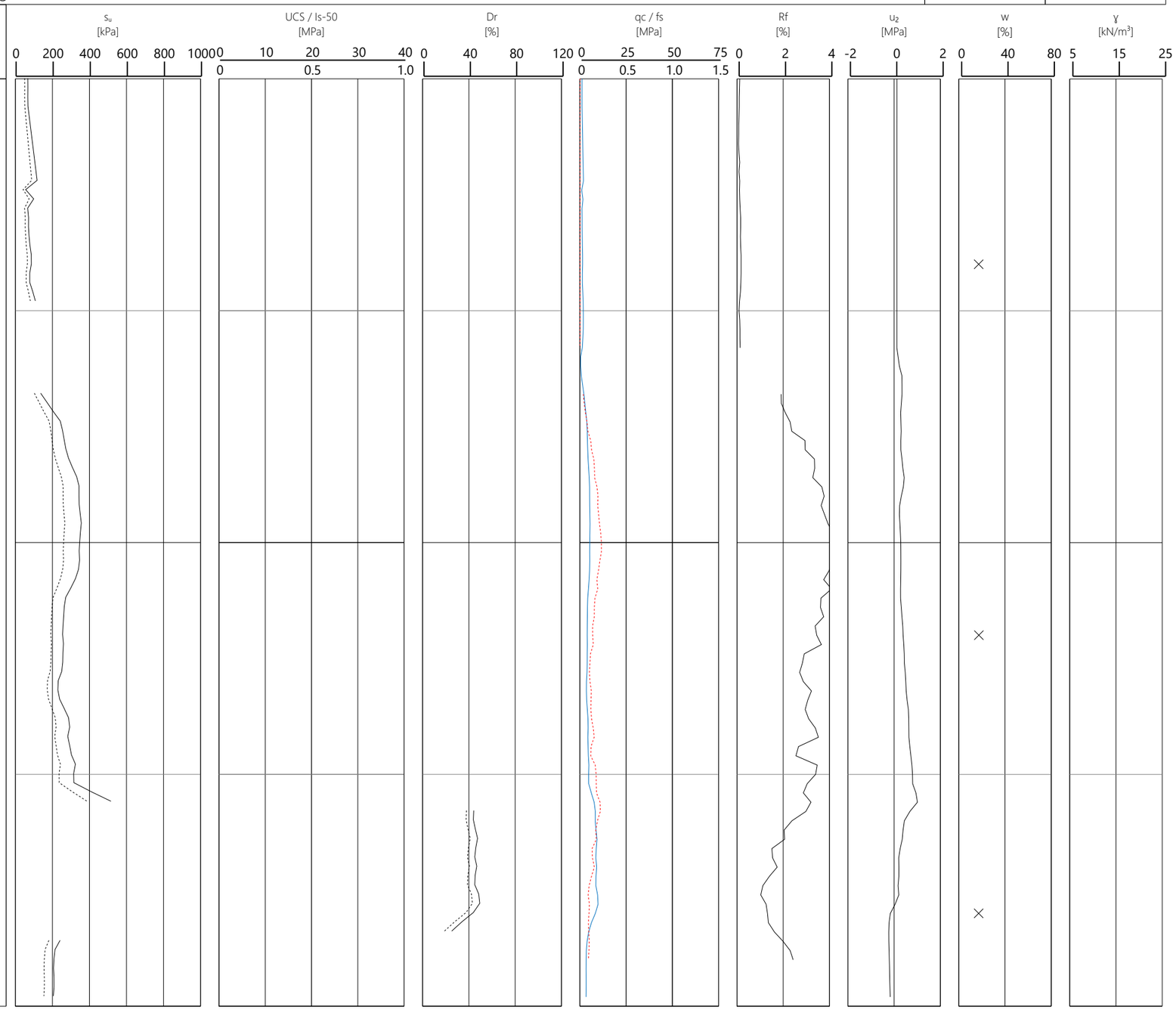
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.30 m to 14.00 m - Stiff thinly to thickly laminated dark grey clayey SILT. [CARDIGAN BAY FORMATION]						
	-45.0							
13.0		13:00m to 14.00m; with very closely to closely spaced 40 to 45 degree inclined partings of light grey fine sand.						
	-46.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

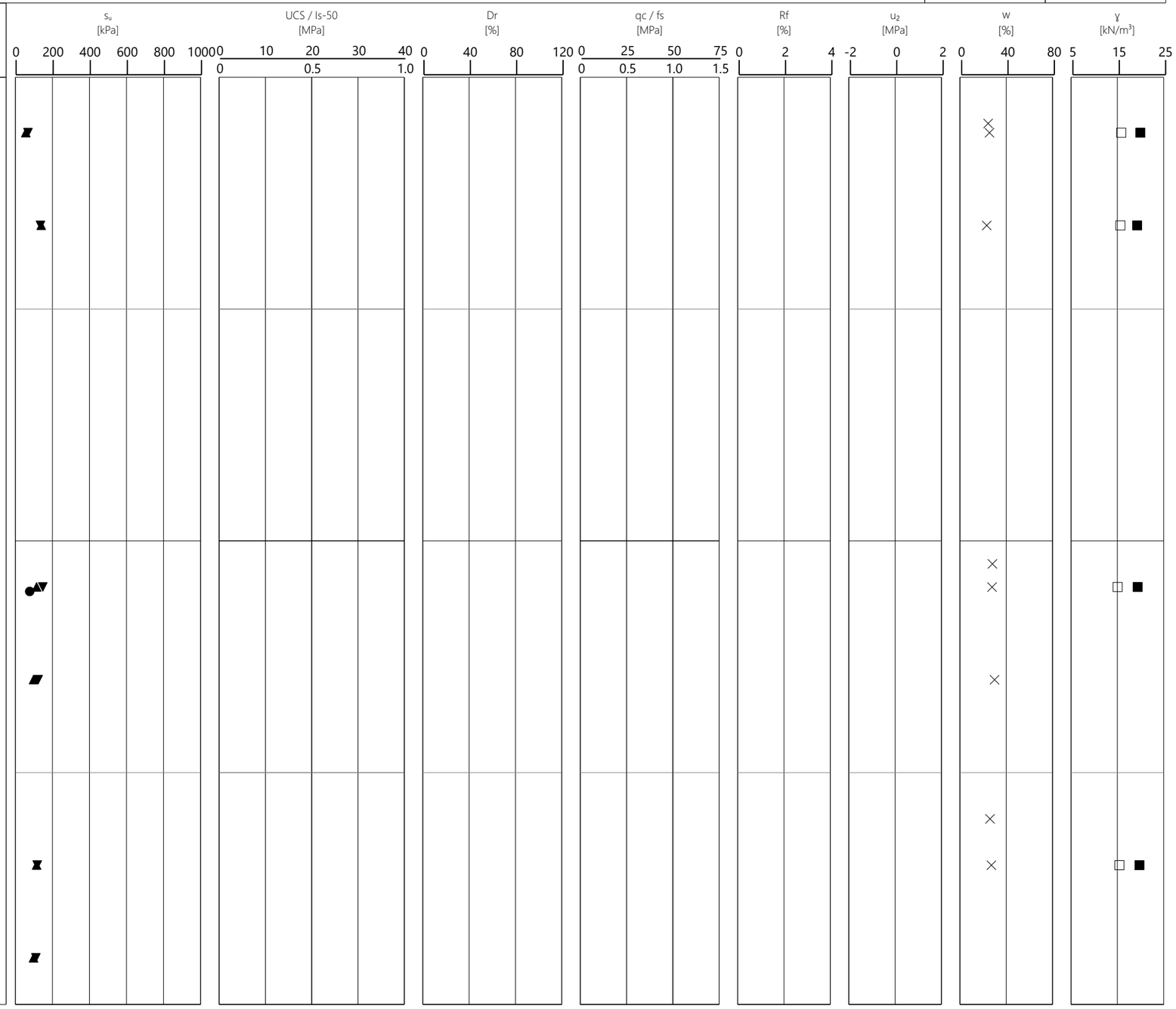
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend
		14.00 m to 15.00 m - Stiff thinly laminated dark grey CLAY [CARDIGAN BAY FORMATION] 14.00m to 14.50m; silty with very closely to closely spaced 40 to 45 degree inclined partings of light grey fine sand.	
15.0	-47.0	15.00 m to 19.00 m - Very stiff dark greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine and coarse. Gravel is subrounded to well rounded fine and medium occasionally coarse of mixed lithologies including basalt, quartz and chert. [CARDIGAN BAY FORMATION]	
	-48.0		

TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

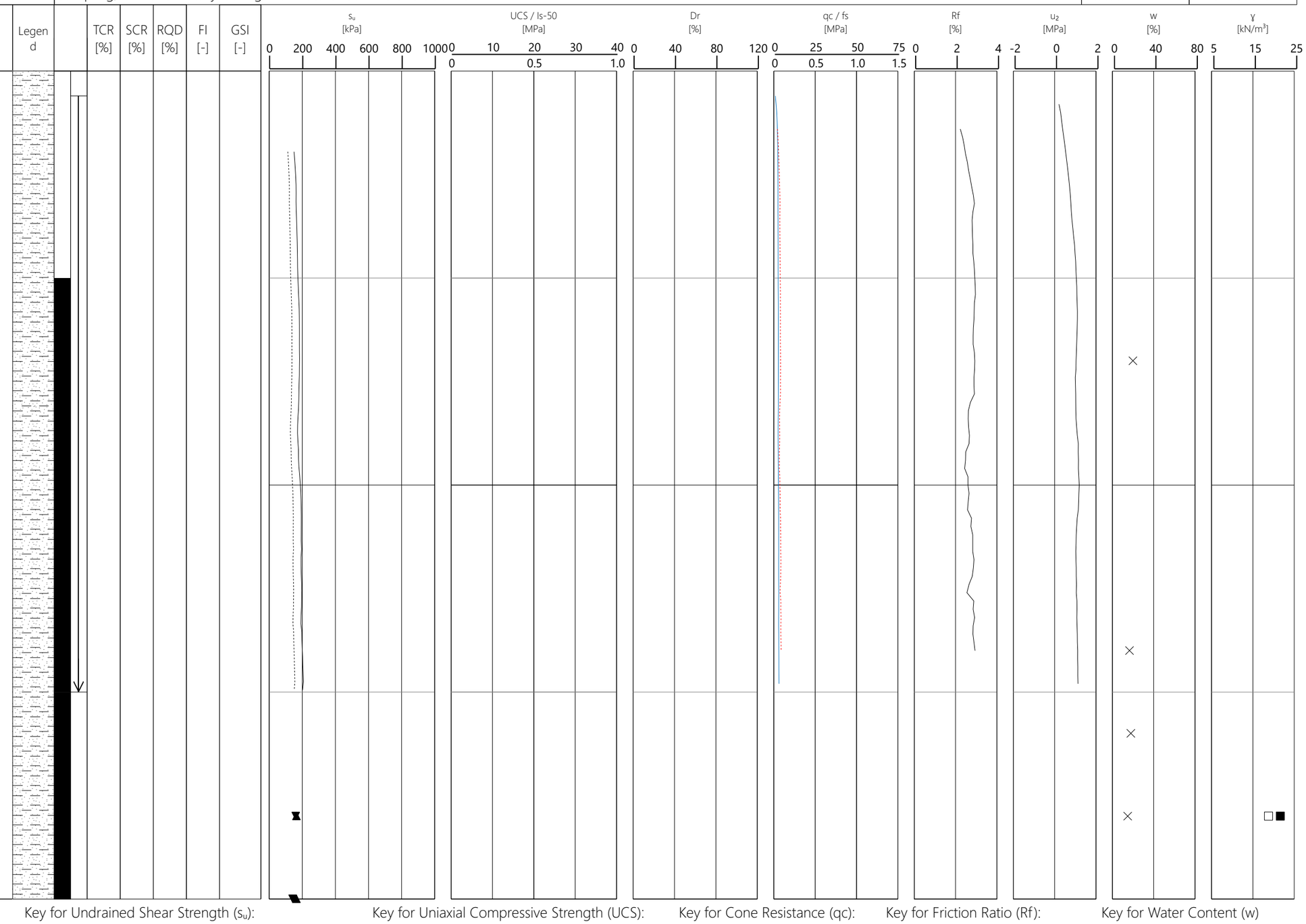
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 9 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		15.00 m to 19.00 m - Very stiff dark greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine and coarse. Gravel is subrounded to well rounded fine and medium occasionally coarse of mixed lithologies including basalt, quartz and chert. [CARDIGAN BAY FORMATION]						
	-49.0							
	17.0							
	-50.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

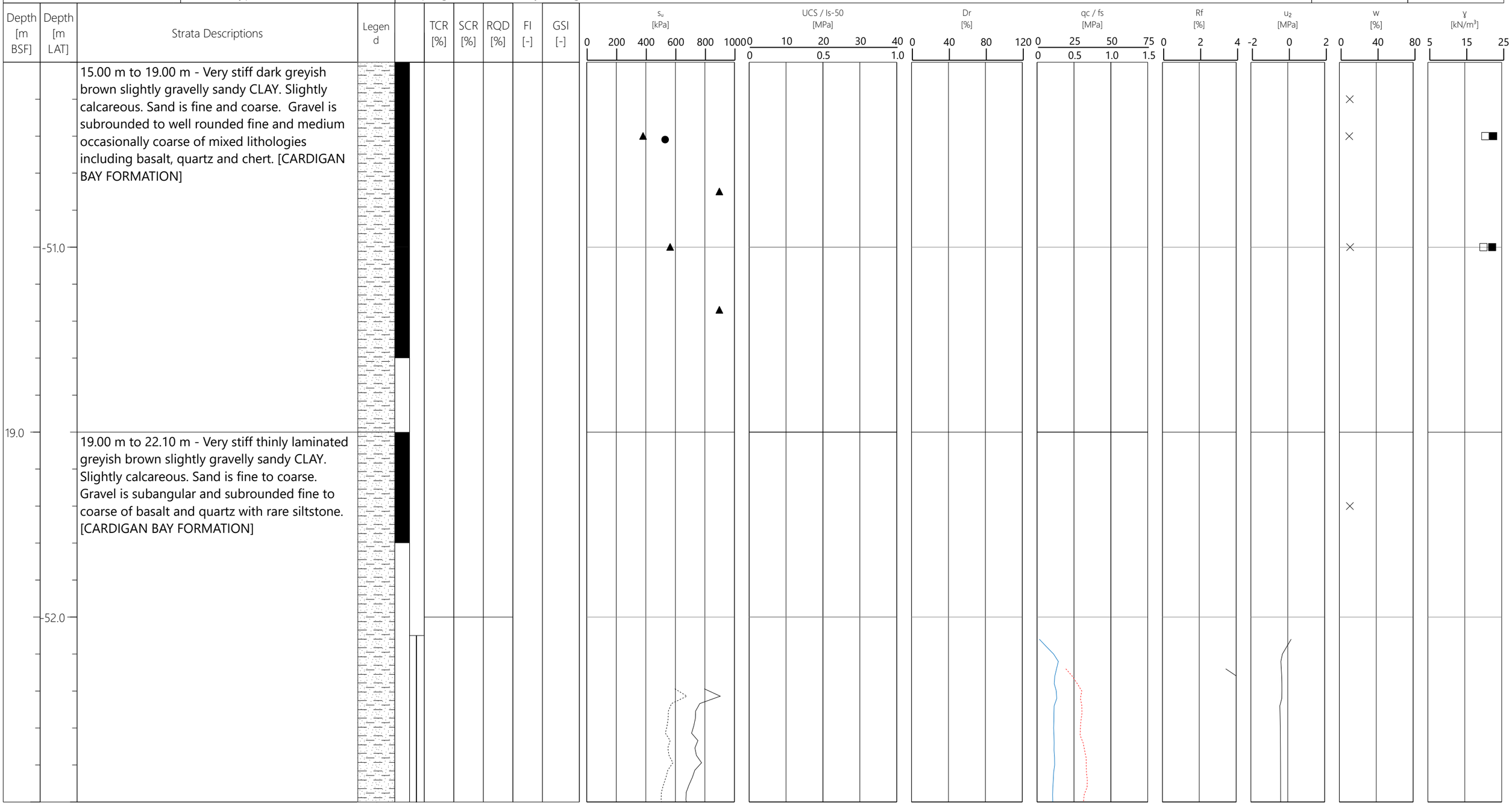
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 10 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		15.00 m to 19.00 m - Very stiff dark greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine and coarse. Gravel is subrounded to well rounded fine and medium occasionally coarse of mixed lithologies including basalt, quartz and chert. [CARDIGAN BAY FORMATION]						
	-51.0							
19.0		19.00 m to 22.10 m - Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of basalt and quartz with rare siltstone. [CARDIGAN BAY FORMATION]						
	-52.0							



Sample / Testing:

- Push sample recovery
- Cone penetration test

Core Details:

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
FI	Fracture Index
GSI	Geological Strength Index

Key for Undrained Shear Strength (s_u):

- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):

- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)

- ⊠ Point Load Index

Key for Cone Resistance (qc):

- Cone Resistance

Key for Sleeve Friction (fs):

- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):

- Pore Water Pressure

Key for Water Content (w)

- × Water Content

Key for Unit Weight (γ)

- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.99

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 11 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
21.0	-53.0	19.00 m to 22.10 m - Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of basalt and quartz with rare siltstone. [CARDIGAN BAY FORMATION]		100	0	0		
	-54.0			100	0	0		

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:

- Push sample recovery
- Cone penetration test

Core Details:

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
FI	Fracture Index
GSI	Geological Strength Index

Key for Undrained Shear Strength (s_u):

- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):

- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)

- Point Load Index

Key for Cone Resistance (qc):

- Cone Resistance

Key for Sleeve Friction (fs):

- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):

- Pore Water Pressure

Key for Water Content (w)

- Water Content

Key for Unit Weight (γ)

- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 12 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		19.00 m to 22.10 m - Very stiff thinly laminated greyish brown slightly gravelly sandy CLAY. Slightly calcareous. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of basalt and quartz with rare siltstone. [CARDIGAN BAY FORMATION]						
	55.0	22.10 m to 24.17 m - Very stiff greyish brown gravelly sandy silty CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of quartz, basalt, siltstone and chert with rare sandstone. [CARDIGAN BAY FORMATION]						
		22.50m to 22.70m; assumed zone of core loss.						
	23.0			87	0	0		
	56.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 13 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		22.10 m to 24.17 m - Very stiff greyish brown gravelly sandy silty CLAY. Calcareous. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of quartz, basalt, siltstone and chert with rare sandstone. [CARDIGAN BAY FORMATION]						
		24.00m to 24.17m; with a thin bed of thinly laminated silty clay.						
	-57.0	24.17 m to 27.37 m - Very stiff greyish brown slightly gravelly sandy SILT with locally possibly high cobble content. Sand is fine to coarse predominately fine. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, basalt, flint and sandstone. Cobbles are (120mm x 100mm x 50mm) subangular and subrounded of basalt, granite and psammite [CARDIGAN BAY FORMATION].		100	0	0		
	-25.0							
	-58.0	25.50m to 25.90m; with a medium bed of greyish brown slightly gravelly sandy clay. Calcareous. Sand is fine. Gravel is subangular to rounded fine to coarse of quartz and siltstone.						

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

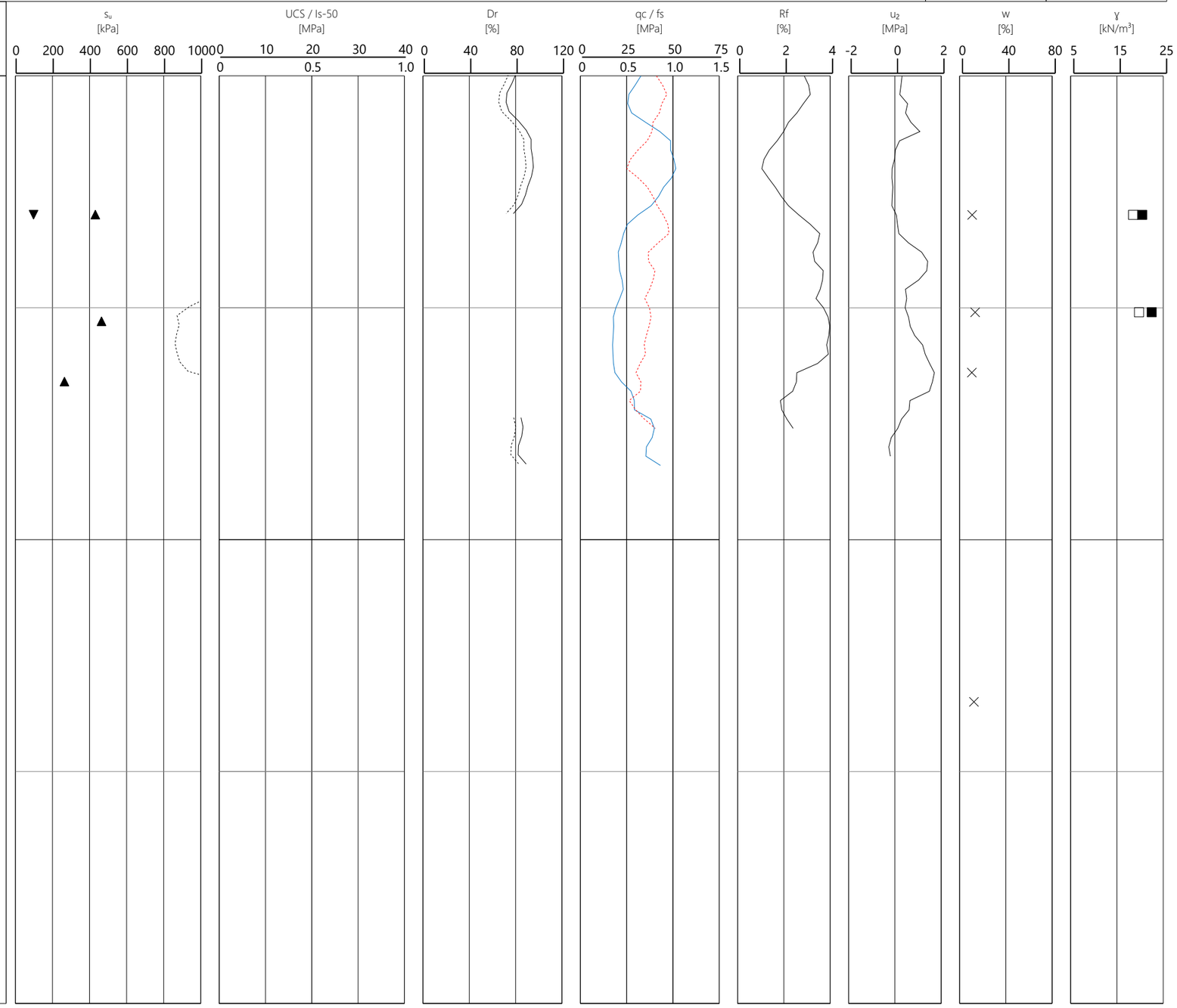
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		24.17 m to 27.37 m - Very stiff greyish brown slightly gravelly sandy SILT with locally possibly high cobble content. Sand is fine to coarse predominately fine. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, basalt, flint and sandstone. Cobbles are (120mm x 100mm x 50mm) subangular and subrounded of basalt, granite and psammite [CARDIGAN BAY FORMATION].				0		
	-59.0			86	0			
		26.79m to 27.00m; assumed zone of core loss.						
27.0		27.00m to 28.50m; possibly locally high cobble content.						
		27.30m to 27.37m; with a thin bed of very stiff dark greyish brown slightly gravelly sandy silty clay. Sand is fine to coarse predominately fine. Gravel is angular and subangular fine of quartz and basalt.						
	-60.0	27.37 m to 28.90 m - ASSUMED ZONE OF CORE LOSS.		25	0	0		



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

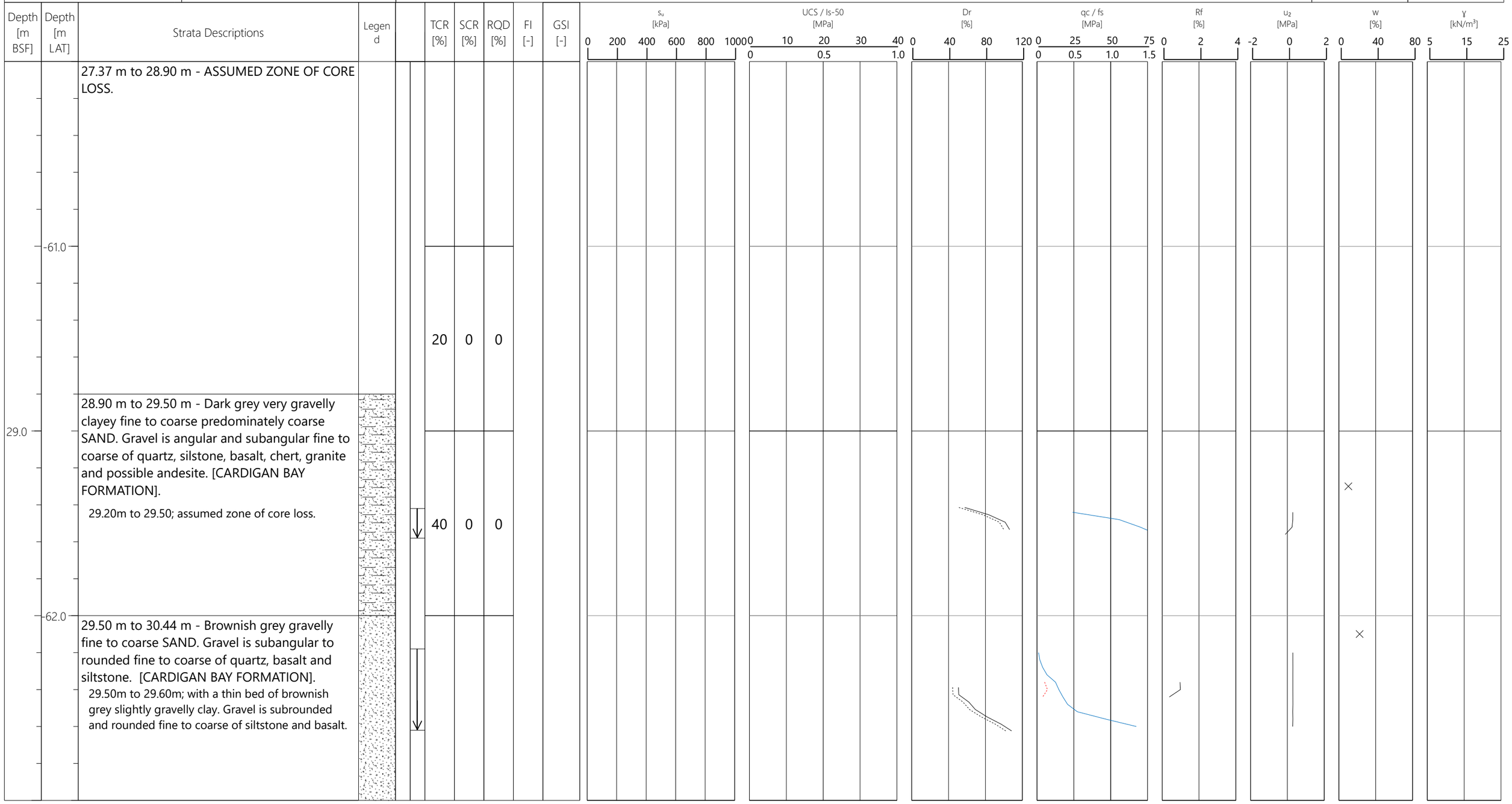
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.37 m to 28.90 m - ASSUMED ZONE OF CORE LOSS.						
	-61.0			20	0	0		
29.0		28.90 m to 29.50 m - Dark grey very gravelly clayey fine to coarse predominately coarse SAND. Gravel is angular and subangular fine to coarse of quartz, silstone, basalt, chert, granite and possible andesite. [CARDIGAN BAY FORMATION]. 29.20m to 29.50; assumed zone of core loss.		40	0	0		
	-62.0	29.50 m to 30.44 m - Brownish grey gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of quartz, basalt and siltstone. [CARDIGAN BAY FORMATION]. 29.50m to 29.60m; with a thin bed of brownish grey slightly gravelly clay. Gravel is subrounded and rounded fine to coarse of siltstone and basalt.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 16 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		29.50 m to 30.44 m - Brownish grey gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of quartz, basalt and siltstone. [CARDIGAN BAY FORMATION].				0		
	-63.0	30.44 m to 32.50 m - Stiff brownish grey slightly gravelly sandy silty CLAY. Very calcareous. Sand is fine locally coarse. Gravel is subangular to rounded fine to coarse of quartz, chert and basalt. [CARDIGAN BAY FORMATION]		100	0			
		30.85m to 31.00m; thinly laminated.						
	31.0	31.00m to 31.50m; NCD.				0	0	0
	-64.0	31.50m to 31.74m; assumed zone of core loss.						
		31.74m to 32.00m; very gravelly.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

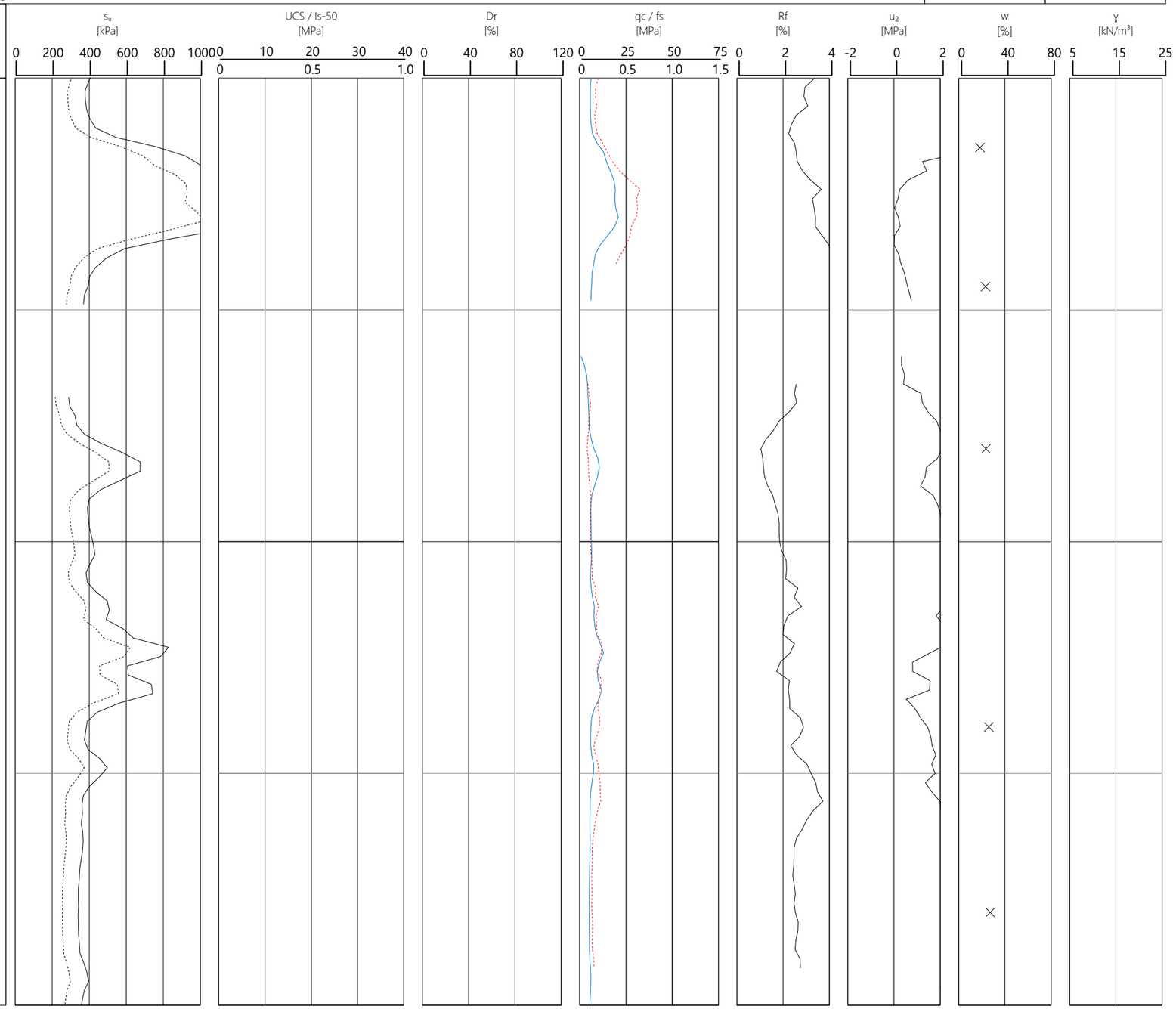
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 17 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		30.44 m to 32.50 m - Stiff brownish grey slightly gravelly sandy silty CLAY. Very calcareous. Sand is fine locally coarse. Gravel is subangular to rounded fine to coarse of quartz, chert and basalt. [CARDIGAN BAY FORMATION] 32.07m to 32.50m; thinly laminated. 32.07m to 32.50m; locally coarse sand.		76	0	0		
	65.0	32.50 m to 39.50 m - Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY with very closely to closely spaced 0 to 5 degrees incined partings of light brownish grey fine to coarse sand and rare wood fragments (20mm x 10mm). [CARDIGAN BAY FORMATION] 32.50m to 32.60m: assumed zone of core loss.		91	0	0		
	33.0							
	66.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 18 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		32.50 m to 39.50 m - Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY with very closely to closely spaced 0 to 5 degrees incined partings of light brownish grey fine to coarse sand and rare wood fragments (20mm x 10mm). [CARDIGAN BAY FORMATION]		100	0	0		
	67.0	34.50m to 35.00m; NCD. 34.50m to 36.00m; no recovery.		0	0	0		
35.0								
	68.0			100	0	0		

Plot scales: s_u [kPa] 0 200 400 600 800 1000; UCS / Is-50 [MPa] 0 10 20 30 40 / 0 0.5 1.0; Dr [%] 0 40 80 120; qc / fs [MPa] 0 25 50 75 / 0 0.5 1.0 1.5; Rf [%] 0 2 4; u_2 [MPa] -2 0 2; w [%] 0 40 80; γ [kN/m³] 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

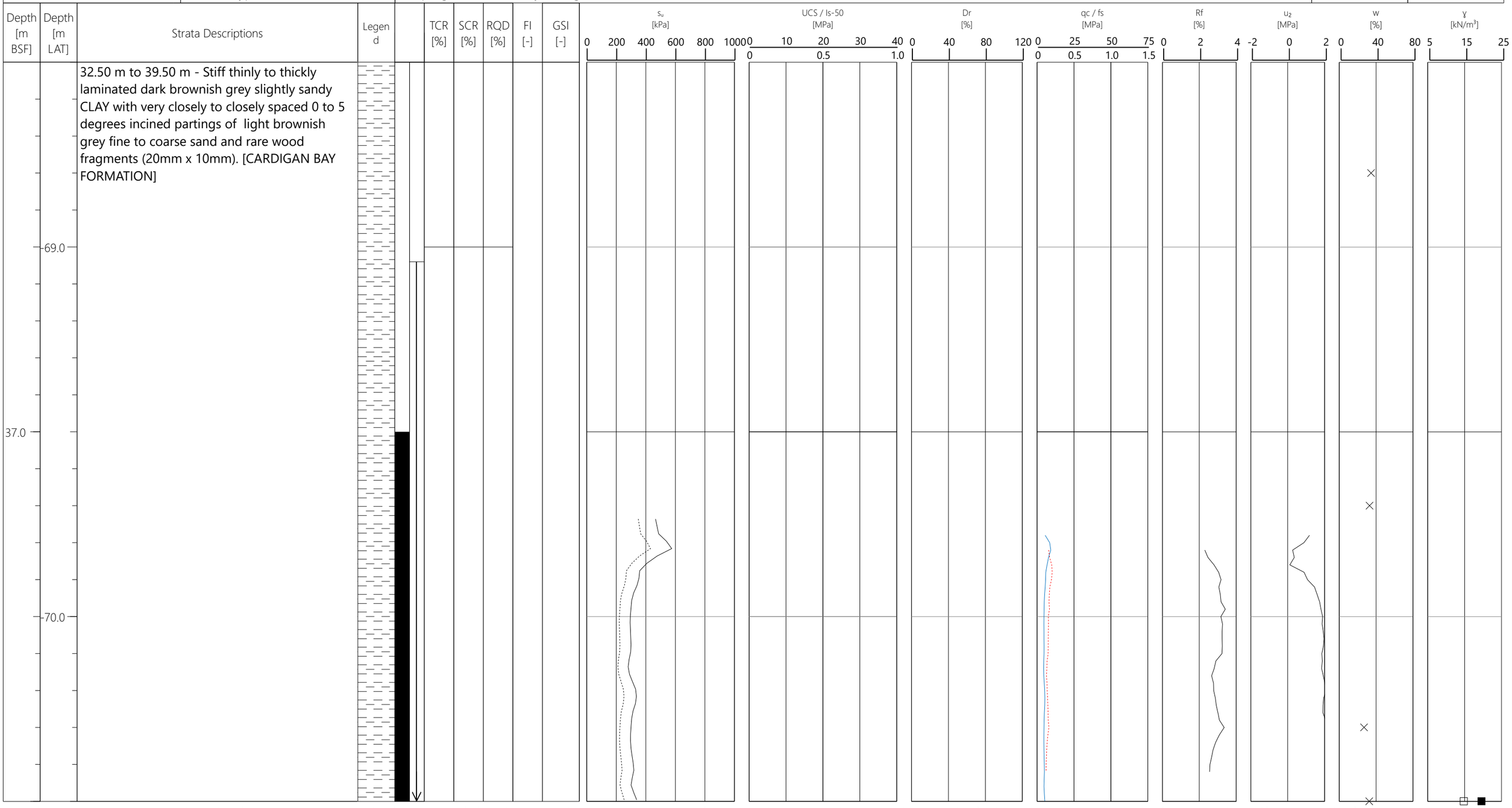
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 19 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		32.50 m to 39.50 m - Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY with very closely to closely spaced 0 to 5 degrees incined partings of light brownish grey fine to coarse sand and rare wood fragments (20mm x 10mm). [CARDIGAN BAY FORMATION]						
	-69.0							
	-37.0							
	-70.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

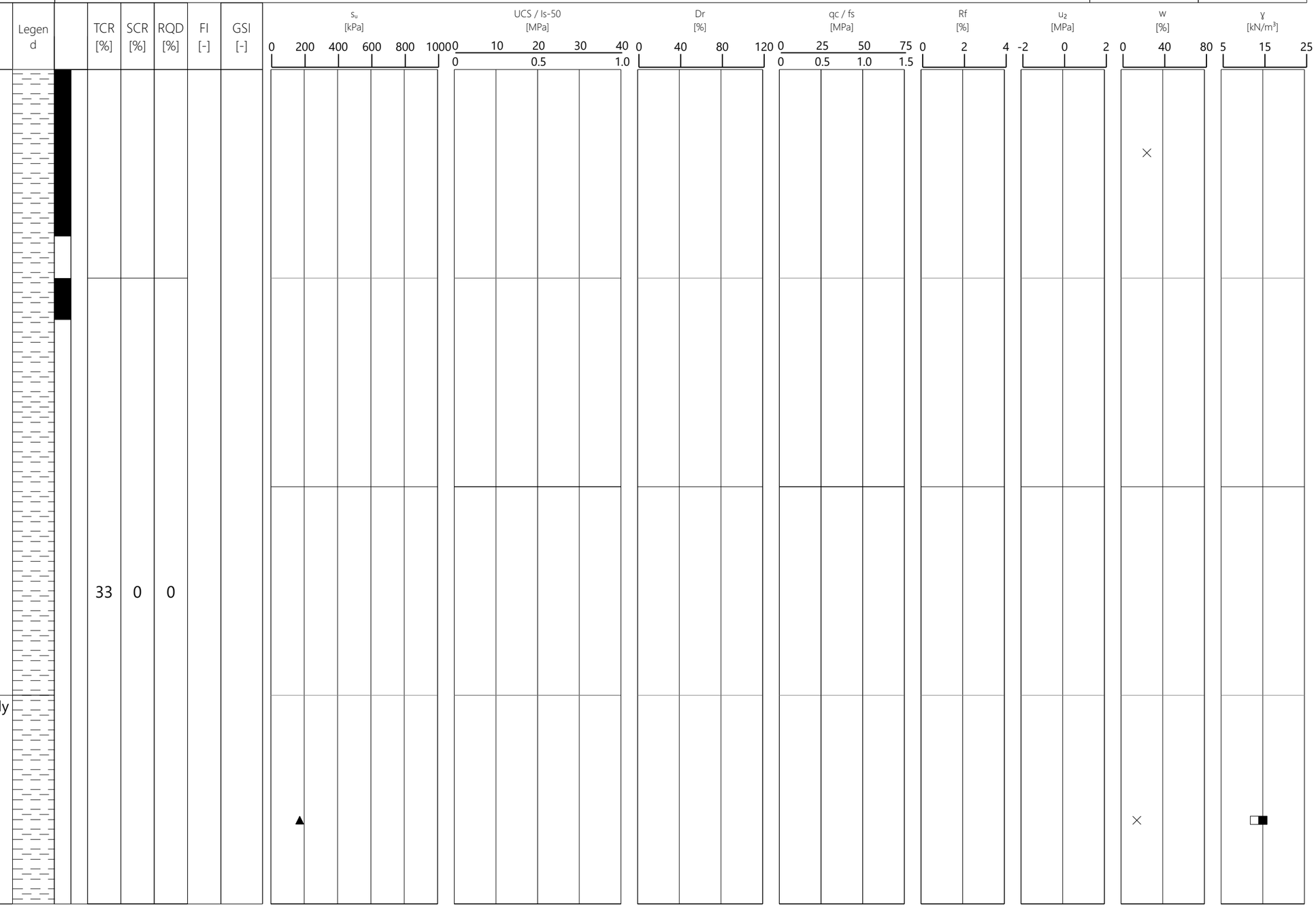
Key for Water Content (w)
- Water Content

Key for Unit Weight (ɣ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.108

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 20 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		32.50 m to 39.50 m - Stiff thinly to thickly laminated dark brownish grey slightly sandy CLAY with very closely to closely spaced 0 to 5 degrees incined partings of light brownish grey fine to coarse sand and rare wood fragments (20mm x 10mm). [CARDIGAN BAY FORMATION]						
	-71.0	38.50m to 39.50m; assumed zone of core loss.						
39.0				33	0	0		
	-72.0	39.50 m to 40.00 m - Stiff greyish brown slightly sandy CLAY. Sand is fine. [CARDIGAN BAY FORMATION] 39.50m to 39.70m; non intact, recovered as: greyish brown and black subangular and subrounded medium and coarse gravel-sized fragments of silestone and basalt.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

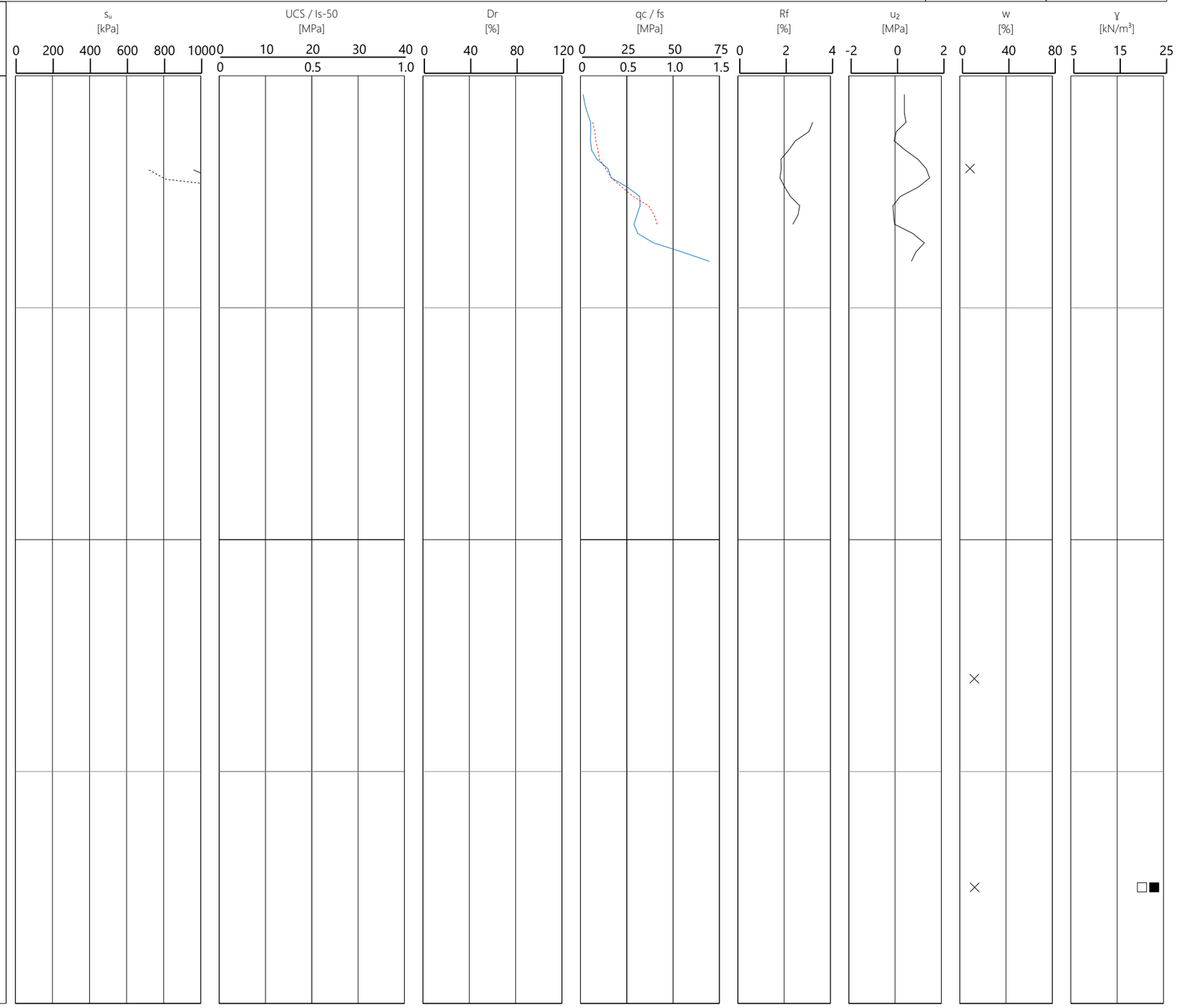
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 21 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		40.00 m to 41.75 m - Very stiff thinly laminated dark greyish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to well rounded fine and medium of siltstone, basalt and quartz. [CARDIGAN BAY FORMATION]						
		40.00m to 40.10m; non intact, recovered as: brown slightly clayey fine to coarse sand.						
		40.45m to 41.00m; assumed zone of core loss.						
	73.0			45	0	0		
41.0		41.00m to 41.15m; recovered as: brown slightly gravelly fine to coarse sand. Gravel is subangular coarse of basalt.						
		41.40m to 41.75m; assumed zone of core loss.		53	0	0		
	74.0							
		41.75 m to 46.50 m - Very stiff dark brown slightly sandy very gravelly CLAY with low cobble content. Sand is fien to coarse. Gravel is angular to subangular fine to coarse of basalt, siltstone, sandstone, flint and granite. Cobbles						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

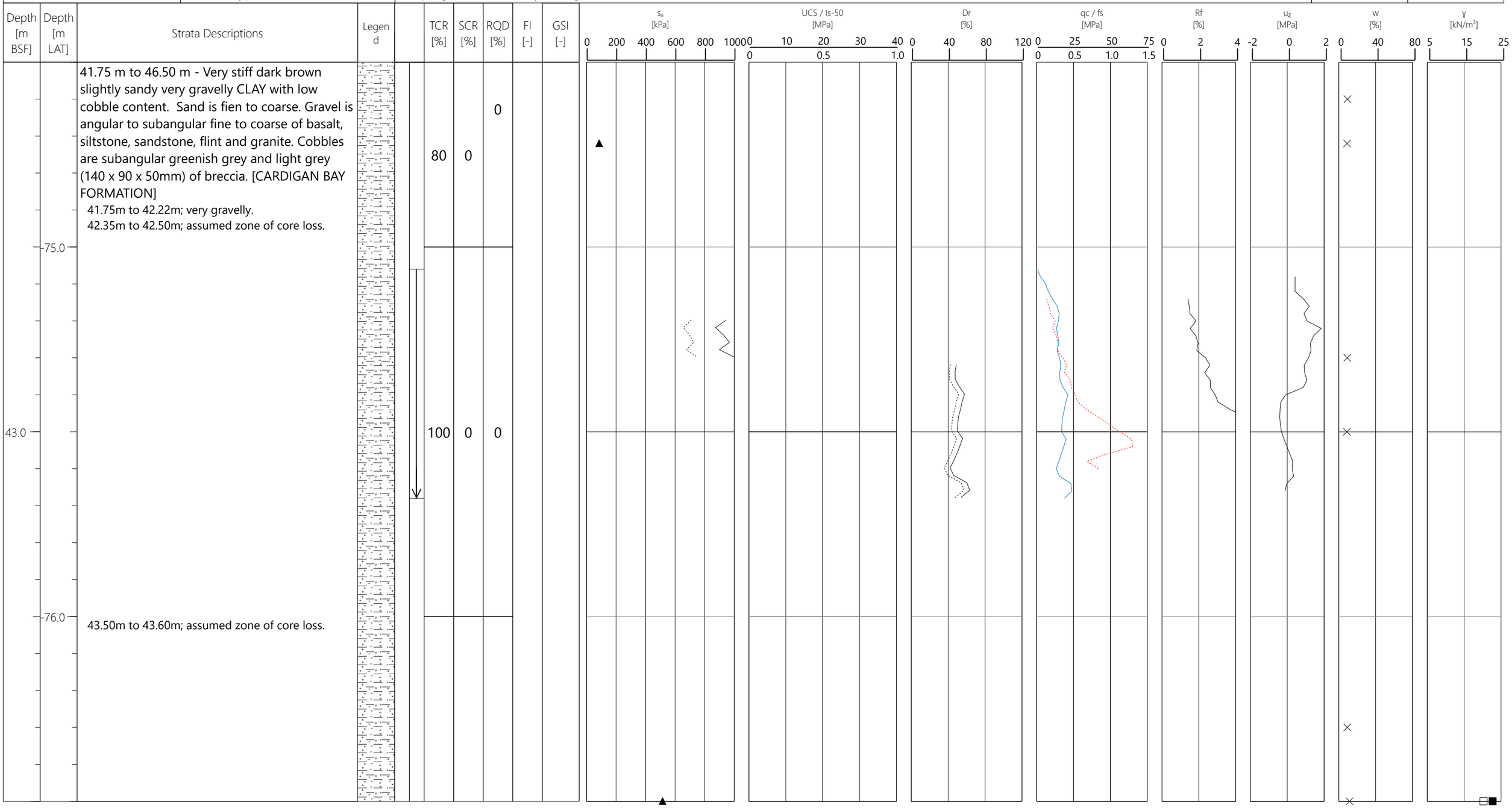
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 22 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.75 m to 46.50 m - Very stiff dark brown slightly sandy very gravelly CLAY with low cobble content. Sand is fien to coarse. Gravel is angular to subangular fine to coarse of basalt, siltstone, sandstone, flint and granite. Cobbles are subangular greenish grey and light grey (140 x 90 x 50mm) of breccia. [CARDIGAN BAY FORMATION]		80	0	0		
		41.75m to 42.22m; very gravelly.						
		42.35m to 42.50m; assumed zone of core loss.						
	75.0							
	43.0			100	0	0		
		43.50m to 43.60m; assumed zone of core loss.						
	76.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

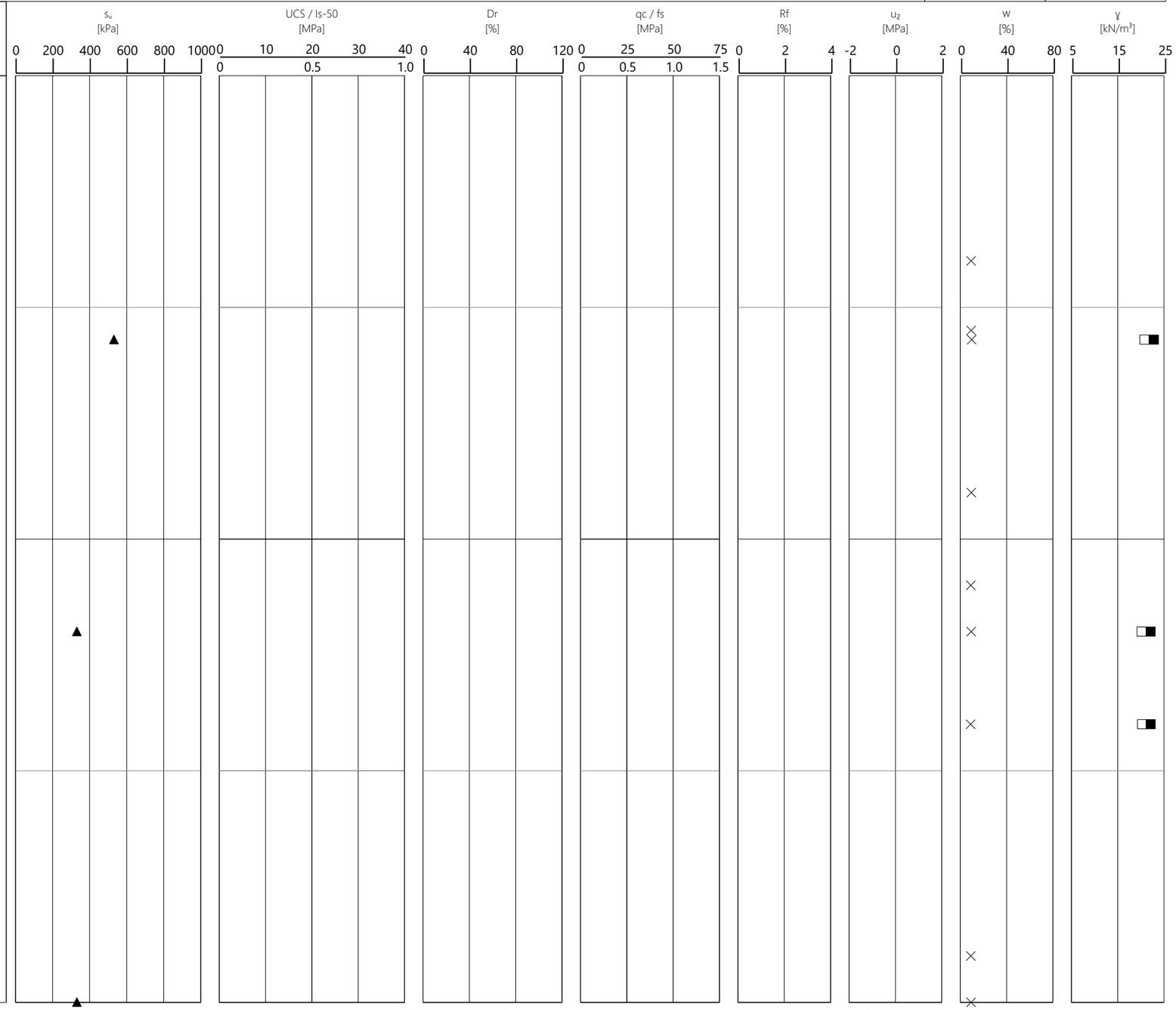
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 23 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.75 m to 46.50 m - Very stiff dark brown slightly sandy very gravelly CLAY with low cobble content. Sand is fien to coarse. Gravel is angular to subangular fine to coarse of basalt, siltstone, sandstone, flint and granite. Cobbles are subangular greenish grey and light grey (140 x 90 x 50mm) of breccia. [CARDIGAN BAY FORMATION]				0		
		44.30m to 44.35m; with a 45 degrees inclined thin laminae of light brown fine to coarse sand.		90	0			
	77.0							
				100	0	0		
45.0								
	78.0			100	0			
						0		



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 24 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.75 m to 46.50 m - Very stiff dark brown slightly sandy very gravelly CLAY with low cobble content. Sand is fien to coarse. Gravel is angular to subangular fine to coarse of basalt, siltstone, sandstone, flint and granite. Cobbles are subangular greenish grey and light grey (140 x 90 x 50mm) of breccia. [CARDIGAN BAY FORMATION]						
	79.0	46.50 m to 48.00 m - Very stiff thinly to thickly laminated dark grey slightly sandy CLAY with very closely to closely spaced 10 to 20 degrees of reddish brown fine to coarse sand. Sand is fine. 46.50m to 46.80m; assumed zone of core loss.						
47.0				80	0	0		
	80.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

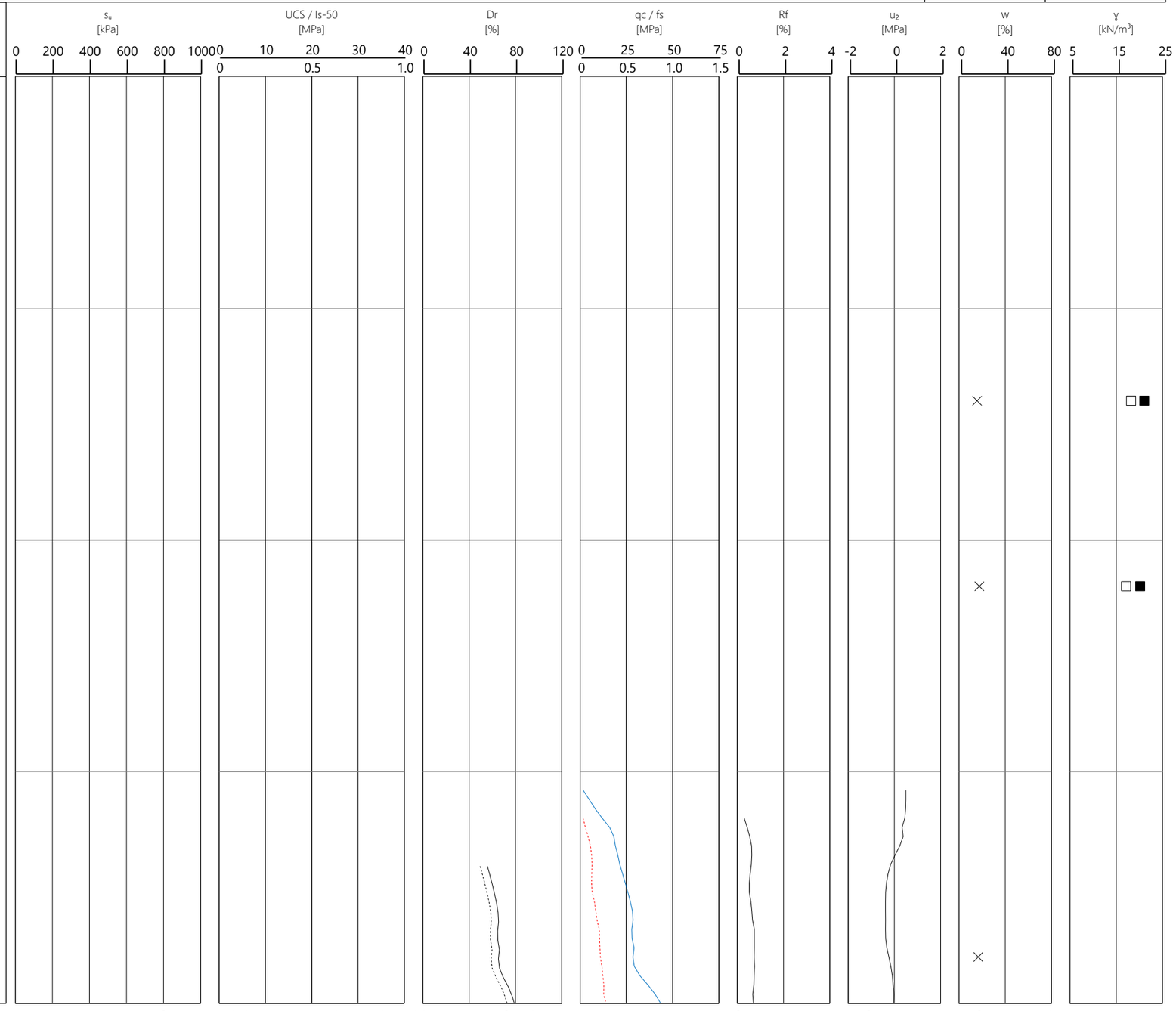
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 25 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
49.0	-81.0	48.00 m to 50.30 m - Reddish brown slightly gravelly clayey fine grained SAND. Non calcareous. Gravel is subangular to rounded fine to coarse of sandstone, basalt, chert and quartz. [CARDIGAN BAY FORMATION]. 48.00m to 48.49m; assumed zone of core loss. 48.49m to 48.70m; very gravelly.		67	0	0		
	-82.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 26 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		48.00 m to 50.30 m - Reddish brown slightly gravelly clayey fine grained SAND. Non calcareous. Gravel is subangular to rounded fine to coarse of sandstone, basalt, chert and quartz. [CARDIGAN BAY FORMATION].				13		
	-83.0	50.30 m to 50.80 m - Reddish brown extremely weak fine and medium grained SANDSTONE. Distinctly weathered to residual soil. No natural fractures. [LOWER PALEOZOIC]		100	13			
51.0		50.80 m to 54.75 m - Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE. Non calcareous. Partially weathered locally distinctly weathered sandstone. Fractures are inclined 5 to 25 degrees medium spaced planar and undulating rough locally smooth very tight to partly open clean with occasional sand (<0.5mm) infill. Fractures are inclined 80 to 90 degrees widely spaced planar smooth very tight to partly open clean with locally silty sand (<0.5mm) infill. [LOWER PALEOZOIC]. 51.00m to 51.18m; assumed zone of core loss.						
	-84.0			88	85	67		

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

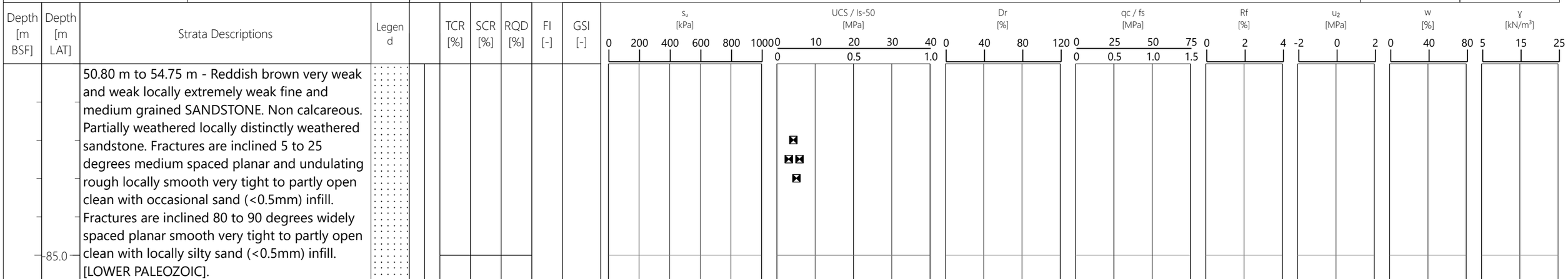
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.115

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 27 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		50.80 m to 54.75 m - Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE. Non calcareous. Partially weathered locally distinctly weathered sandstone. Fractures are inclined 5 to 25 degrees medium spaced planar and undulating rough locally smooth very tight to partly open clean with occasional sand (<0.5mm) infill. Fractures are inclined 80 to 90 degrees widely spaced planar smooth very tight to partly open clean with locally silty sand (<0.5mm) infill. [LOWER PALEOZOIC].						
	-85.0	52.15m to 52.20m; Non intact, drilling induced recovered as: reddish brown slightly gravelly fine and medium sand. Gravel is subangular and subrounded fine and medium of sandstone. 52.50m to 52.65m; extremely weak. 52.65m to 52.73m; Non intact, drilling induced recovered as: clayey sandy subangular fragments (<50mm x 50mm x 30mm) of fine grained sandstone. 52.78m to 53.01m; Non intact, drilling induced recovered as: sandy clayey angular and subangular fragments (<60mm x 30mm x 30mm) of fine and medium grained sandstone. 53.09m to 53.14m; Non intact, drilling induced recovered as: sandy subangular fragments (<70mm x 50mm x 20mm) of fine grained sandstone.		100	98	93	4	
53.0								
	-86.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

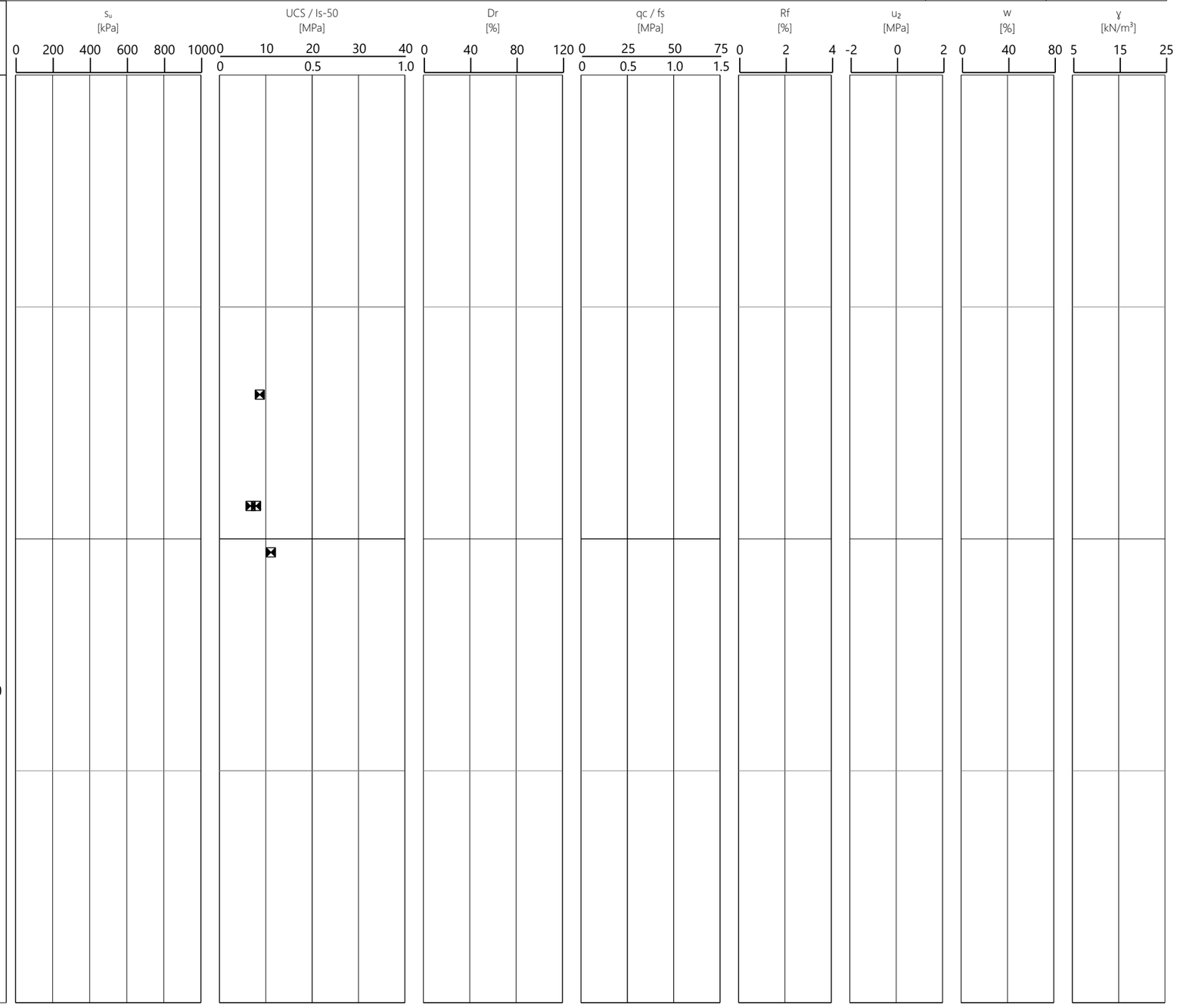
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 28 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		50.80 m to 54.75 m - Reddish brown very weak and weak locally extremely weak fine and medium grained SANDSTONE. Non calcareous. Partially weathered locally distinctly weathered sandstone. Fractures are inclined 5 to 25 degrees medium spaced planar and undulating rough locally smooth very tight to partly open clean with occasional sand (<0.5mm) infill. Fractures are inclined 80 to 90 degrees widely spaced planar smooth very tight to partly open clean with locally silty sand (<0.5mm) infill. [LOWER PALEOZOIC].						
	-87.0	54.24m to 54.30m; with a very thin bed of reddish brown clayey fine and medium sand. Completely weathered sandstone.						
55.0		54.75 m to 59.85 m - Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE. Partially weathered. Fractures are inclined 5 to 25 degrees closely and medium spaced planar and undulating rough and smooth very tight to open clean with occasional clay (<20mm) infill. Fractures are inclined 70 degrees widely spaced planar and undulating rough tight to partly open clean locally sand (<0.5mm) infill. [LOWER PALEOZOIC].		100	94	94		50-60
	-88.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

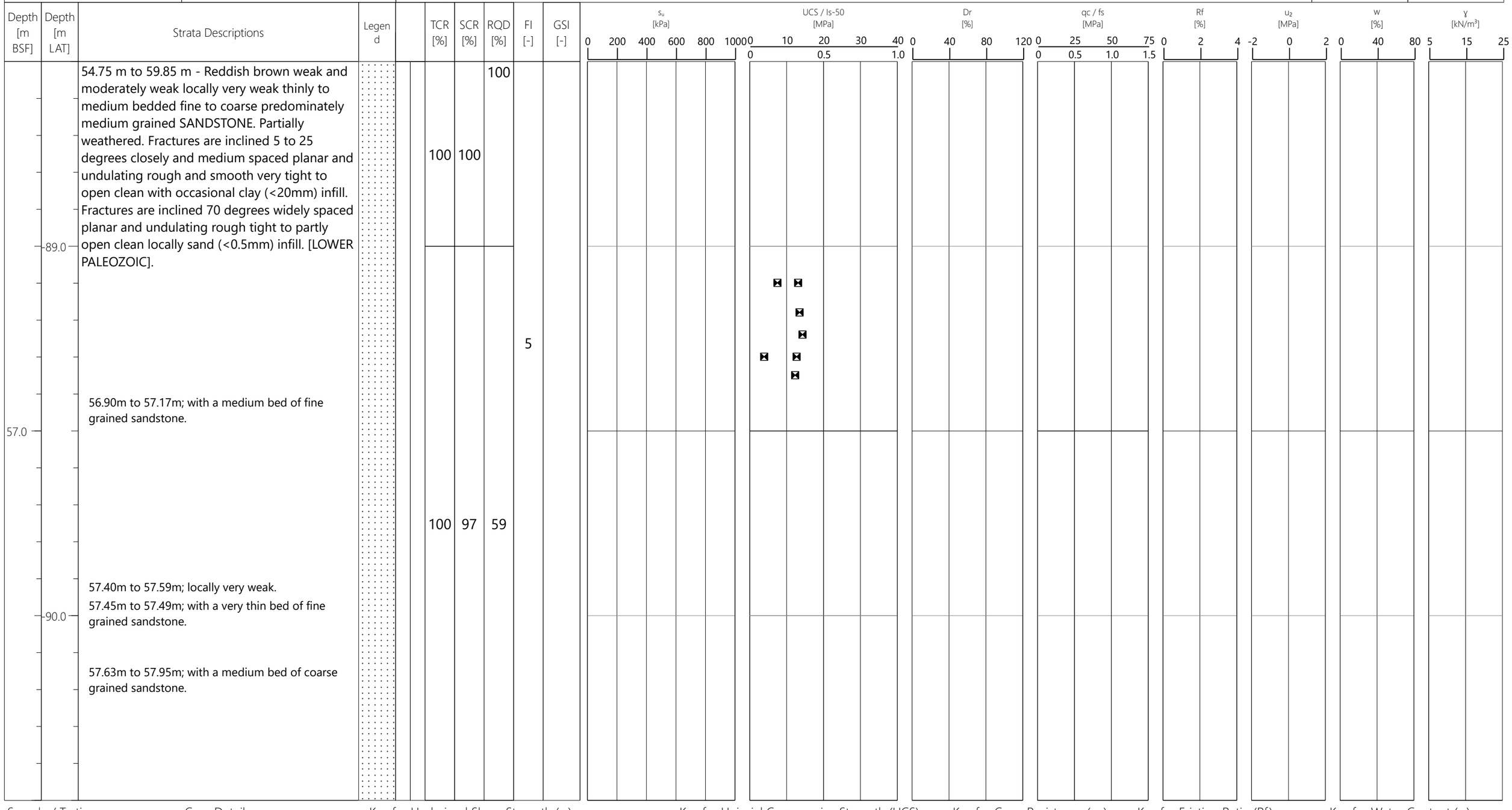
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 29 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		54.75 m to 59.85 m - Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE. Partially weathered. Fractures are inclined 5 to 25 degrees closely and medium spaced planar and undulating rough and smooth very tight to open clean with occasional clay (<20mm) infill. Fractures are inclined 70 degrees widely spaced planar and undulating rough tight to partly open clean locally sand (<0.5mm) infill. [LOWER PALEOZOIC].		100	100	100		
89.0							5	
		56.90m to 57.17m; with a medium bed of fine grained sandstone.						
57.0				100	97	59		
		57.40m to 57.59m; locally very weak.						
		57.45m to 57.49m; with a very thin bed of fine grained sandstone.						
90.0								
		57.63m to 57.95m; with a medium bed of coarse grained sandstone.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

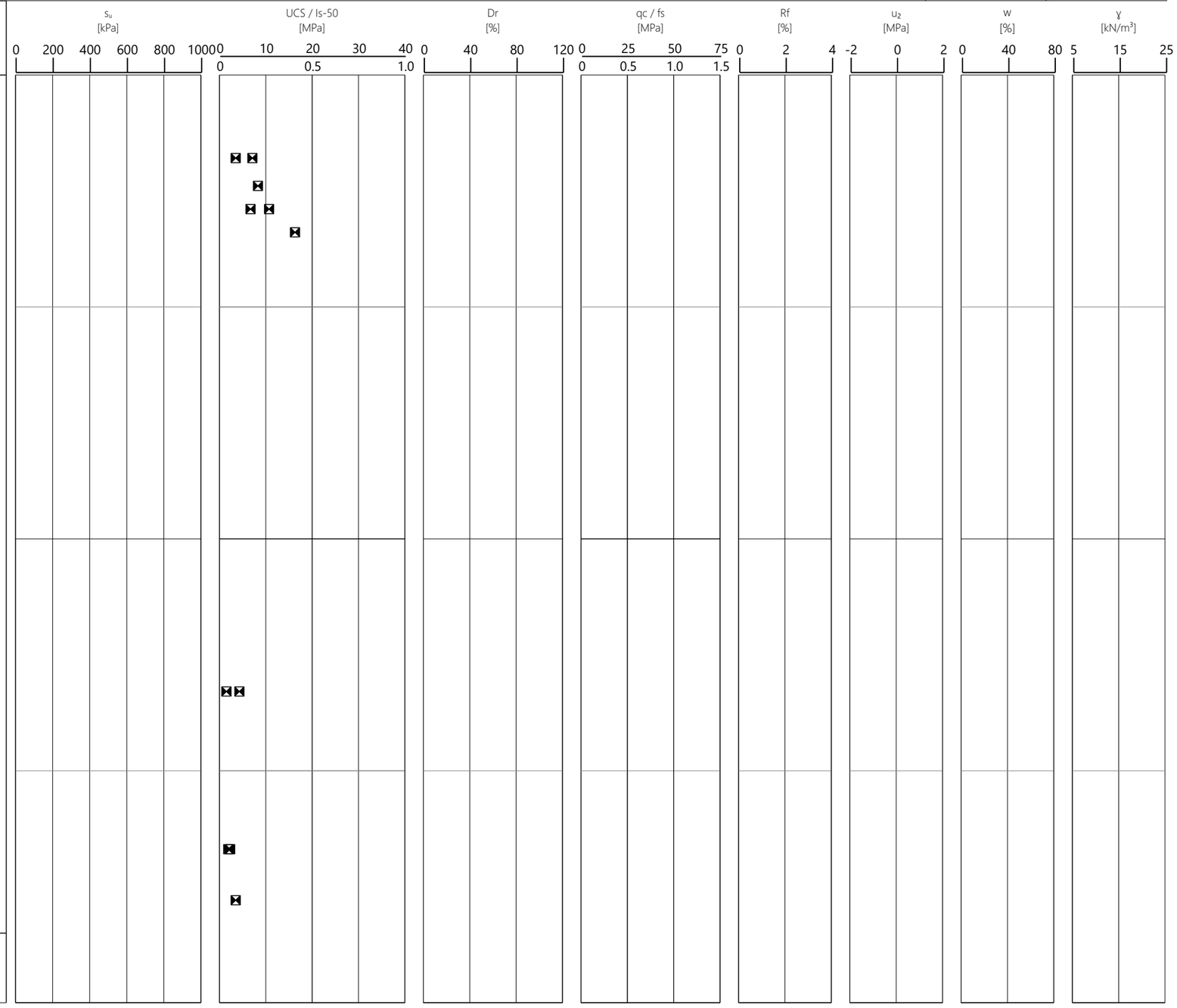
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 30 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-91.0	54.75 m to 59.85 m - Reddish brown weak and moderately weak locally very weak thinly to medium bedded fine to coarse predominately medium grained SANDSTONE. Partially weathered. Fractures are inclined 5 to 25 degrees closely and medium spaced planar and undulating rough and smooth very tight to open clean with occasional clay (<20mm) infill. Fractures are inclined 70 degrees widely spaced planar and undulating rough tight to partly open clean locally sand (<0.5mm) infill. [LOWER PALEOZOIC].		100	93	67		
		58.02m to 58.18m; Non intact, drilling induced recovered as: sandy clayey angular to subrounded fragments (<100mm x 35mm x 25mm) of fine grained sandstone.						
59.0		58.99m to 59.02m; Non intact, drilling induced recovered as: sandy clayey subangular and subrounded fragments (<10mm x 5mm) of fine grained sandstone.					4	
	-92.0	59.85 m to 62.50 m - Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE. Partially weathered. Bedding						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

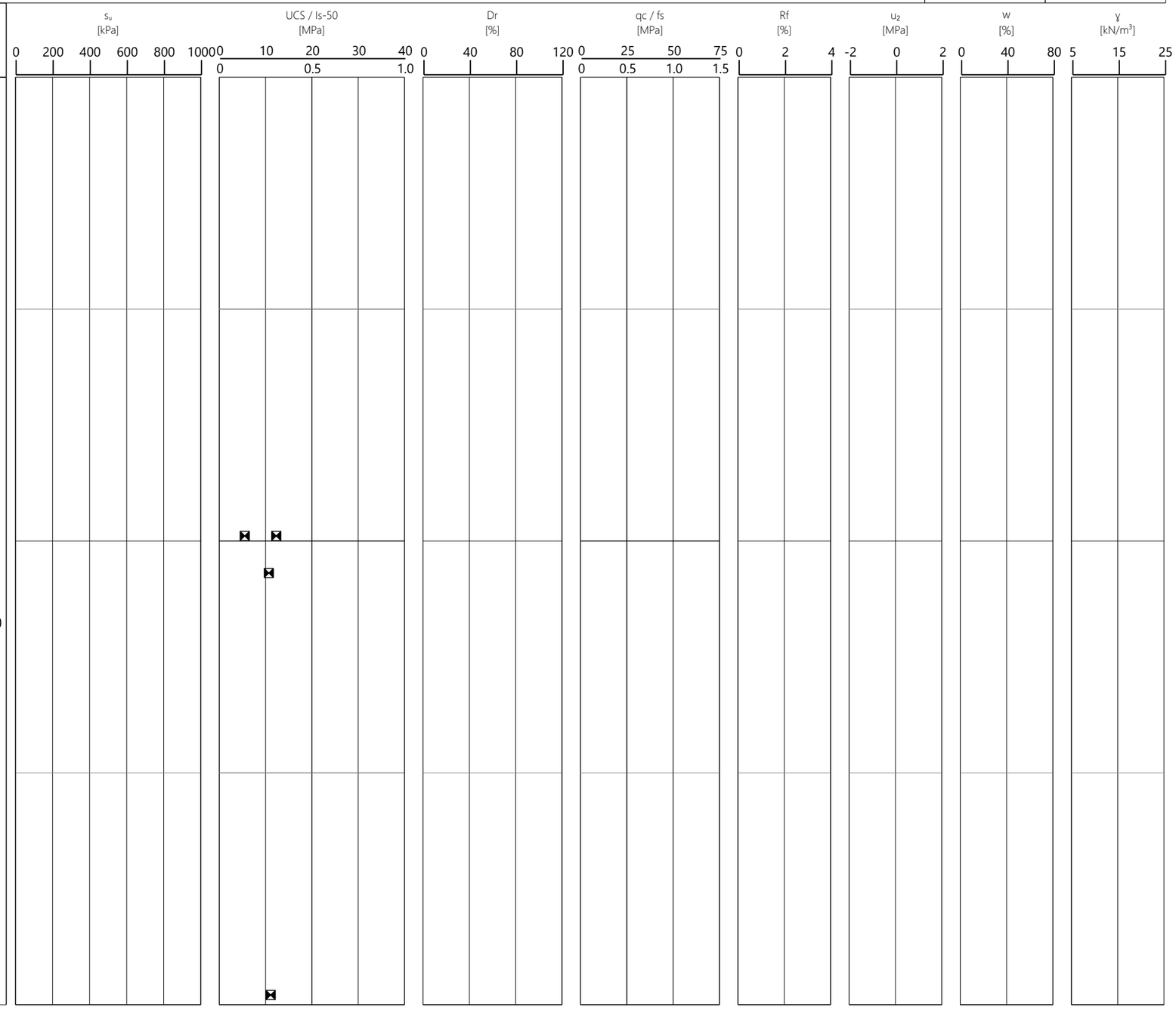
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
	Client	Sure Partners Ltd			Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642			Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum	UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 31 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		59.85 m to 62.50 m - Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 10 degrees closely to wide spaced planar smooth very tight to partially open with occasional clay and sand infill (<1mm). [LOWER PALEOZOIC].				75		
		60.30m to 60.50m; assumed zone of core loss.		80	80			
	-93.0	60.50m to 60.55m; Non intact, recovered as: reddish brown subangular and subrounded fragments (<20mm) of coarse grained sandstone.						
61.0				95	95	90	2	60-70
	-94.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

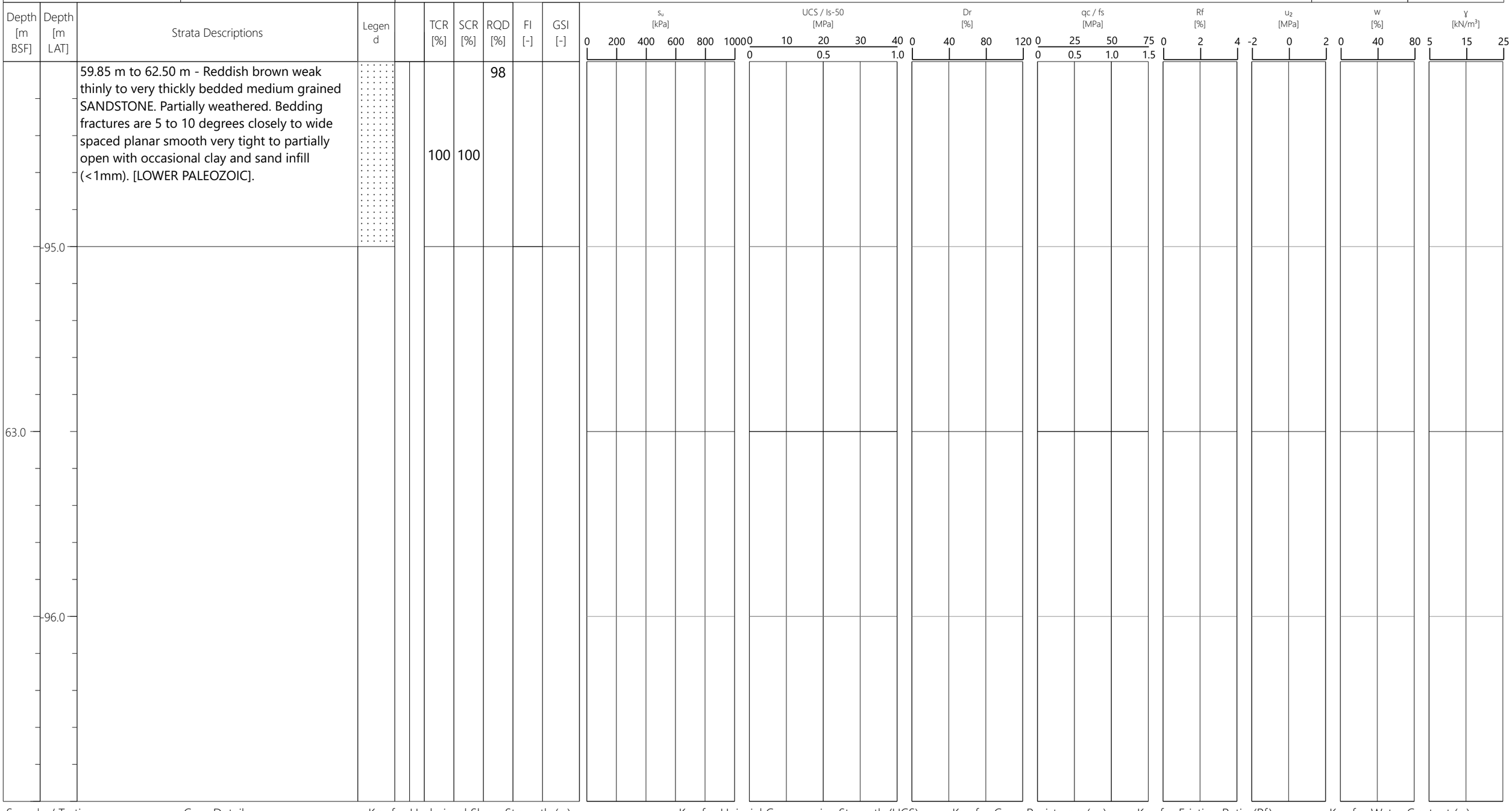
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	62.50	**BH10**
	Fugro Reference	F186642		Seabed Level [m LAT]	-32.50	
	Coordinates	301945.77 mE 5852228.48 mN	Coordinate Datum / UTM Zone 30	Date	29 06 2022 to 01 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 32 of 32

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		59.85 m to 62.50 m - Reddish brown weak thinly to very thickly bedded medium grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 10 degrees closely to wide spaced planar smooth very tight to partially open with occasional clay and sand infill (<1mm). [LOWER PALEOZOIC].		100	100	98		
	-95.0							
63.0								
	-96.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 1 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 2 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 3 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 4 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 5 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 6 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 7 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									13		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 8 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 9 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 10 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 11 of 32
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 12 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 13 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 14 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 15 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 16 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									31		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 17 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 18 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									35		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 19 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									37		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 20 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									39		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 21 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									41		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 22 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									43		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 23 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									45		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 24 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									47		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH10**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum) -32.50	Sheet 25 of 32
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									49		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 26 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
51.18	FR	0						DI	51	0 °	
51.35 - 51.37	J	20		VT	Pl	Ro		Clean.		20 °	
51.67 - 51.68	FR	10		O	Un	Ro		DI Gravel (<20mm) and sand.		10 °	
51.78 - 51.81	J	35		VT	Pl	Sm		Clean.		35 °	
51.98 - 52.01	J	25		VT	Sp	Ro		Clean.		25 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 27 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
52.15 - 52.20	NI							NI DI.			
52.22 - 52.23	BF	5		PO	Un	Ro		Sand (<0.5mm).		5 °	
52.28	BF	5		T	Pl	Ro		Clean.		5 °	
52.50	FR	0						DI.		0 °	
52.50 - 52.60	J	80		PO	Pl	Sm		Silty sand (<0.5mm).		80	
52.65 - 52.73	NI							NI DI.			
52.78 - 53.01	NI							NI DI.			
									53		
53.09 - 53.14	NI							NI DI.			
53.14 - 53.24	J	90		T	Pl	Sm		Clean.		90 °	
53.23	BF	5		VT	Pl	Sm		Clean.		5 °	
53.43	FR	0								0 °	
53.67 - 53.69	J	20		VT	Un	Ro		Clean.		20 °	
53.74 - 53.76	J	15		VT	Pl	Ro		Clean.		15 °	
53.90 - 53.93	BF	0		W	Pl	Sm		Clay (<30mm).		0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 28 of 32
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
54.09	BF	5		T	Pl	Sm		Light grey staining.		5 °	
54.31 - 54.59	J	80		VT	Pl	Sm		Clean.		80 °	
54.49	BF	5		VT	Pl	Sm		Clean.		5 °	
54.56 - 54.57	BF	10		VT	Pl	Sm		Clean.		10 °	
54.68 - 54.69	J	15		T	Pl	Sm		Clay smearing (<0.25mm).		15 °	
54.74 - 54.75	J	15		VT	Pl	Ro		Clean.		15 °	
54.89 - 54.90	J	15		VT	Pl	Ro		Clean.		15 °	
									55		
55.05 - 55.08	J	25		VT	Pl	Sm		Clean.		25 °	
55.39 - 55.42	J	25		VT	Pl	Sm		Clean.		25 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 29 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
56.17 - 56.20	J	25		VT	Pl	Ro		Clean.		25 °	
56.30 - 56.40	J	70		T	Pl	Ro		Clean.		70 °	
56.60	BF	5		T	Pl	Sm		Clay smearing (<0.25mm).		5 °	
56.73 - 56.74	BF	10		VT	Pl	Sm		Clean.		10 °	
56.80	BF	5		VT	Pl	Sm		Clean.		5 °	
56.90	BF	10		T	Pl	Sm		Clay smearing (<0.25mm).		10 °	
									57		
57.09 - 57.10	BF	10		VT	Pl	Sm		Clean.		10 °	
57.40 - 57.45	BF	10		W	Pl	Sm		Clay (<50mm).		10 °	
57.51	BF	10		O	Un	Sm		Dl.		10 °	
57.55	BF	0		PO	Pl	Sm		Clay (<0.5mm).		0 °	
57.59 - 57.63	NI							NI Dl.			
57.79 - 57.82	J	30		O	Sp	Ro		Clayey sand (<2mm).		30 °	
57.88 - 57.90	J	20		PO	Un	Ro		Clayey sand (<0.5mm).		20 °	
57.90 - 57.99	J	70		VT	Un	Ro		Clean.		70 °	
57.90 - 58.02	J	70		PO	Un	Ro		Sand (<0.5mm).		70 °	
57.98 - 57.99	BF	10		T	Pl	Ro		Clean.		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 30 of 32
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
58.02 - 58.18	NI							NI DI.			
58.30 - 58.31	BF	10		MW	Pl	Sm		Clay (<10mm).		10 °	
58.41	BF	5		T	Pl	Sm		Clay smearing (<0.1mm).		5 °	
58.59 - 58.61	J	20		W	Un	Sm		Clay (<20mm).		20 °	
58.75 - 58.79	J	15		W	Un	Sm		Clay (<40mm).		15 °	
58.96 - 58.99	BF	0		W	Pl	Sm		Clay (<30mm).		0 °	
58.99 - 59.02	NI							NI DI.	59		
59.09 - 59.10	FR										
59.12 - 59.13	FR										
59.32 - 59.33	FR										
59.47 - 59.48	BF	10		PO	Pl	Ro		Sand and clay (1mm)		10 °	
59.64 - 59.65	BF	5		T	Pl	Sm		Fine sand (<1mm)		5 °	
59.67 - 59.68	BF	10		T	Pl	Sm		Fine sand (<1mm)		10 °	
59.88 - 59.89	BF	5		PO	Pl	Sm				5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 31 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
60.50 - 60.55	FR										
61.00 - 61.01	BF	10		VT	Pl	Sm		Sand dusting (<1mm)	61	10 °	
61.17 - 61.18	BF	5		VT	Pl	Sm		Sand dusting (<1mm)		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 32 of 32
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
62.03 - 62.04	BF	5		T	Pl	Sm		Sand dusting (<1mm)		5 °	
									63		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID
Client	Sure Partners Ltd			**BH10**
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 1 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	62.50	RORC	22 06 2022	01 07 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	KH,JG,AB,CH	RF/MN	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 48.60m; Cantilever to LAT = 16.10m; LAT to Mud = 32.50m 3. All depths refer to depth below seabed level.

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
29 06 2022	19:00	0.00	0.00		
30 06 2022	06:48	6.00	6.00		
30 06 2022	19:00	19.50	19.50		
01 07 2022	07:00	34.50	34.50		
01 07 2022	23:35	62.50	62.50		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
3.00	177	3.00	177
62.50	146	61.50	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	0.50	PB	0		00:08
0.50	1.00	PB	0		00:07
1.00	1.50	PB	0		00:06
1.50	2.00	PB	0		00:04
2.00	2.50	PB	0		00:12
2.50	3.00	PB	0		00:12
3.00	3.50	PB	100	Grey	00:04
3.50	4.50	PB	100	Grey	00:01
4.50	5.00	PB	100	Grey	00:08
5.00	6.00	PB	100	Grey	00:08
6.00	6.50	PB	100	Grey	00:06
6.50	7.00	PB	100	Grey	00:06
7.00	7.50	PB	100	Grey	00:12
7.50	8.50	PB	100	Grey	00:10
8.50	9.00	PB	100	Grey	00:17
9.00	10.00	PB	100	Grey	00:06
10.00	11.00	PB	50	Grey	00:05
11.00	11.50	PB	0		00:06
11.50	12.50	PB	0		00:05
12.50	13.00	PB	0		00:04
13.00	14.00	PB	0		00:06
14.00	15.00	PB	0		00:05
15.00	16.00	PB	0		00:05
16.00	16.50	PB	0		00:05
16.50	17.50	PB	0		00:04
17.50	18.50	PB	0		00:04
18.50	19.00	PB	0		00:06
19.00	19.50	PB	0		00:05
19.50	21.00	PB	0		00:03
21.00	22.50	PB	0		00:04
22.50	24.00	PB	0		00:04
24.00	25.50	PB	0		00:03
25.50	27.00	PB	0		00:04
27.00	28.50	PB	0		00:04
28.50	28.90	PB	0		
28.90	29.00	PB	0		
29.00	29.50	PB	0		
29.50	31.00	PB	0		
31.00	31.50	PB	0		
31.50	32.50	PB	0		
32.50	33.60	PB	0		
33.60	34.50	PB	0		
34.50	36.00	PB	0		
36.00	36.50	PB	0		
36.50	37.00	PB	0		
37.00	38.00	PB	0		
38.00	38.50	PB	0		
38.50	40.00	PB	0		
40.00	41.00	PB	0		
41.00	41.75	PB	0		
41.75	42.50	PB	0		
42.50	43.50	PB	0		
43.50	44.50	PB	0		
44.50	45.00	PB	0		
45.00	46.50	PB	0		
46.50	48.00	PB	0		
48.00	49.50	PB	0		
49.50	51.00	PB	0		
51.00	52.50	PB	0		
52.50	54.00	PB	0		
54.00	55.50	PB	0		
55.50	56.50	PB	0		
56.50	58.00	PB	0		
58.00	59.50	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
19.50	21.00	102
21.00	22.50	102
22.50	24.00	102
24.00	25.50	102
25.50	27.00	102
27.00	28.50	102
28.50	29.00	102
29.00	29.50	102
29.50	31.00	102
31.50		
31.50	32.50	102
32.50	33.60	102
33.60	34.50	102
34.50	35.00	102
35.00	36.50	102
38.50	40.00	102
40.00	41.00	102
41.00	41.75	102
41.75	42.50	102
42.50	43.50	102
43.50	44.50	102
44.50	45.00	102
45.00	46.50	102
46.50	48.00	102
48.00	49.50	102
49.50	51.00	102
51.00	52.50	102
52.50	54.00	102
54.00	55.50	102
55.50	56.50	102
56.50	58.00	102
58.00	59.50	102
59.50	60.50	102
60.50	61.50	102
61.50	62.50	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	62.50	Arisings	02 07 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	02 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH10**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E301945.77 N5852228.48	Ground Elevation (m Datum)	-32.50	Sheet 2 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
59.50	60.50	PB	0		
60.50	61.50	PB	0		
61.50	62.50	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

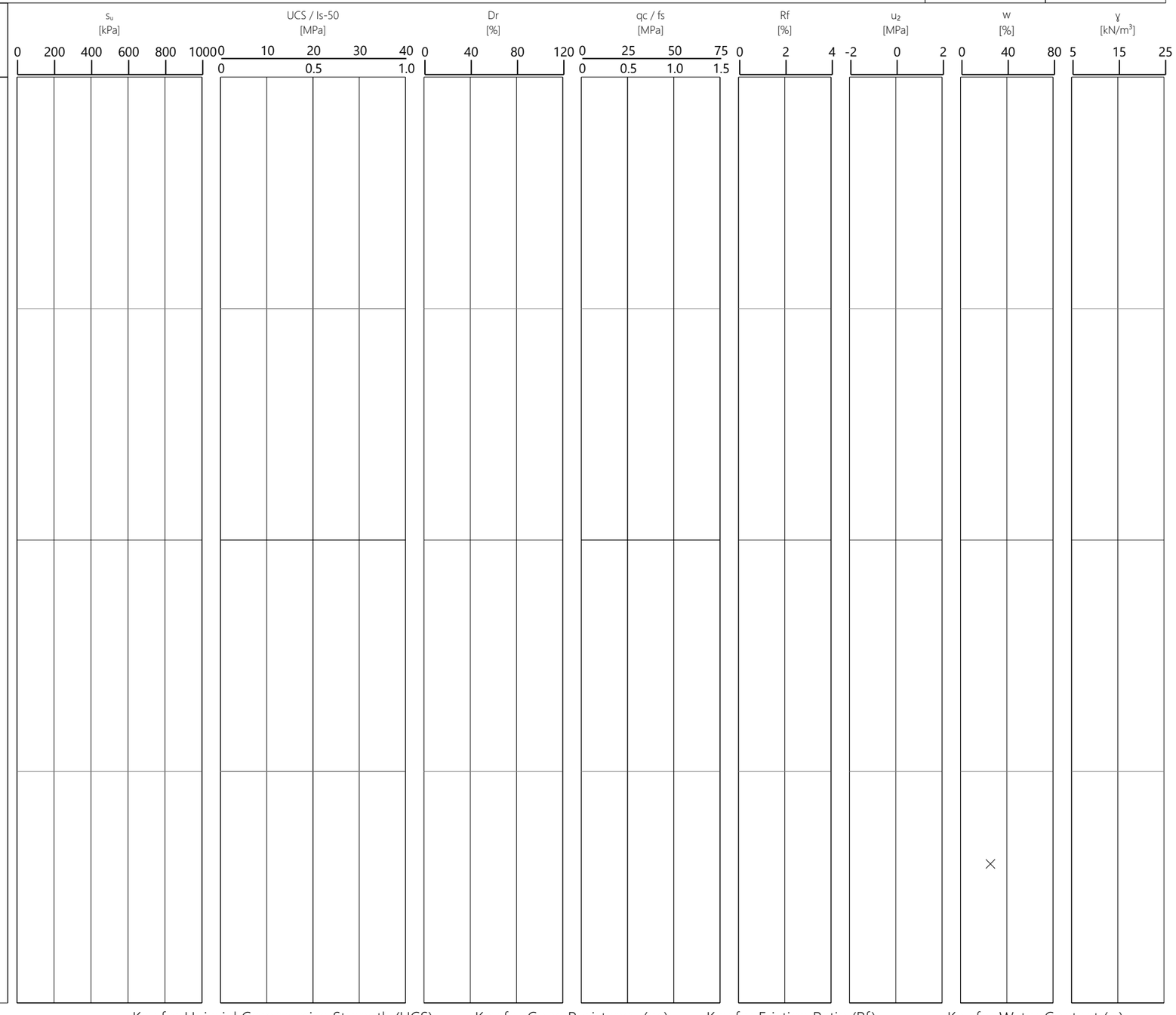
Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	02 09 2022

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 1 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
0		0.00 m to 1.50 m - NO RECOVERY						
1.0	-21.0							
	-22.0	1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS] 1.50m to 2.45m; rare gravel. Gravel is angular to subrounded fine and medium of quartz and chert.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

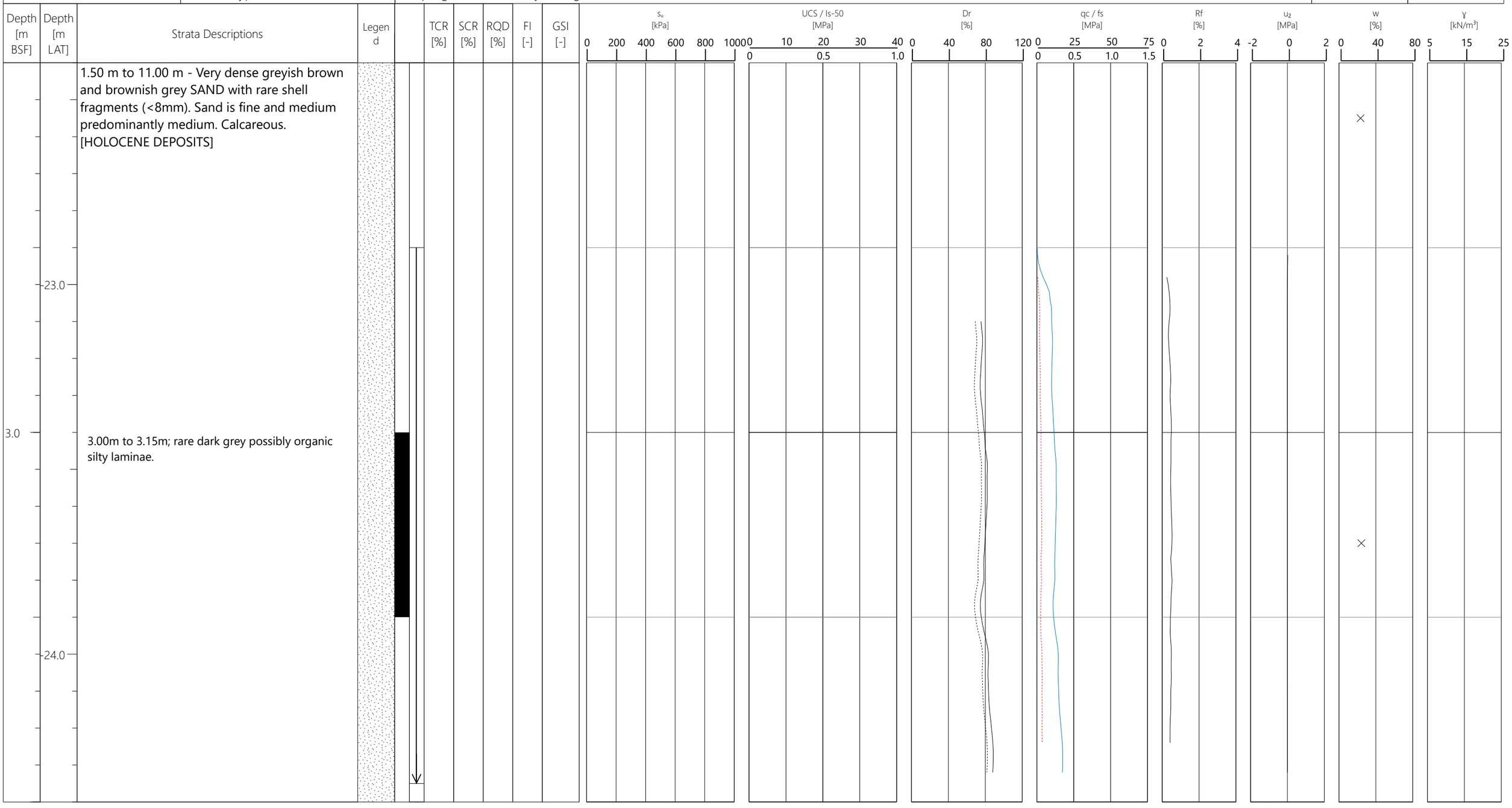
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
3.0	-23.0	1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS]						
	-24.0	3.00m to 3.15m; rare dark grey possibly organic silty laminae.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

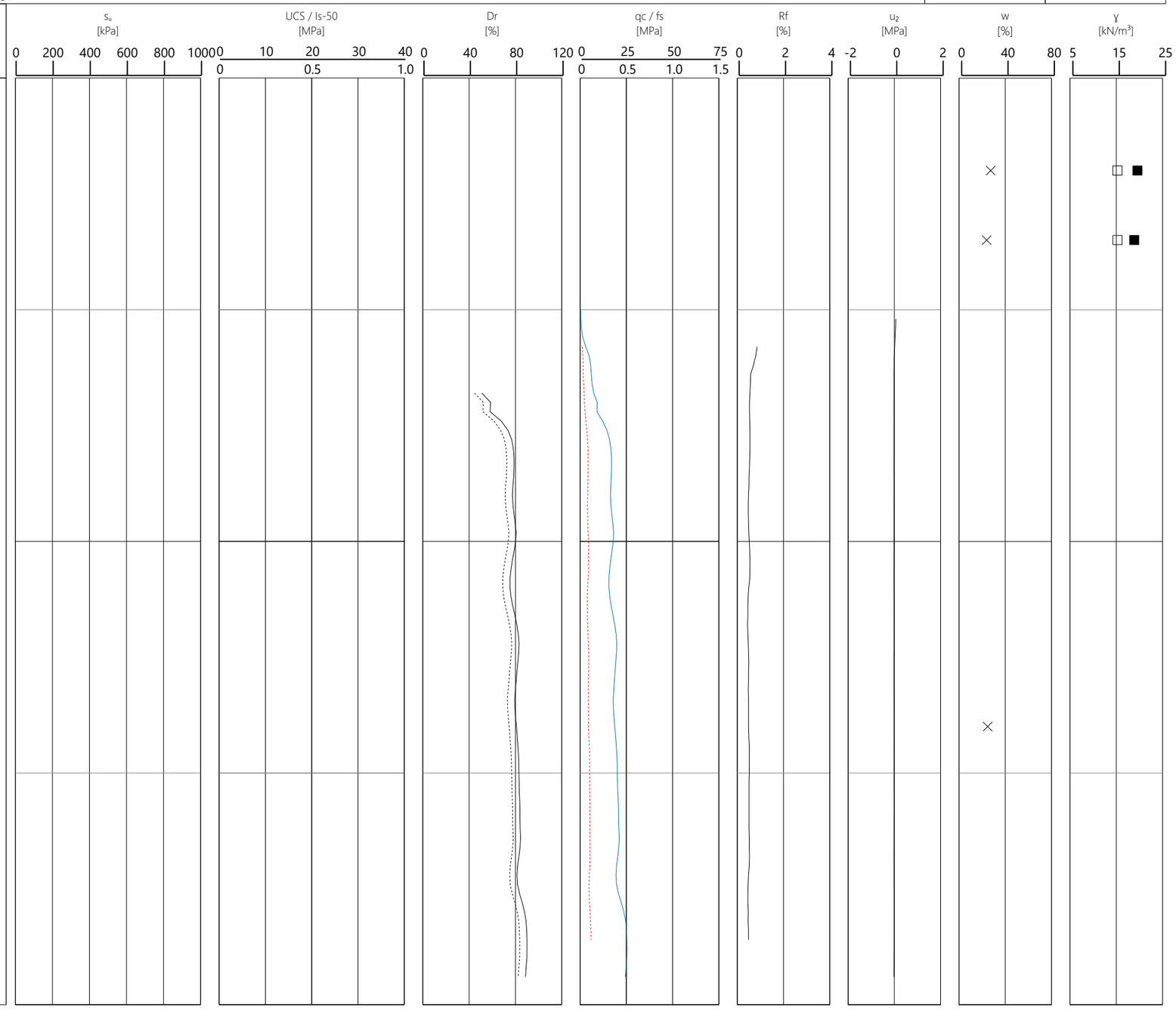
Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
0		1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS]						
5.0	-25.0							

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS]						
	-27.0							
7.0		7.00m to 8.00m; rare dark grey possibly organic silty laminae.						
	-28.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS]						
	-29.0							
9.0		9.20m to 9.50m; no recovery.						
	-30.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:

- Push sample recovery
- Cone penetration test

Core Details:

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
FI	Fracture Index
GSI	Geological Strength Index

Key for Undrained Shear Strength (s_u):

- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):

- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)

- ⊠ Point Load Index

Key for Cone Resistance (qc):

- Cone Resistance

Key for Sleeve Friction (fs):

- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):

- Pore Water Pressure

Key for Water Content (w)

- × Water Content

Key for Unit Weight (γ)

- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.160

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		1.50 m to 11.00 m - Very dense greyish brown and brownish grey SAND with rare shell fragments (<8mm). Sand is fine and medium predominantly medium. Calcareous. [HOLOCENE DEPOSITS]						
11.0	-31.0	11.00 m to 18.50 m - Very dense greyish brown and brownish grey locally silty SAND with rare shell fragments (<2mm). Sand is fine and medium. Calcareous. Slightly micaceous. [HOLOCENE DEPOSITS]						
	-32.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

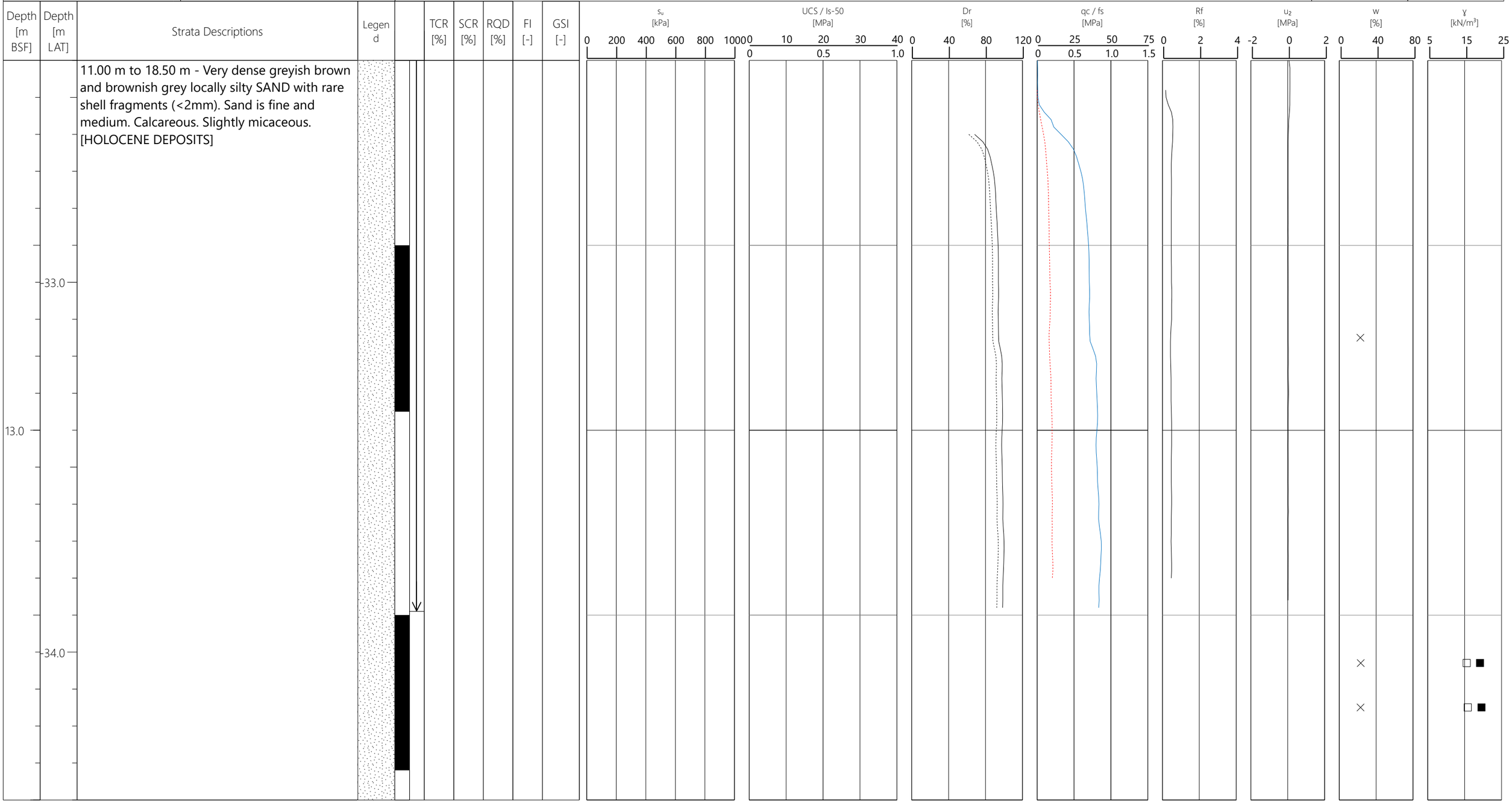
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 7 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.00 m to 18.50 m - Very dense greyish brown and brownish grey locally silty SAND with rare shell fragments (<2mm). Sand is fine and medium. Calcareous. Slightly micaceous. [HOLOCENE DEPOSITS]						
13.0	-33.0							
	-34.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

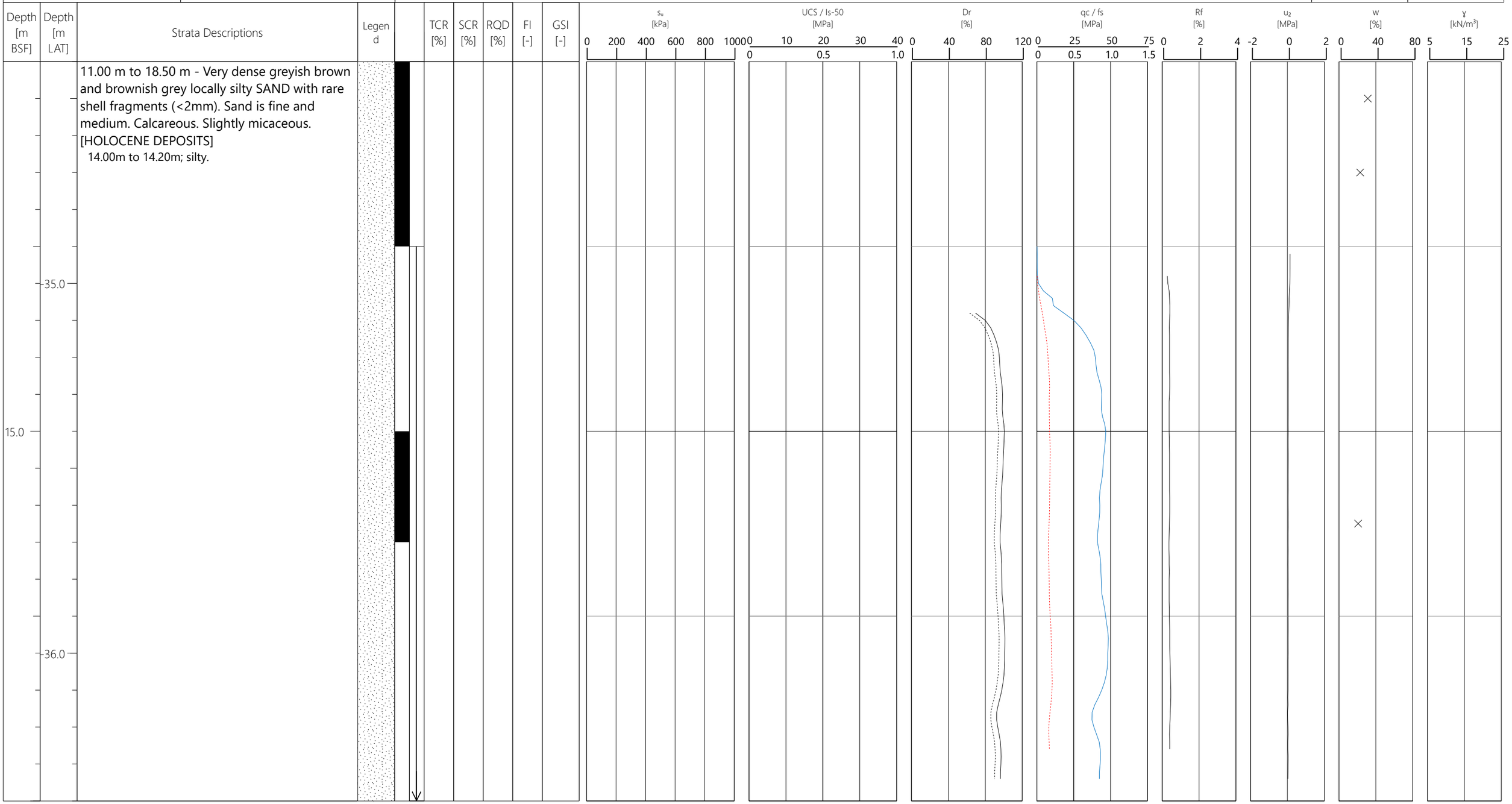
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.162

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	53.50	**BH12**
Fugro Reference	F186642			Seabed Level [m LAT]	-20.40	
Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum	UTM Zone 30	Date	20 06 2022 to 23 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 8 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.00 m to 18.50 m - Very dense greyish brown and brownish grey locally silty SAND with rare shell fragments (<2mm). Sand is fine and medium. Calcareous. Slightly micaceous. [HOLOCENE DEPOSITS] 14.00m to 14.20m; silty.						
15.0	-35.0							
	-36.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

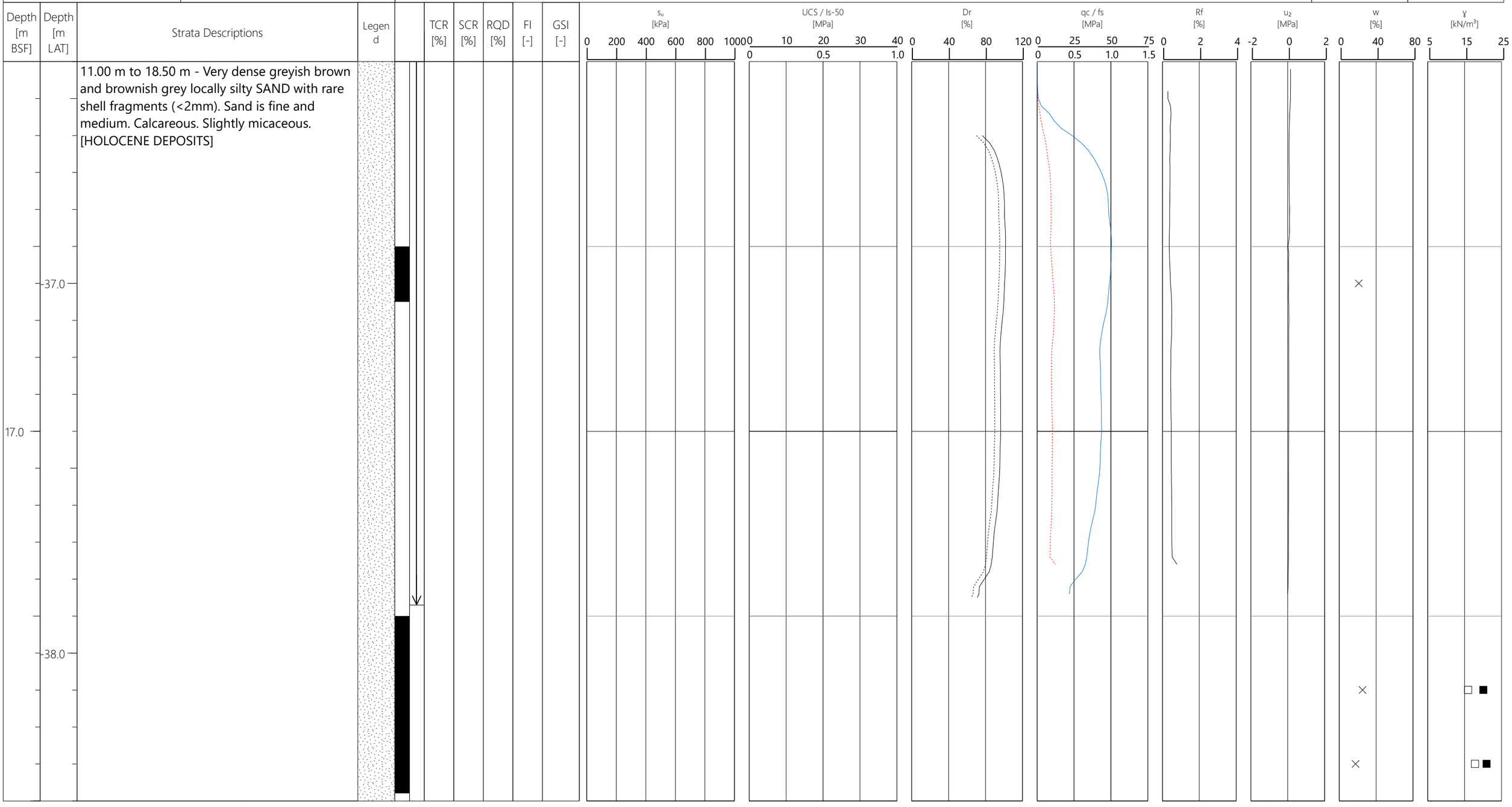
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.00 m to 18.50 m - Very dense greyish brown and brownish grey locally silty SAND with rare shell fragments (<2mm). Sand is fine and medium. Calcareous. Slightly micaceous. [HOLOCENE DEPOSITS]						
	-37.0							
17.0								
	-38.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

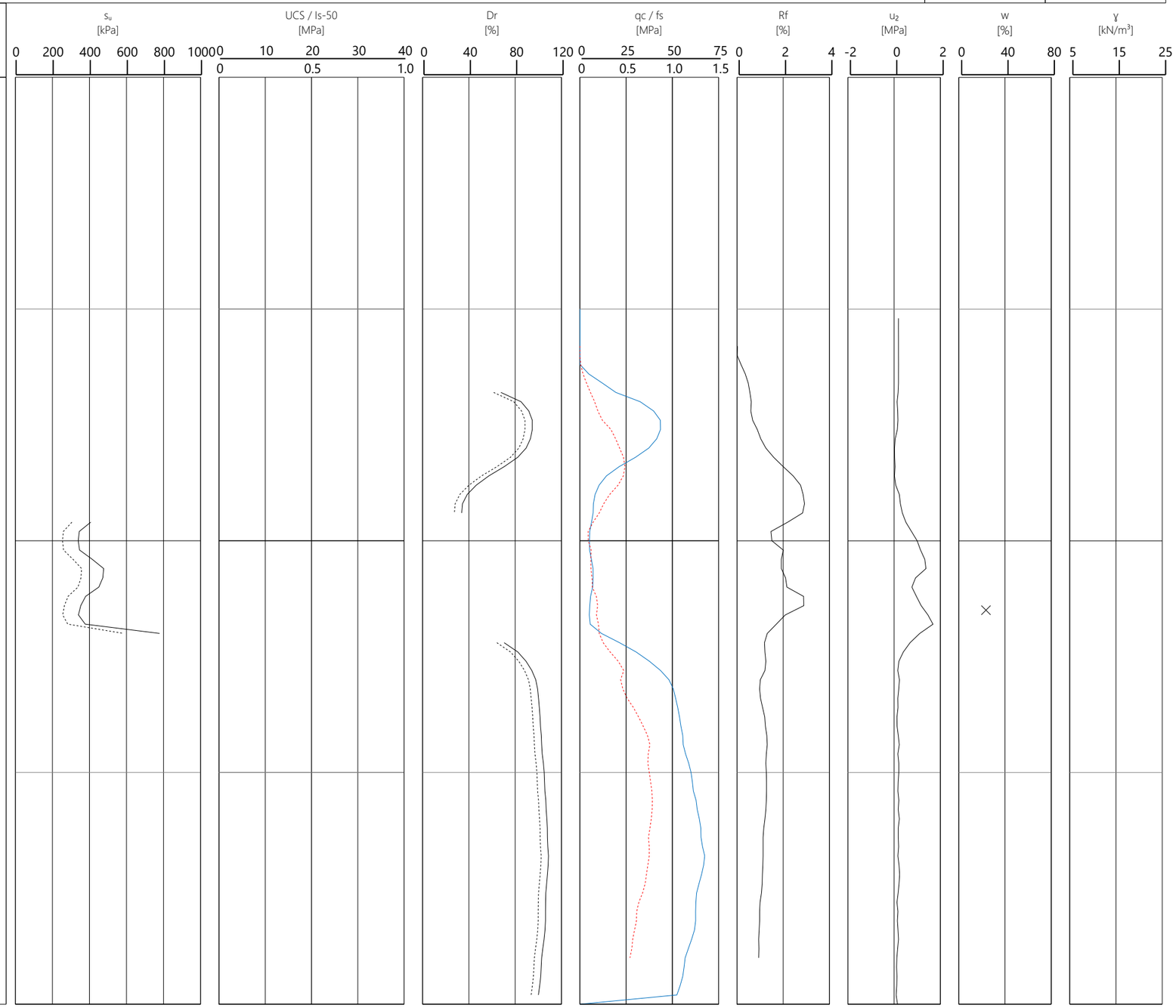
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.00 m to 18.50 m - Very dense greyish brown and brownish grey locally silty SAND with rare shell fragments (<2mm). Sand is fine and medium. Calcareous. Slightly micaceous. [HOLOCENE DEPOSITS] 18.00m to 18.05m; no recovery.						
	-39.0	18.50 m to 22.70 m - Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY with occasional dustings and pockets (<70 x 40mm) of silt and fine sand. Sand is fine. [CARDIGAN BAY FORMATION]						
19.0								
	-40.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

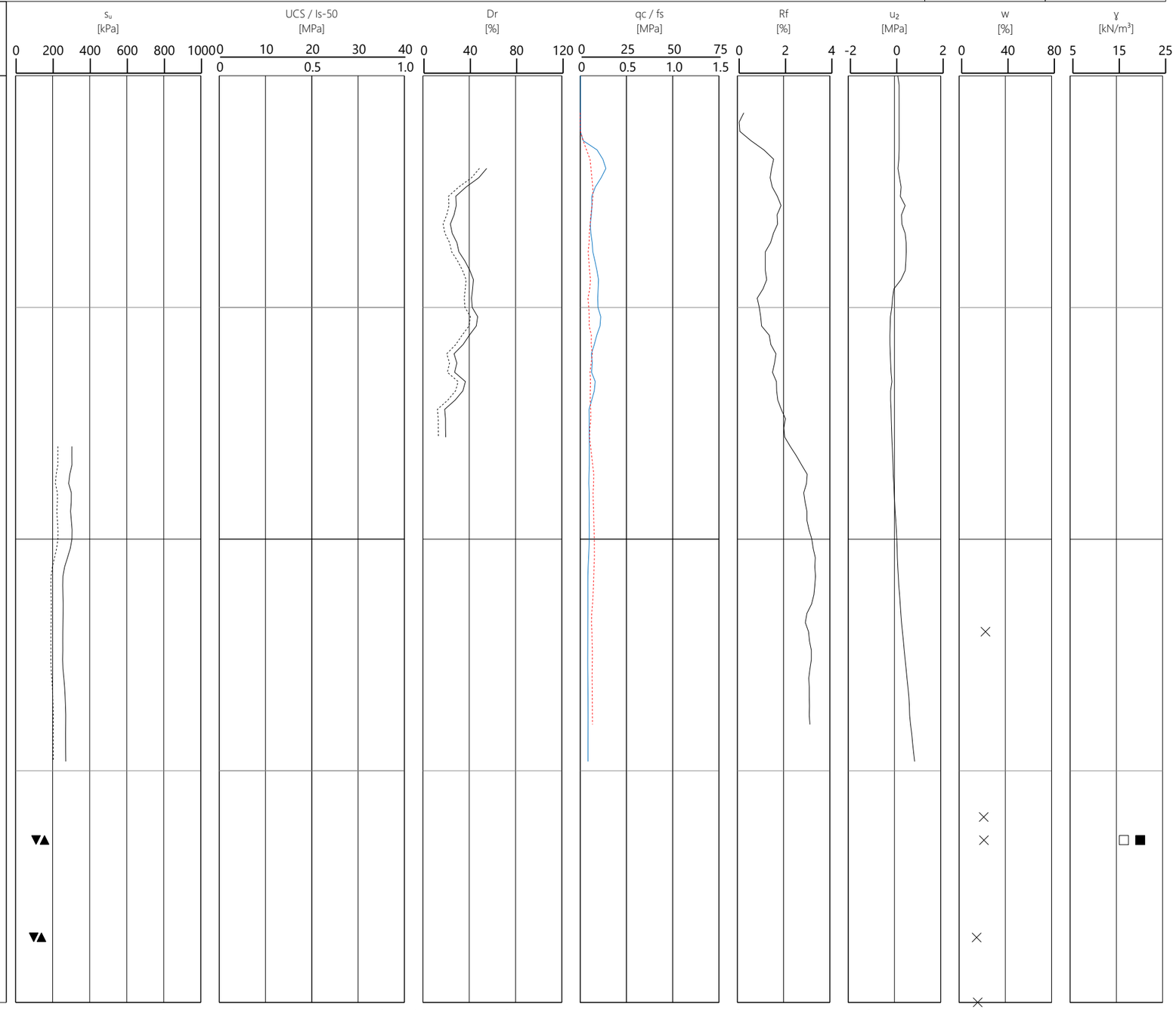
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	53.50	**BH12**
Fugro Reference	F186642			Seabed Level [m LAT]	-20.40	
Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum	UTM Zone 30	Date	20 06 2022 to 23 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 11 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		18.50 m to 22.70 m - Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY with occasional dustings and pockets (<70 x 40mm) of silt and fine sand. Sand is fine. [CARDIGAN BAY FORMATION]						
	-41.0							
21.0								
	-42.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests performed on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

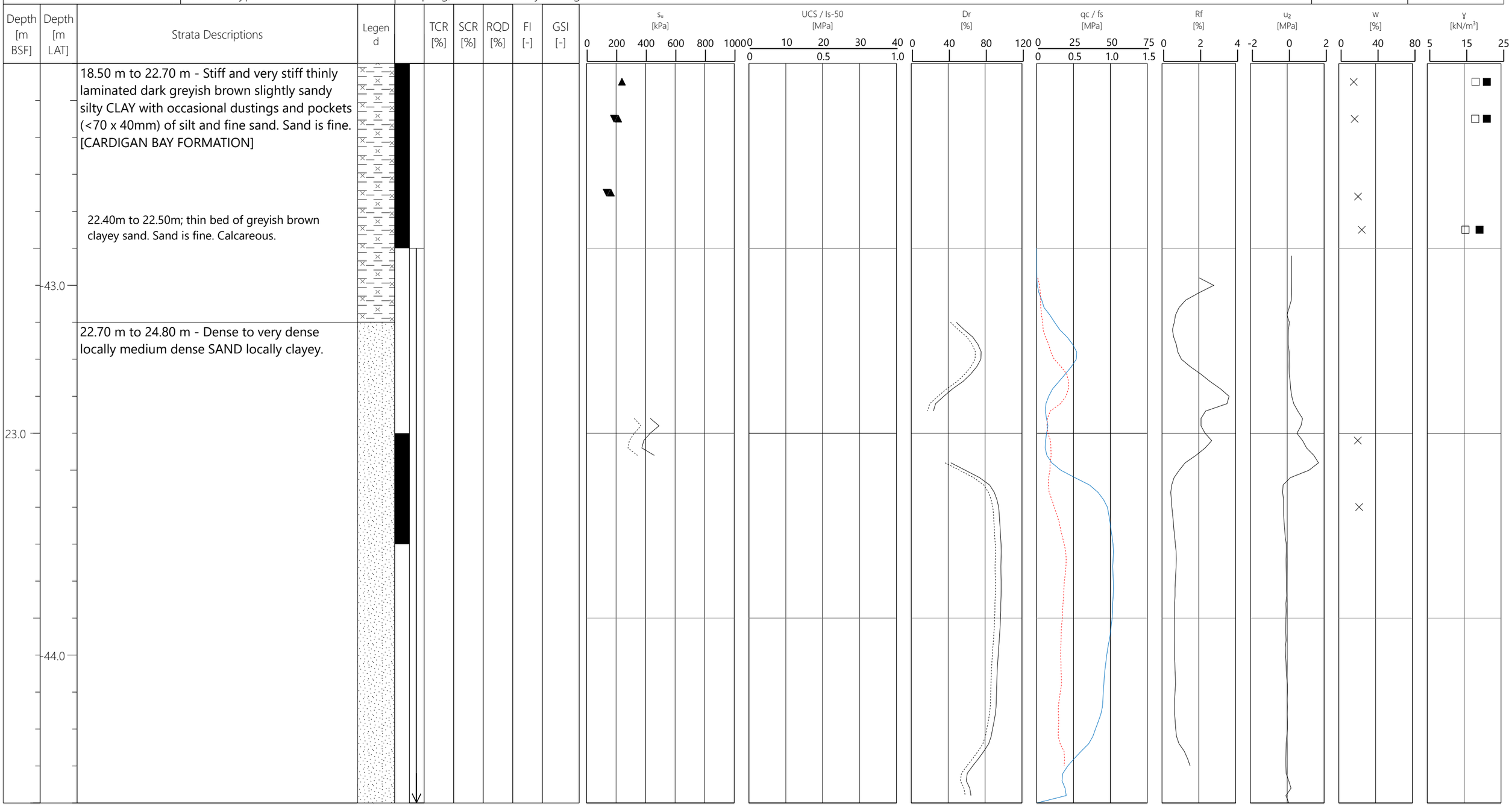
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 12 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		18.50 m to 22.70 m - Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY with occasional dustings and pockets (<70 x 40mm) of silt and fine sand. Sand is fine. [CARDIGAN BAY FORMATION]						
		22.40m to 22.50m; thin bed of greyish brown clayey sand. Sand is fine. Calcareous.						
	-43.0							
		22.70 m to 24.80 m - Dense to very dense locally medium dense SAND locally clayey.						
	-44.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

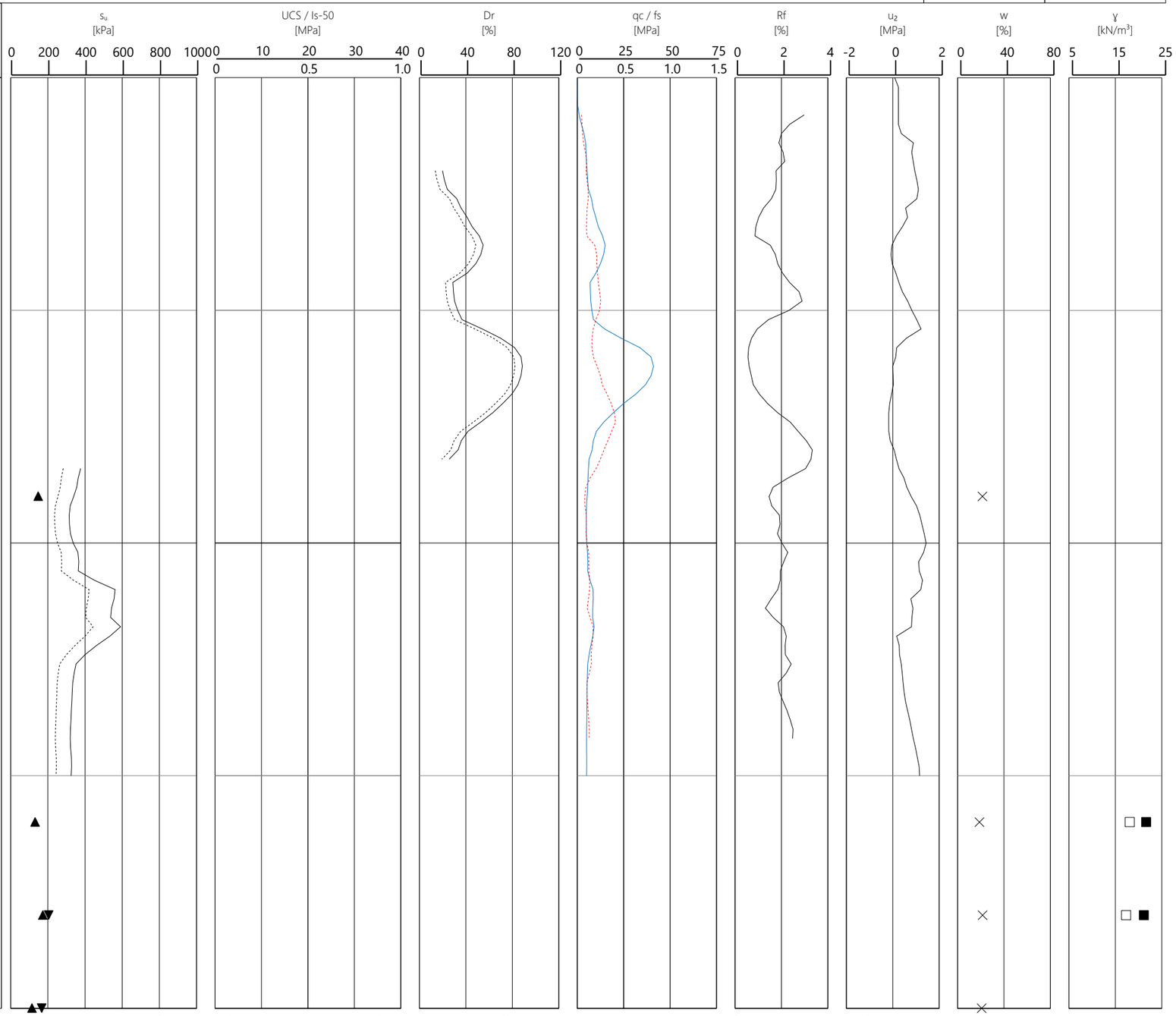
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.167

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		22.70 m to 24.80 m - Dense to very dense locally medium dense SAND locally clayey.						
		24.50m to 24.67m; thin bed of clayey sand. Sand is fine.						
	-45.0							
		24.80 m to 27.27 m - Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY with occasional dustings and pockets (<70 x 40mm) of silt and fine sand. Sand is fine. [CARDIGAN BAY FORMATION]						
25.0		24.89m to 25.13m; medium bed of silt. Recovered as firm.						
	-46.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

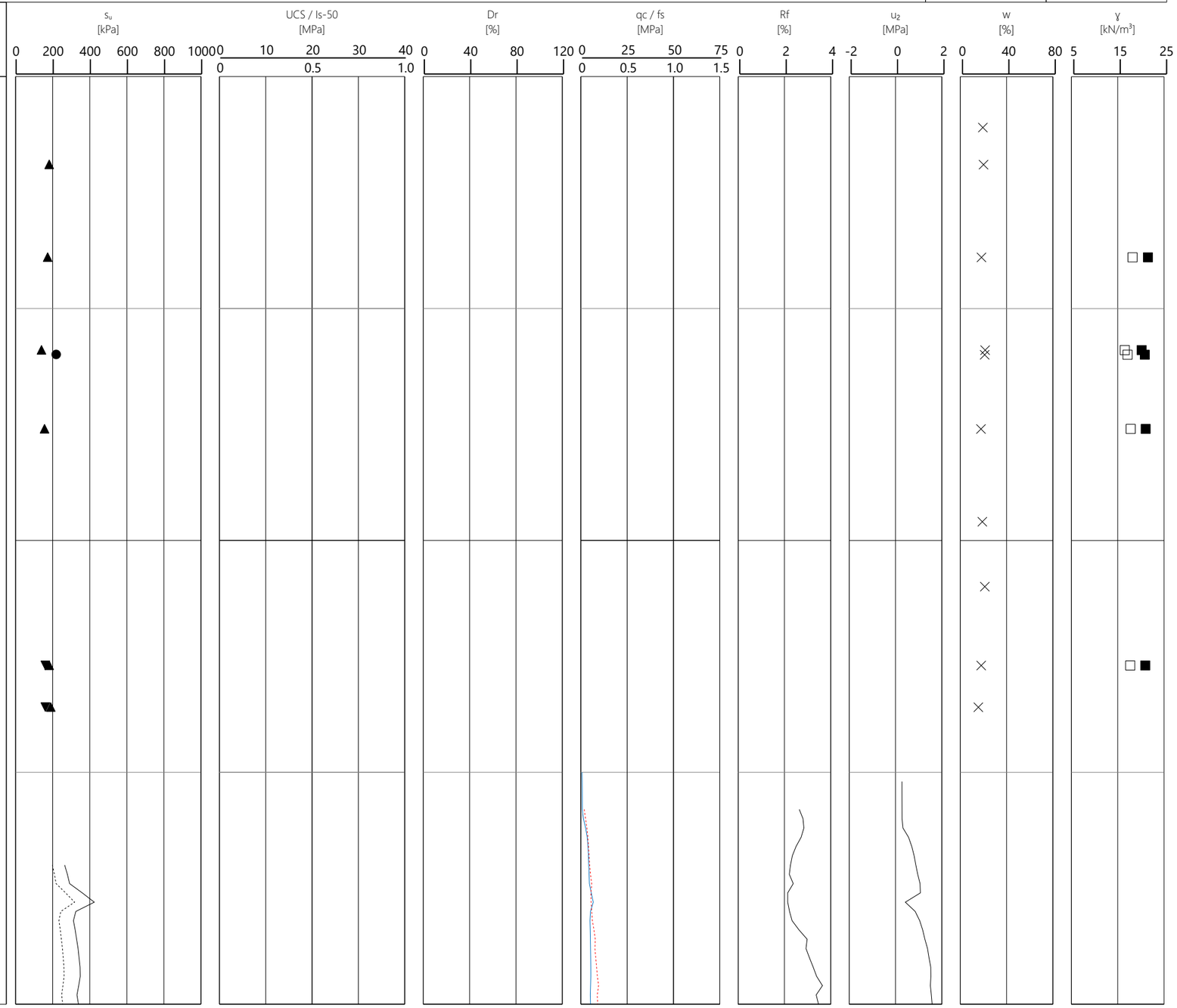
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.168

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 14 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		24.80 m to 27.27 m - Stiff and very stiff thinly laminated dark greyish brown slightly sandy silty CLAY with occasional dustings and pockets (<70 x 40mm) of silt and fine sand. Sand is fine. [CARDIGAN BAY FORMATION]						
	-47.0							
27.0								
		27.27 m to 32.15 m - Stiff thinly laminated dark grey slightly gravelly silty CLAY. Gravel is subangular to rounded fine to coarse of basalt, quartz, siltstone and flint. [CARDIGAN BAY FORMATION]						
	-48.0							



Sample / Testing:

- Push sample recovery
- Cone penetration test

Core Details:

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
FI	Fracture Index
GSI	Geological Strength Index

Key for Undrained Shear Strength (s_u):

- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):

- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)

- ⊠ Point Load Index

Key for Cone Resistance (qc):

- Cone Resistance

Key for Sleeve Friction (fs):

- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):

- Pore Water Pressure

Key for Water Content (w)

- × Water Content

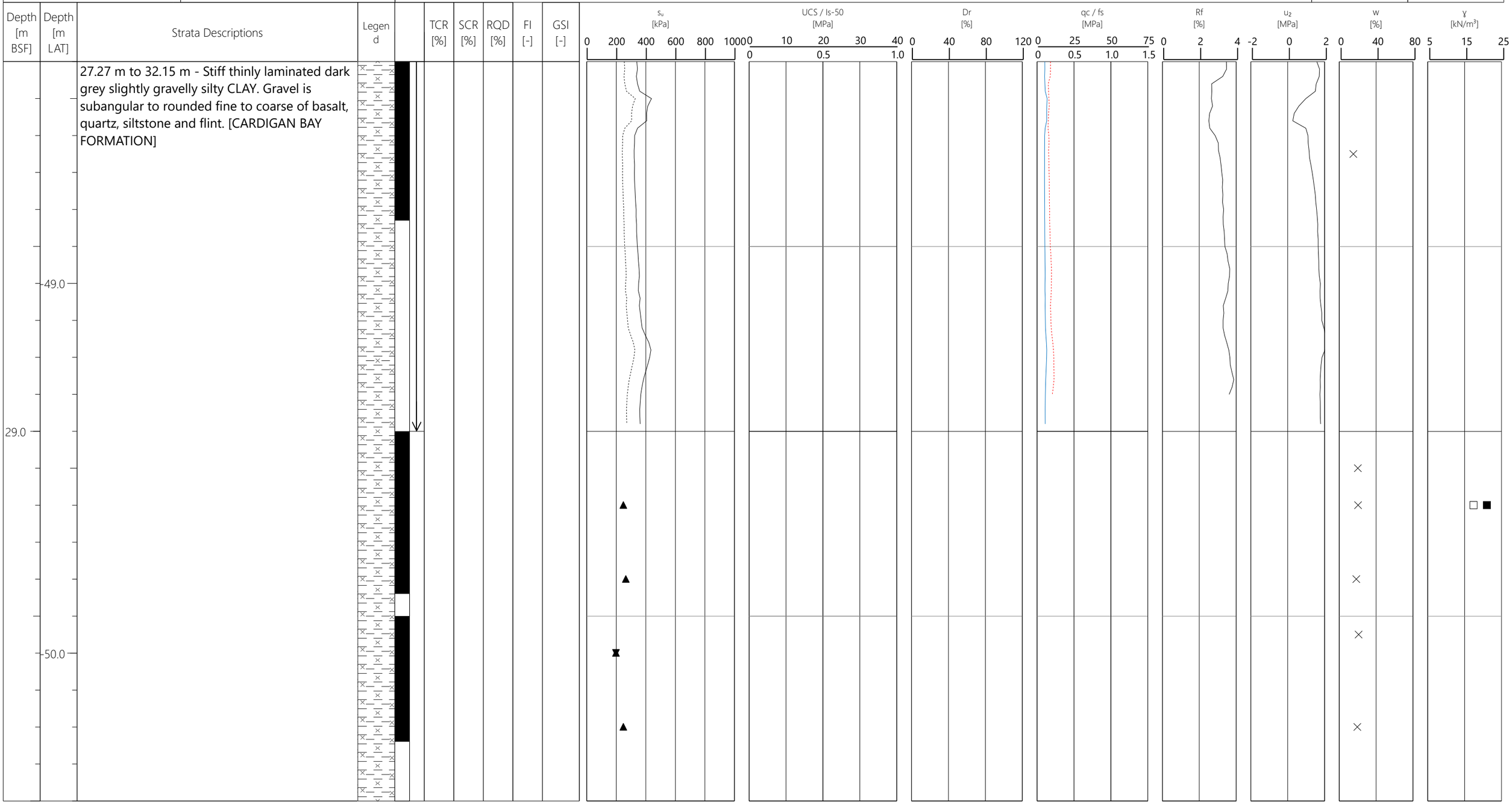
Key for Unit Weight (γ)

- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.169

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.27 m to 32.15 m - Stiff thinly laminated dark grey slightly gravelly silty CLAY. Gravel is subangular to rounded fine to coarse of basalt, quartz, siltstone and flint. [CARDIGAN BAY FORMATION]						
	-49.0							
29.0								
	-50.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

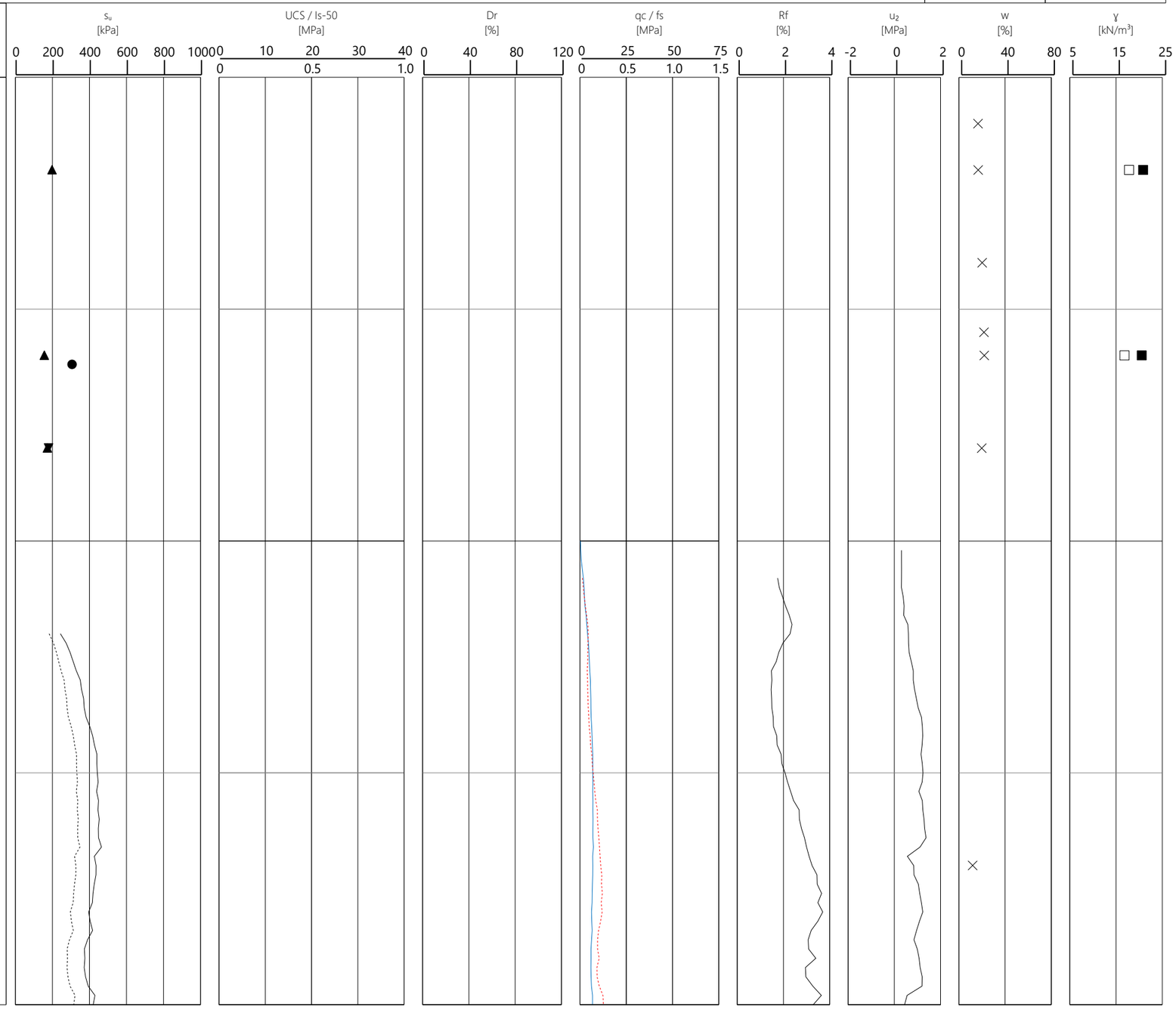
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.170

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 16 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.27 m to 32.15 m - Stiff thinly laminated dark grey slightly gravelly silty CLAY. Gravel is subangular to rounded fine to coarse of basalt, quartz, siltstone and flint. [CARDIGAN BAY FORMATION]						
	-51.0							
31.0								
		31.50m to 31.94m; rare pyrite nodules (<6mm x 4mm).						
	-52.0							
		31.94m to 32.00m; very thin bed of slightly						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

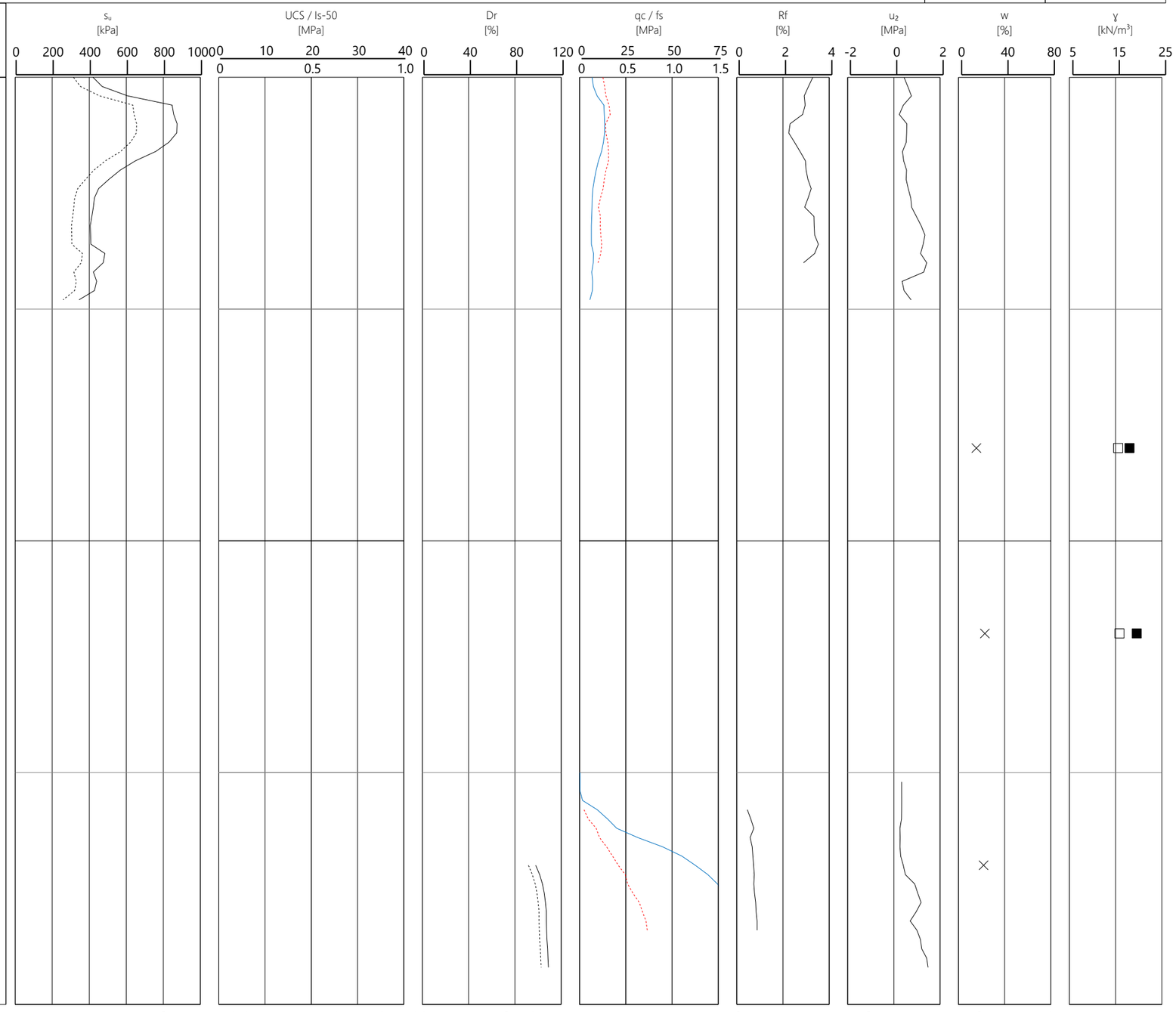
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 17 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.27 m to 32.15 m - Stiff thinly laminated dark grey slightly gravelly silty CLAY. Gravel is subangular to rounded fine to coarse of basalt, quartz, siltstone and flint. [CARDIGAN BAY FORMATION]						
		31.94m to 32.00m; very thin bed of slightly gravelly clayey sand. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of quartz and basalt.						
		32.15 m to 34.60 m - Brown slightly gravelly clayey SAND with occassional shell fragments (<3mm). Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of siltstone, basalt and quartz. [CARDIGAN BAY FORMATION]						
	53.0							
		32.65m to 32.75m; thin bed of very sandy clay. Sand is fine. Recovered as soft.						
	33.0							
		33.10m to 33.40m; without clay or gravel.						
		33.50m to 33.55m; very clayey.						
		33.50m to 34.00m; light brown.						
	54.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

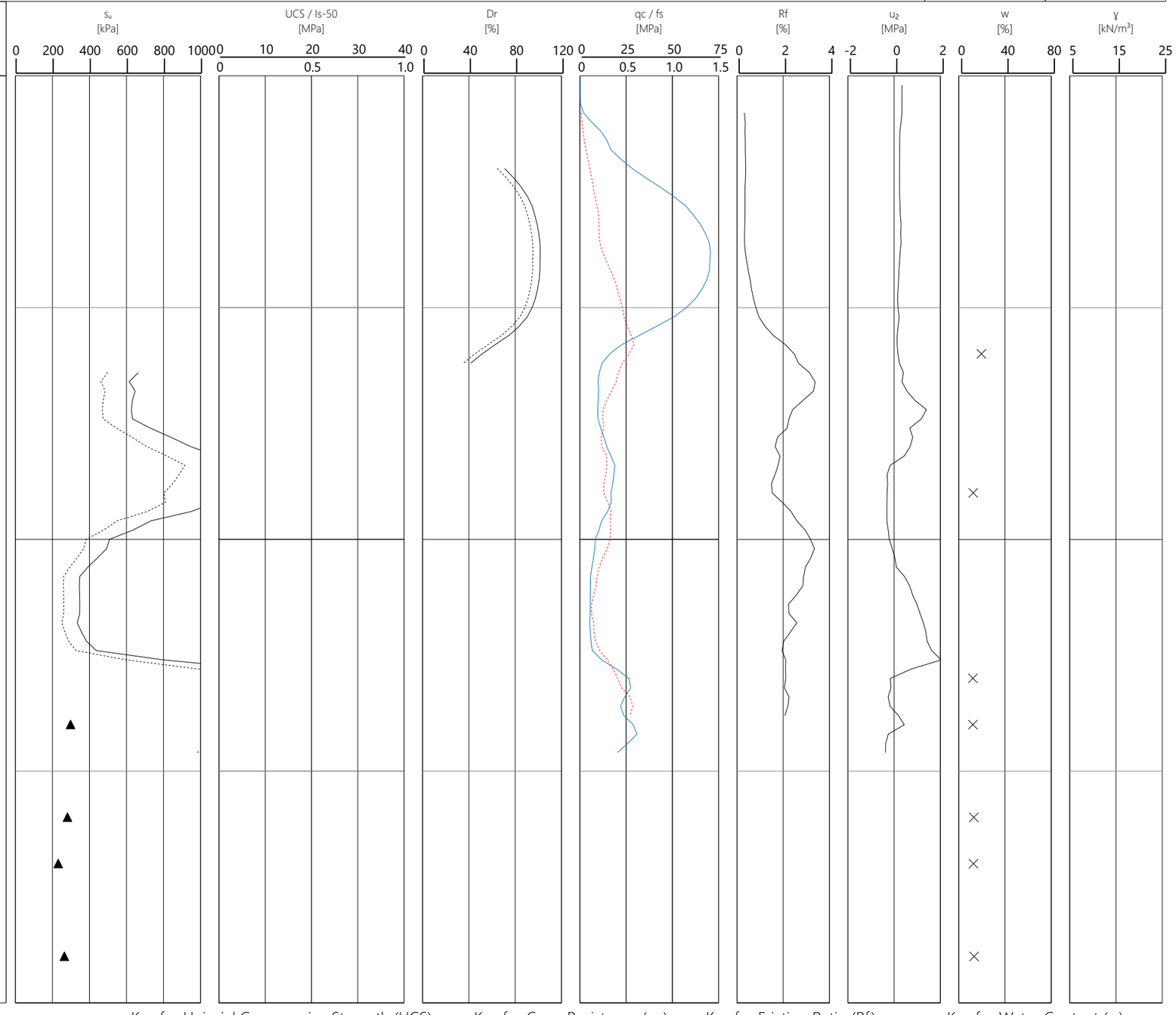
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 18 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		32.15 m to 34.60 m - Brown slightly gravelly clayey SAND with occassional shell fragments (<3mm). Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of siltstone, basalt and quartz. [CARDIGAN BAY FORMATION]						
	-55.0	34.60 m to 41.60 m - Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of siltstone, flint and quartz. [CARDIGAN BAY FORMATION]						
		34.75m to 34.86m; thin bed of clayey sand. Sand is fine to coarse.						
	-56.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

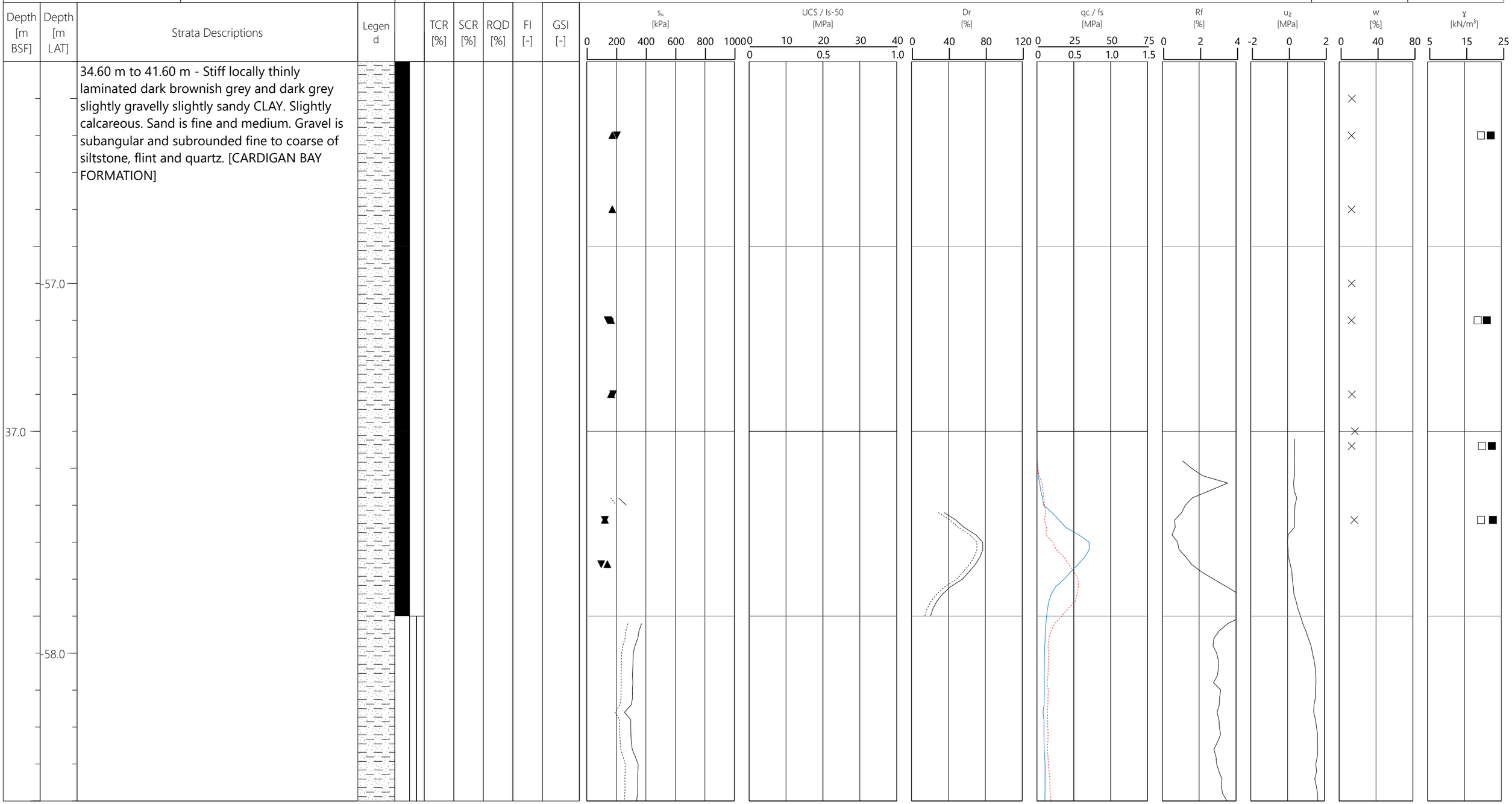
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 19 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		34.60 m to 41.60 m - Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of siltstone, flint and quartz. [CARDIGAN BAY FORMATION]						
	-57.0							
37.0								
	-58.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

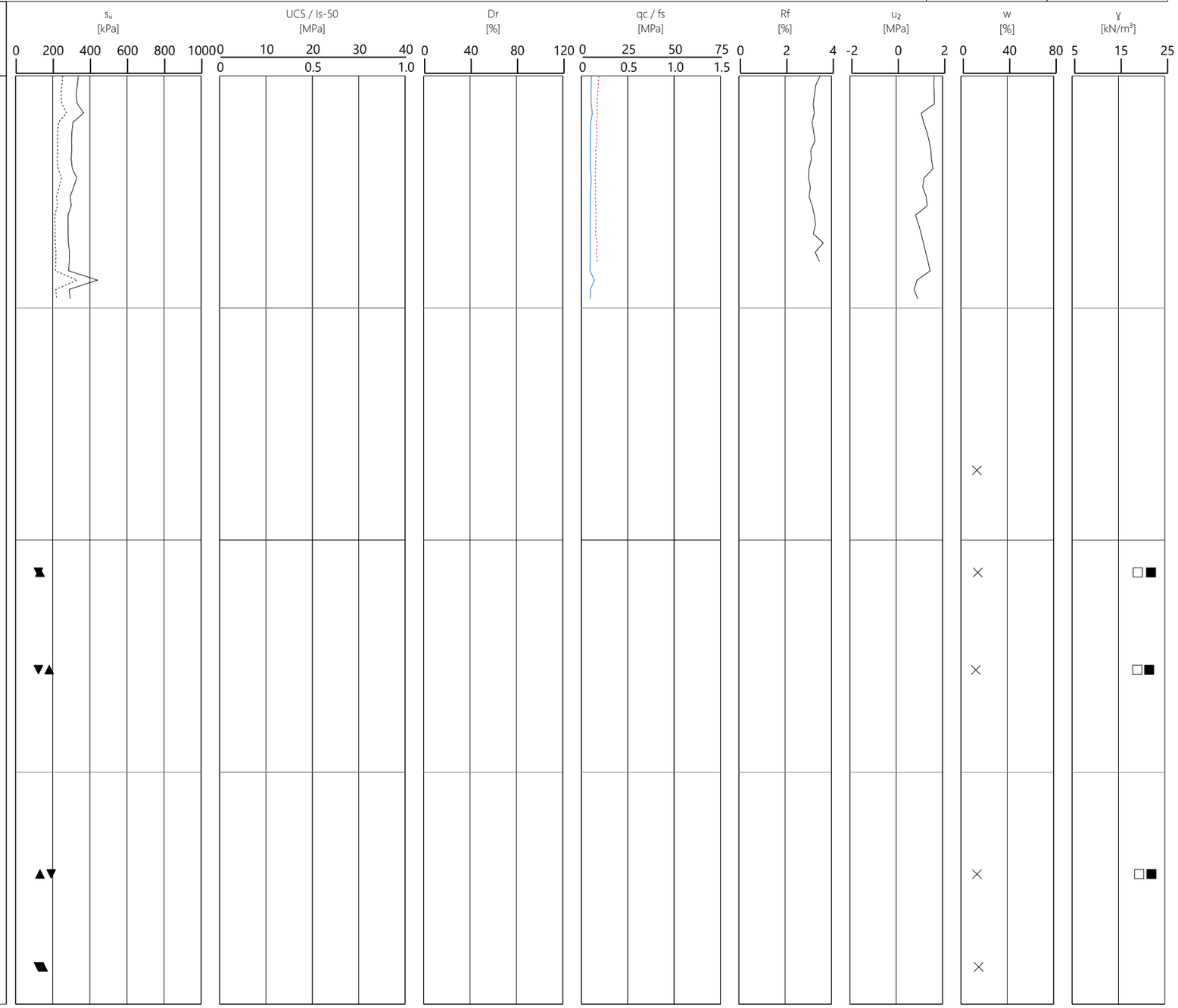
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.174

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 20 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
39.0	-59.0	34.60 m to 41.60 m - Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of siltstone, flint and quartz. [CARDIGAN BAY FORMATION]						
60.0								



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

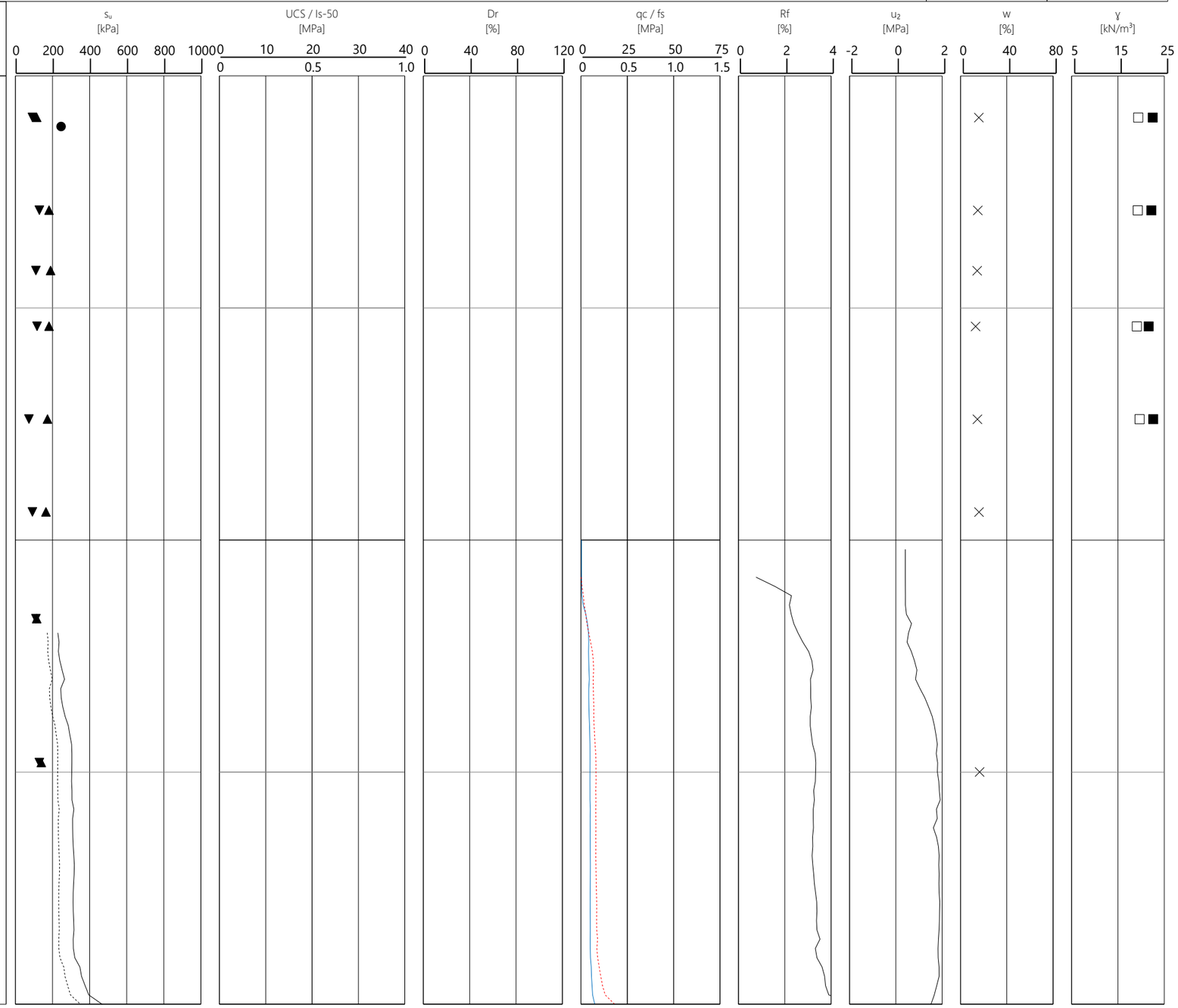
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	53.50	**BH12**
Fugro Reference	F186642			Seabed Level [m LAT]	-20.40	
Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum	UTM Zone 30	Date	20 06 2022 to 23 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 21 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		34.60 m to 41.60 m - Stiff locally thinly laminated dark brownish grey and dark grey slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of siltstone, flint and quartz. [CARDIGAN BAY FORMATION]						
41.0	-61.0							
		41.60 m to 42.59 m - Very stiff brownish red slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine. Gravel is angular and subangular fine to coarse of siltstone, sandstone and mudstone lithorelicts. Reworked residual soil of weathered mudstone. [CARDIGAN BAY FORMATION]		100	0		0	
	-62.0	41.60m to 41.80m; becoming dark reddish brown.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.176

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 22 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.60 m to 42.59 m - Very stiff brownish red slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine. Gravel is angular and subangular fine to coarse of siltstone, sandstone and mudstone lithorelicts. Reworked residual soil of weathered mudstone. [CARDIGAN BAY FORMATION] 41.85m to 42.05m; gravel is angular to rounded fine to coarse of basalt, quartz, sandstone, siltstone and mudstone. 42.50m to 42.59m; gravelly.						
	63.0	42.59 m to 44.00 m - Moderately weak and medium strong brownish red fine grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 20 degrees closely and medium spaced undulating locally planar smooth tight to open with clay infill (<1mm) locally non-penetrative black staining (possibly manganese) on surfaces. Joints are 30 and 70 degrees medium spaced planar smooth and rough tight to open with clay infill (<1mm). [LOWER PALAEOZOIC]		100	87	81	4	40-45
	43.0	43.33m to 43.67m; medium bed of medium strong medium grained sandstone with rare black speckling.						
	64.0	43.64m to 43.67m; very thin bed of weak reddish brown siltstone. 43.67m to 43.70m; non intact recovered as sandy subangular fragments (<50mm) of mudstone. 43.70m to 43.80m; fracture infill of firm reddish brown slightly sandy clay. Sand is fine and medium.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

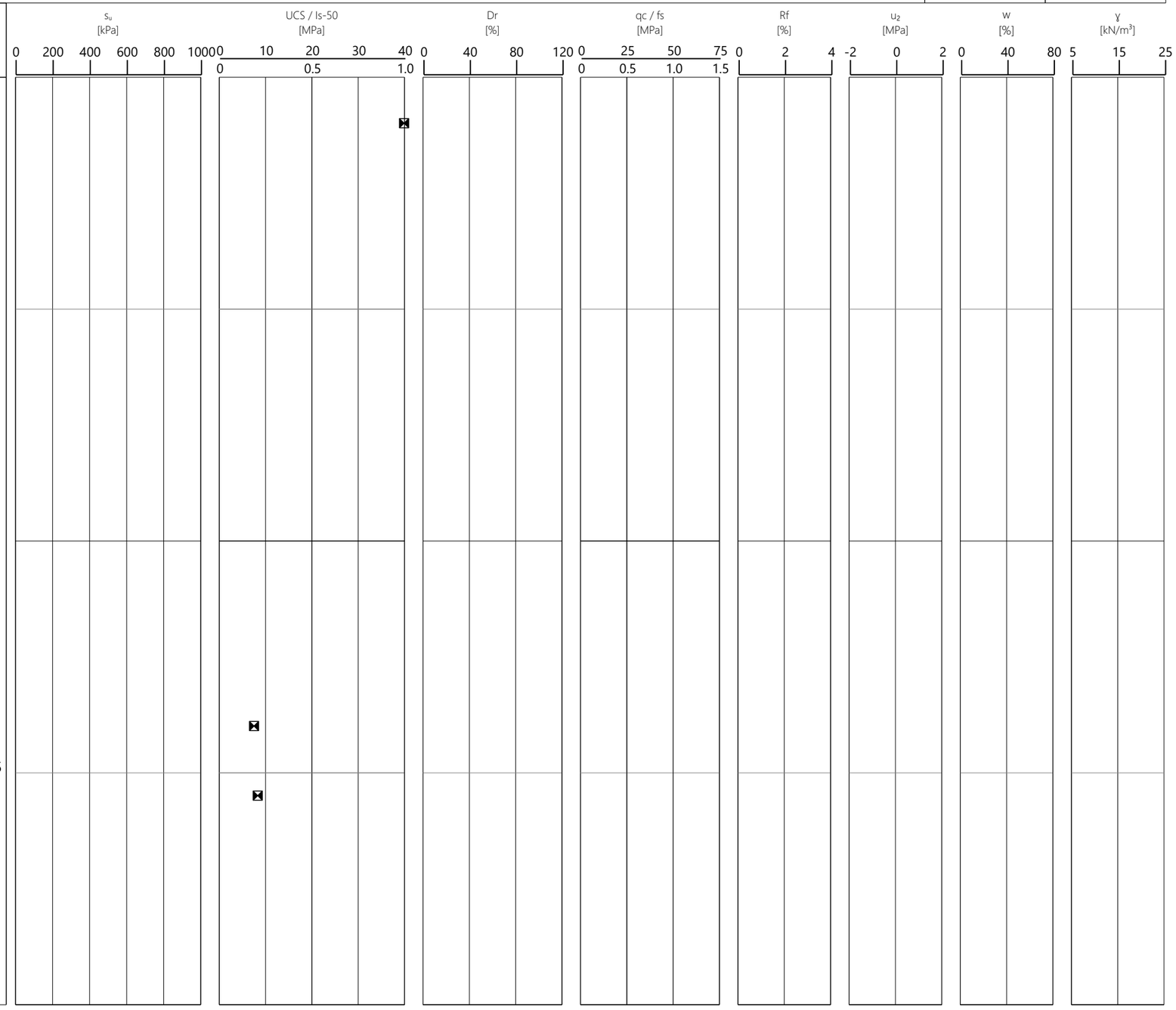
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	53.50	**BH12**
Fugro Reference	F186642			Seabed Level [m LAT]	-20.40	
Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum	UTM Zone 30	Date	20 06 2022 to 23 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 23 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		44.00 m to 46.97 m - Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 20 degrees closely locally widely spaced undulating and planar smooth locally rough very tight to open with predominantly clay infill (<0.25mm) locally with black staining (possibly manganese). [LOWER PALAEOZOIC]						
		44.22m to 44.92m; very closely spaced very thin and thin beds of light grey medium grained sandstone.						
	65.0			100	100	100		
	45.0						2	50-55
	66.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 24 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		44.00 m to 46.97 m - Moderately weak and medium strong thinly and thickly laminated dark reddish brown locally light grey medium grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 20 degrees closely locally widely spaced undulating and planar smooth locally rough very tight to open with predominantly clay infill (<0.25mm) locally with black staining (possibly manganese). [LOWER PALAEOZOIC]				91		
		46.33m to 46.37m; distinctly weathered zone, locally destructured to firm brownish red gravelly slightly sandy clay. Sand is fine and medium. Gravel is angular and subangular fine and medium of siltstone and sandstone.		100	97		5	
47.0	67.0							
		46.94m to 46.97m; non intact drilling induced recovered as sandy clayey angular and subangular fragments (10mm to 70mm) of medium grained sandstone.						
		46.97 m to 50.09 m - Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE with occasional black speckling (possibly manganese). Partially weathered. Bedding fractures are 5 to 10 degrees closely to widely spaced undulating to planar, locally stepped rough very tight to partially open with clay and sand infill (<5mm). [LOWER PALAEOZOIC]		100	100	100		
	68.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

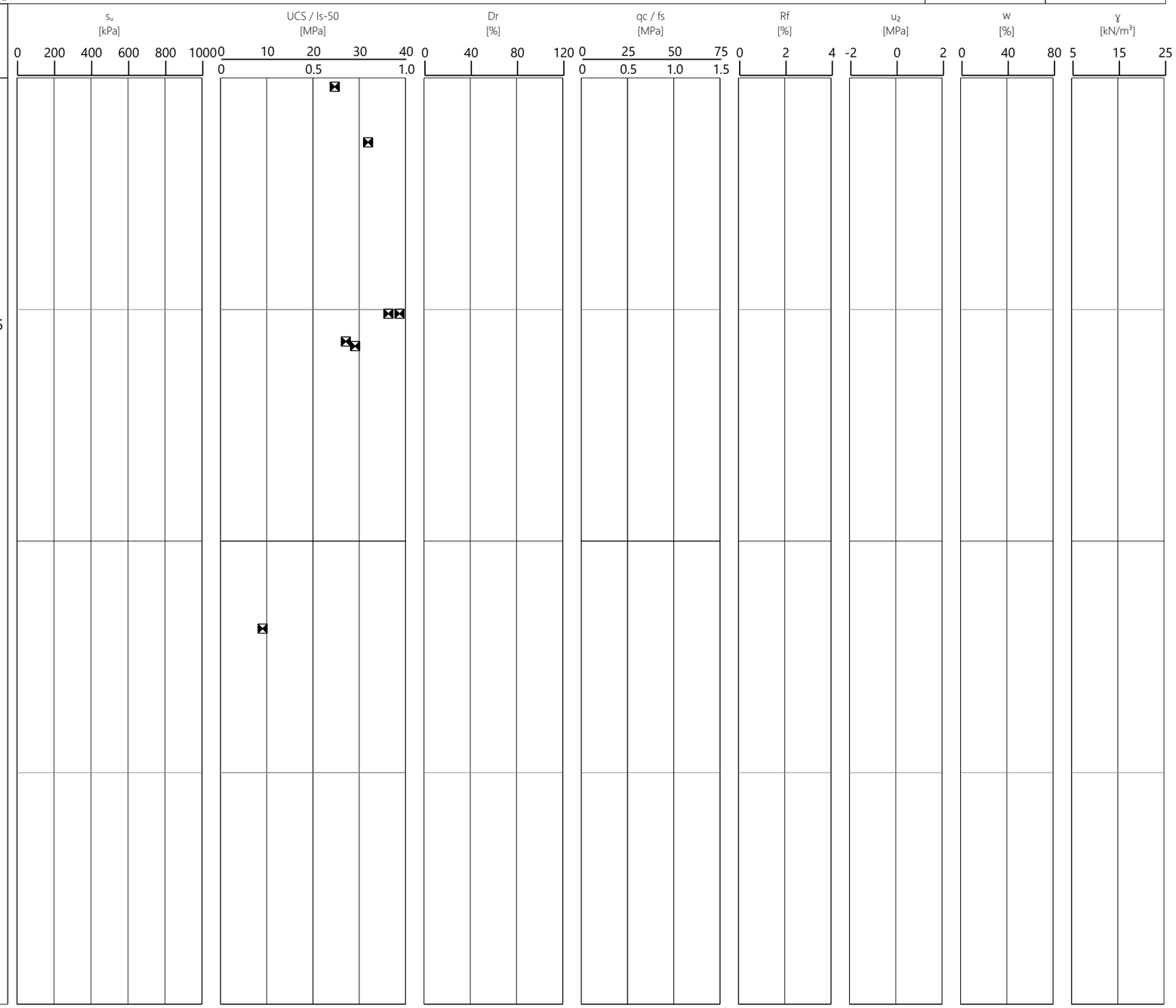
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM Sheet 25 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		46.97 m to 50.09 m - Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE with occasional black speckling (possibly manganese). Partially weathered. Bedding fractures are 5 to 10 degrees closely to widely spaced undulating to planar, locally stepped rough very tight to partially open with clay and sand infill (<5mm). [LOWER PALAEOZOIC]					1	70-75
	-69.0							
49.0		49.18m to 49.21m; thick lamination of light grey siltstone. 49.21m to 49.29m; abundant subrounded elongated fine and medium gravel size clasts of siltstone, mudstone and sandstone in a medium grained sandstone matrix.		100	99	91		
	-70.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

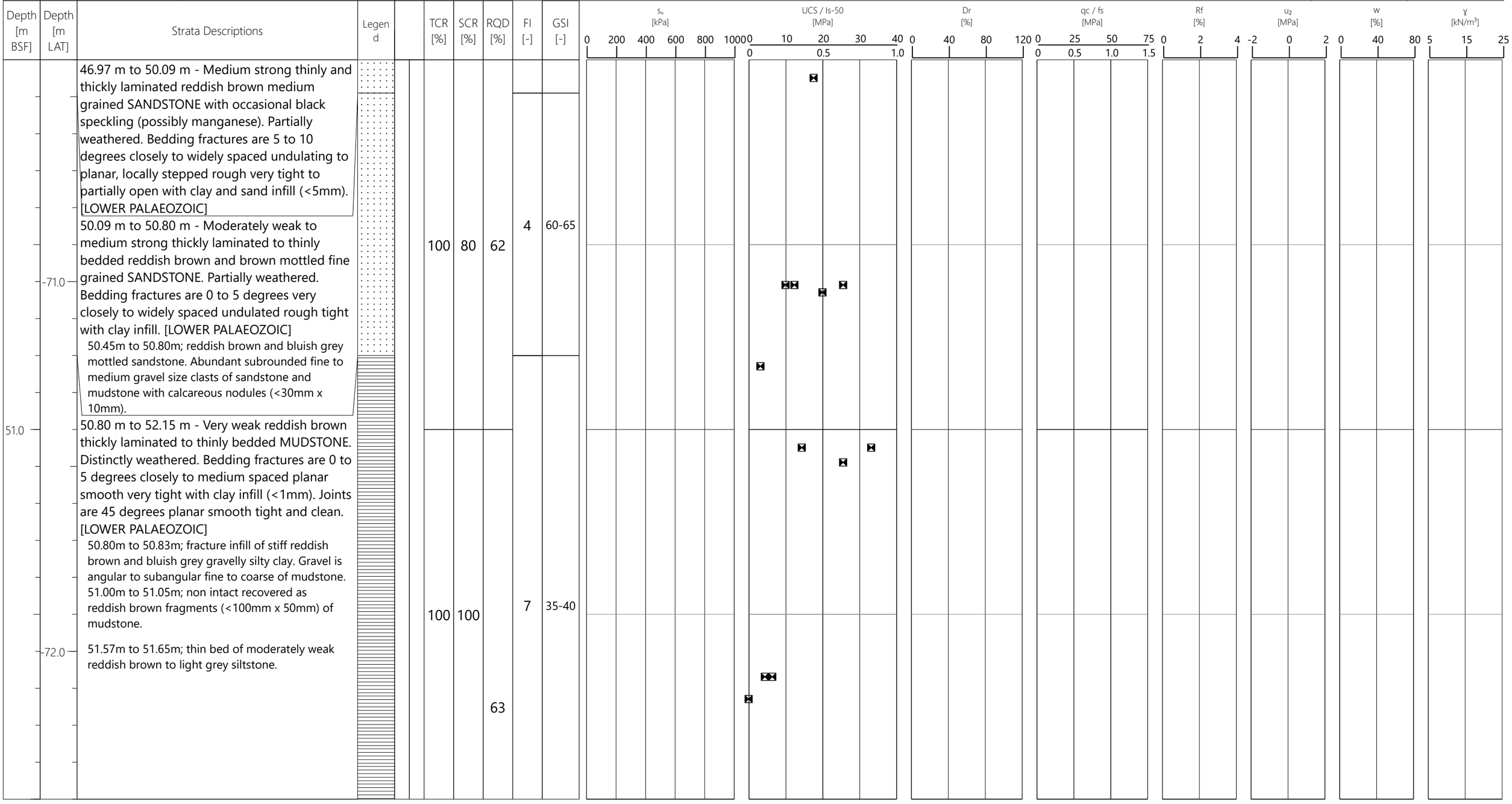
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum / UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 26 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		46.97 m to 50.09 m - Medium strong thinly and thickly laminated reddish brown medium grained SANDSTONE with occasional black speckling (possibly manganese). Partially weathered. Bedding fractures are 5 to 10 degrees closely to widely spaced undulating to planar, locally stepped rough very tight to partially open with clay and sand infill (<5mm). [LOWER PALAEOZOIC]						
	-71.0	50.09 m to 50.80 m - Moderately weak to medium strong thickly laminated to thinly bedded reddish brown and brown mottled fine grained SANDSTONE. Partially weathered. Bedding fractures are 0 to 5 degrees very closely to widely spaced undulated rough tight with clay infill. [LOWER PALAEOZOIC] 50.45m to 50.80m; reddish brown and bluish grey mottled sandstone. Abundant subrounded fine to medium gravel size clasts of sandstone and mudstone with calcareous nodules (<30mm x 10mm).		100	80	62	4	60-65
51.0		50.80 m to 52.15 m - Very weak reddish brown thickly laminated to thinly bedded MUDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees closely to medium spaced planar smooth very tight with clay infill (<1mm). Joints are 45 degrees planar smooth tight and clean. [LOWER PALAEOZOIC] 50.80m to 50.83m; fracture infill of stiff reddish brown and bluish grey gravelly silty clay. Gravel is angular to subangular fine to coarse of mudstone. 51.00m to 51.05m; non intact recovered as reddish brown fragments (<100mm x 50mm) of mudstone. 51.57m to 51.65m; thin bed of moderately weak reddish brown to light grey siltstone.		100	100	63	7	35-40
	-72.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

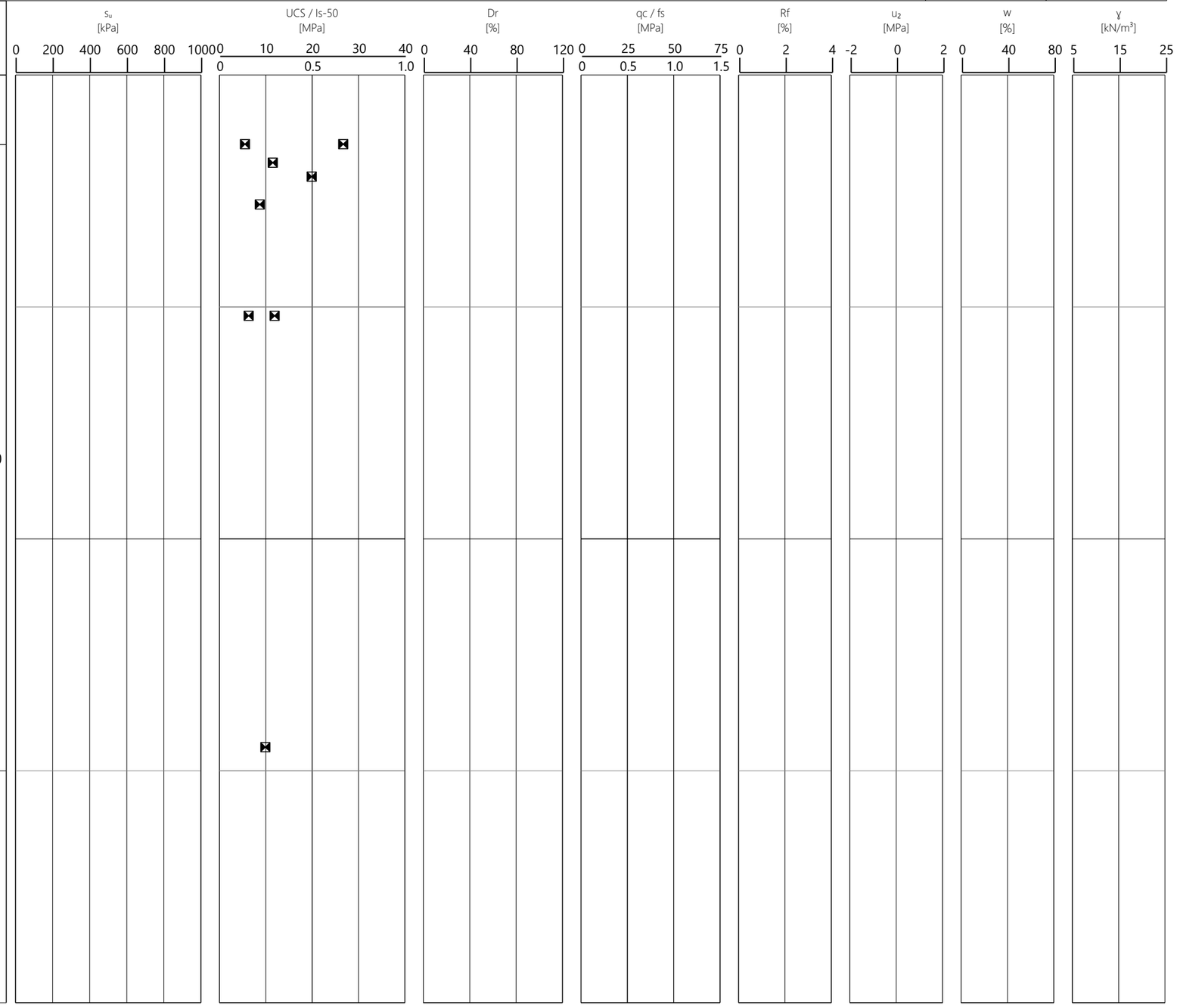
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	53.50	**BH12**
	Fugro Reference	F186642		Seabed Level [m LAT]	-20.40	
	Coordinates	299352.92 mE 5847931.47 mN	Coordinate Datum UTM Zone 30	Date	20 06 2022 to 23 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM Sheet 27 of 27

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		50.80 m to 52.15 m - Very weak reddish brown thickly laminated to thinly bedded MUDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees closely to medium spaced planar smooth very tight with clay infill (<1mm). Joints are 45 degrees planar smooth tight and clean. [LOWER PALAEOZOIC]						
		52.15 m to 53.50 m - Weak to medium strong very thinly to thinly bedded dark brownish grey to reddish brown SILTSTONE. Partially weathered. Bedding fractures are 0 to 10 degrees very closely to closely spaced undulating rough tight with clay infill (<1mm). Joints are 40 degrees planar smooth tight with clay infill (<1mm). [LOWER PALAEOZOIC]						
	-73.0							
53.0				100	100	83	4	45-50
		53.43m to 53.50m; thin bed of extremely weak to weak thickly laminated reddish brown mudstone.						
	-74.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 1 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 2 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 3 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 4 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 5 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 6 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 7 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									13		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 8 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 9 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 10 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 11 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 12 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 13 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 14 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 15 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 16 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									31		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH12**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum) -20.40	Sheet 17 of 27
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 18 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									35		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 19 of 27
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									37		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 20 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									39		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 21 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									41		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 22 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
42.91 - 42.93	FR	50		VT	Sp	Ro		DI.		30 °	
42.91 - 42.94	J	30		T	Pl	Sm		Clay (<0.25mm).		50 °	
42.94 - 42.96	J	15		T	Un	Sm		Clay smear.		15 °	
									43		
43.33 - 43.34	J	20		O	Pl	Sm		Clay (<1mm).		20 °	
43.43	BF	5		T	Un	Sm		Black manganese staining.		5 °	
43.48 - 43.62	J	70		O	Pl	Ro		Clay (<1mm).		70 °	
43.67 - 43.70	NI							NI.			
43.70 - 43.81	FR	10		W				Slightly gravelly slightly sandy clay infill (10cm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 23 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
44.17 - 44.18	J	20		T	Un	Sm		Black manganese speckling and local reduction spots.		20 °	
44.37 - 44.44	J	60		PO	Pl	Ro		Coarse sand and clay smearing.		60 °	
44.43 - 44.44	J	20		O	Pl	Ro		coarse sand and clay (<2mm).		20 °	
44.93 - 44.99	J	30		O	Un	Ro		Clay infill (<4mm). Fracture walls partially broken by drilling.		30 °	
									45		
45.42	BF	5		T	Pl	Sm		Light grey staining.		5 °	
45.62 - 45.63	FR	15								15 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 24 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
46.33	BF	5		T	Un	Sm		Silt (<0.25mm).		5 °	
46.52 - 46.54	J	20		T	Pl	Sm		Clay (<0.25mm).		20 °	
46.69 - 46.70	J	15		T	Un	Sm		Clay (<0.25mm).		15 °	
46.70 - 46.76	FR	90								90 °	
46.78 - 46.80	J	15		VT	Un	Sm		Clay (<0.1mm).		15 °	
46.88	FR	15								15 °	
46.94 - 46.97	NI							NIDI.	47		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 25 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
48.02	FR							DI			
48.22	FR							DI			
48.52	BF	5		T	Pl	Ro		Clay (<0.25mm).		5 °	
									49		
49.18 - 49.19	BF	10		VT	Pl	Ro		Clean.		10 °	
49.25 - 49.26	BF	10		PO	Pl	Ro		Soft reddish brown gravelly sandy clay. Sand is fine to coarse. Gravel is angular and subangular fine and medium siltstone and sandstone (<5mm).		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 26 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
50.05 - 50.06	J	15		T	Sp	Ro		Clay (<0.25mm).		15 °	
50.45 - 50.46	BF	5		T	Un	Ro		clay (<1mm)		5 °	
50.61 - 50.62	BF	5		VT	Un	Ro		Incipient fracture		5 °	
50.67 - 50.86	F	45		T	Un	Ro		clay (<1mm)		45 °	
50.80 - 50.83	BF	5		O	Un	Ro		Gravelly clay (<30mm).		5 °	
50.91 - 50.92	BF	5		T	Pl	Sm		clay (<1mm)		5 °	
50.92 - 50.93	FR							clay (<1mm)			
50.96 - 50.97	FR							clay (<1mm)			
									51		
51.05 - 51.06	FR							clay (<1mm)			
51.19 - 51.20	BF	5		T	Pl	Sm		clay (<1mm)		5 °	
51.26 - 51.31	J	45		T	Pl	Sm		clay (<1mm)		45 °	
51.45 - 51.46	BF	5		PO	Pl	Sm		clay (1mm)		5 °	
51.65 - 51.66	BF	5		VT	Un	Ro				5 °	
51.75 - 51.76	BF	5		T	Pl	Sm				5 °	
51.91 - 51.92	BF	10		T	Un	Ro		clay (<1mm)		10 °	
51.92 - 52.00	FR	85		T	Pl	Sm				85 °	
51.93 - 51.94	BF	5		T	Pl	Sm		clay (<1mm)		5 °	
51.97 - 51.98	BF	5		T	Pl	Sm		clay (<1mm)		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 27 of 27
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
52.15 - 52.16	BF	5		VT	Pl	Sm		clay, silt (<1mm		5 °	
52.34 - 52.35	BF	5		PO	Un	Ro		clay, silt (<1mm)		5 °	
52.51 - 52.52	FR										
52.63 - 52.64	BF	5		PO	Pl	Sm		clay(2mm)		5 °	
52.87 - 52.95	J	40		T	Pl	Sm		clay (<1mm)		40 °	
									53		
53.06 - 53.07	BF	10		T	Un	Ro		clay (<1mm)		10 °	
53.43 - 53.44	BF	5		VT	Un	Sm		clay (<1mm)		5 °	
53.45 - 53.46	BF	5		VT	Un	Sm		clay (<1mm)		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH12**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E299352.92 N5847931.47	Ground Elevation (m Datum)	-20.40	Sheet 1 of 1
	Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	37.50	RO	21 06 2022	22 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB, CH, KH, JG	FS/KR/MN/RF	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 35.70m; Cantilever to LAT = 15.30m; LAT to Mud = 20.40m 3. All depths refer to depth below seabed level.
37.50	53.50	RORC	22 06 2022	23 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	KH, JG	FS/KR/MN/RF	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
20 06 2022	19:00	0.00	0.00		
21 06 2022	07:00	1.00	1.00		
21 06 2022	19:00	12.00	12.00		
22 06 2022	07:00	24.00	24.00		
22 06 2022	19:00	37.50	37.50		
23 06 2022	07:00	53.50	53.50		

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
41.00	42.50	PB	100	Grey	00:09
42.50	44.00	PB	100	Red	00:13
44.00	45.50	PB	100	Red	00:14
45.50	47.00	PB	100	Red	00:15
47.00	48.50	PB	100	Red	00:12
48.50	50.00	PB	100	Red	00:13
50.00	51.00	PB	100	Red	00:12
51.00	52.50	PB	100	Red	00:24
52.50	53.50	PB	100	Red	00:18

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
41.00	42.50	102
42.50	44.00	102
44.00	45.50	102
45.50	47.00	102
47.00	48.50	102
48.50	50.00	102
50.00	51.00	102
51.00	52.50	102
52.50	53.50	102

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.50	178	2.00	178
53.50	146	52.50	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	53.50	Arisings	23 06 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 1 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
0.0		0.00 m to 3.00 m - Very dense greyish brown to light brown slightly gravelly fine to coarse SAND with rare shell fragments (<10mm). Gravel is subangular to well rounded fine and medium of granite, flint, quartz, sandstone, basalt, siltstone, slate and rare schist. [HOLOCENE DEPOSITS]						
		0.50m to 1.00m; No recovery.						
	-39.0							
1.0								
		1.50m to 2.45m; with occasional shell fragments (<15mm).						
	-40.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

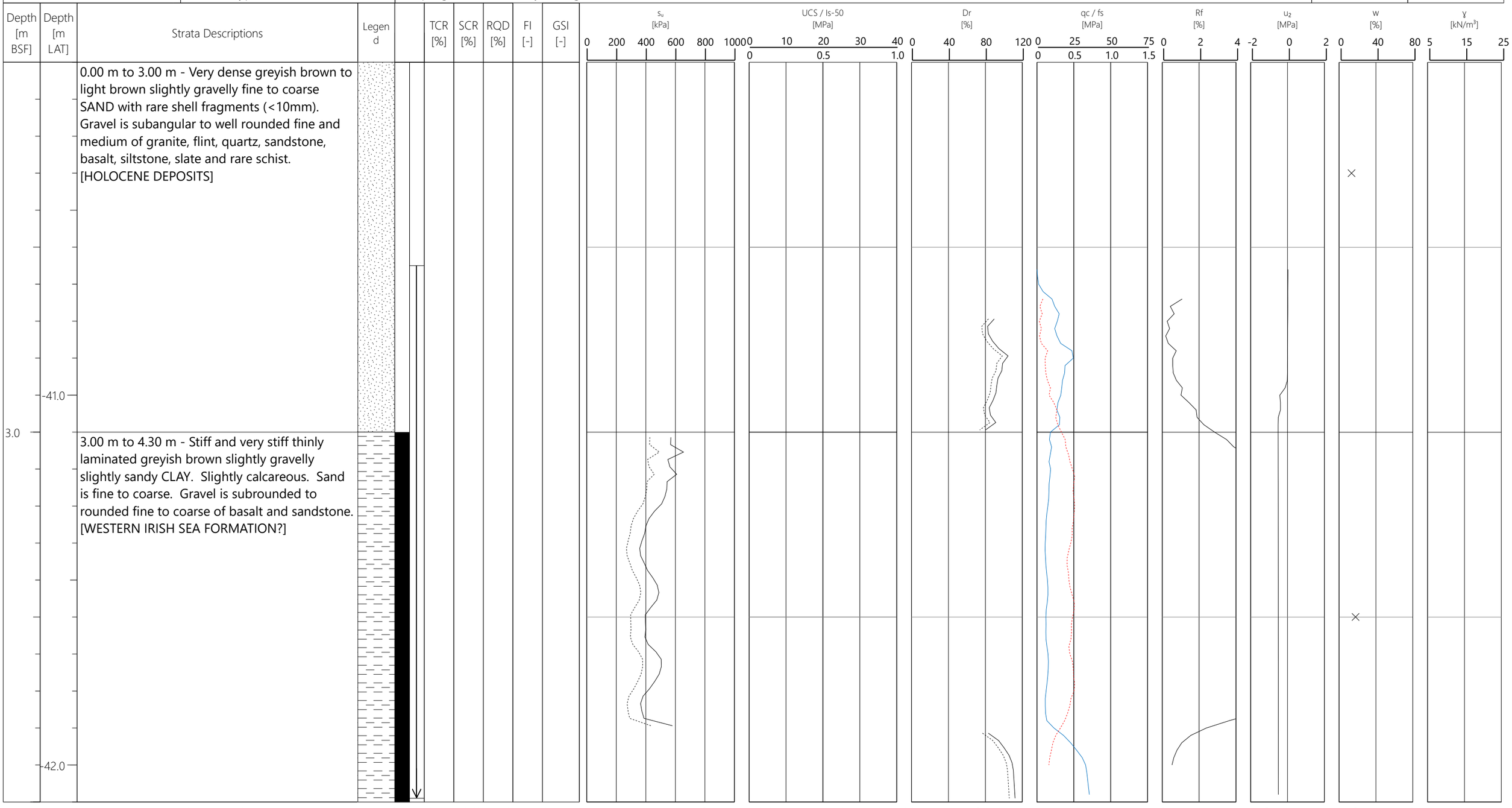
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 3.00 m - Very dense greyish brown to light brown slightly gravelly fine to coarse SAND with rare shell fragments (<10mm). Gravel is subangular to well rounded fine and medium of granite, flint, quartz, sandstone, basalt, siltstone, slate and rare schist. [HOLOCENE DEPOSITS]						
	-41.0							
3.0		3.00 m to 4.30 m - Stiff and very stiff thinly laminated greyish brown slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of basalt and sandstone. [WESTERN IRISH SEA FORMATION?]						
	-42.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

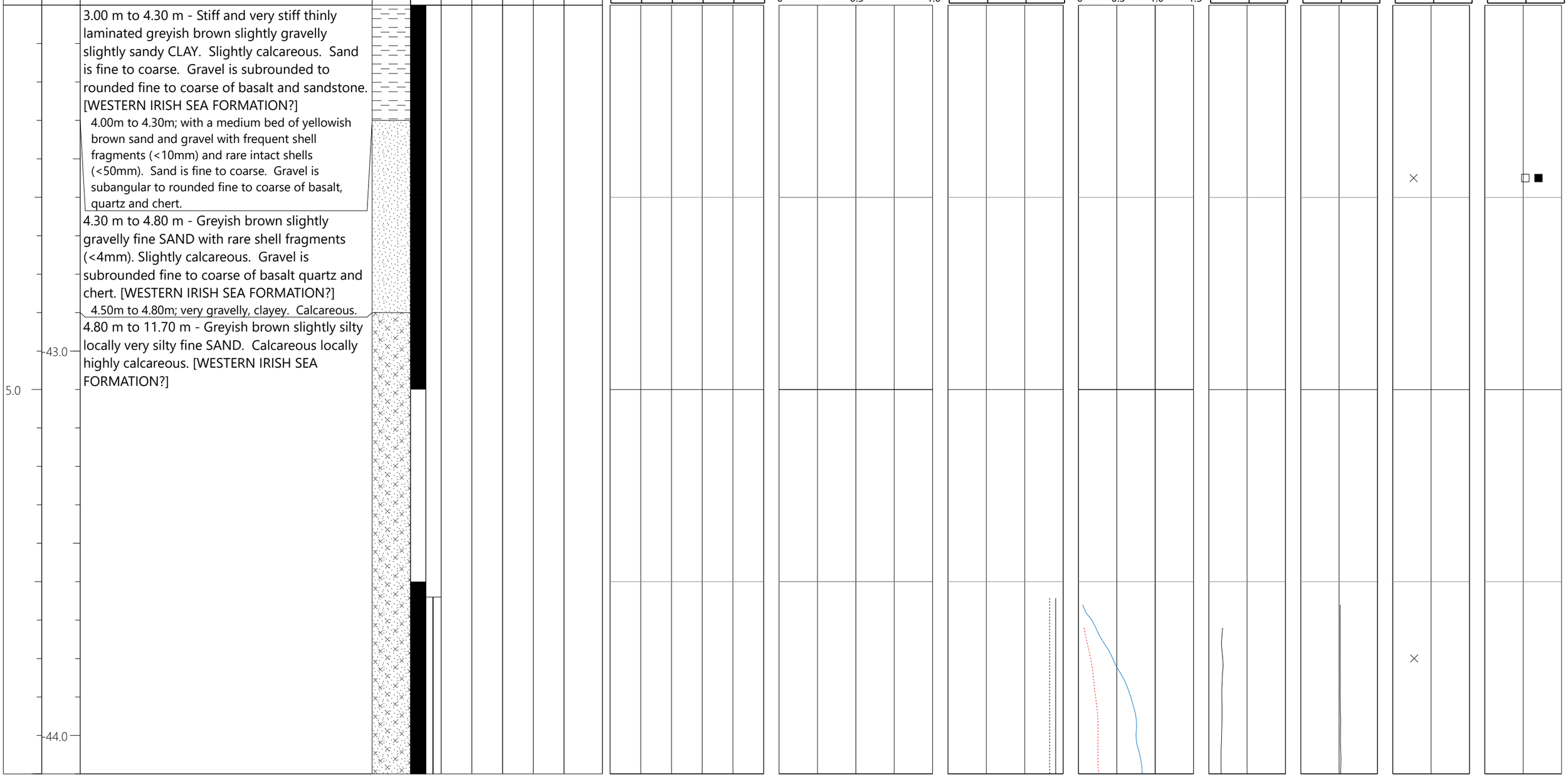
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- × Water Content

Key for Unit Weight (γ):
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		3.00 m to 4.30 m - Stiff and very stiff thinly laminated greyish brown slightly gravelly slightly sandy CLAY. Slightly calcareous. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of basalt and sandstone. [WESTERN IRISH SEA FORMATION?]						
		4.00m to 4.30m; with a medium bed of yellowish brown sand and gravel with frequent shell fragments (<10mm) and rare intact shells (<50mm). Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of basalt, quartz and chert.						
		4.30 m to 4.80 m - Greyish brown slightly gravelly fine SAND with rare shell fragments (<4mm). Slightly calcareous. Gravel is subrounded fine to coarse of basalt quartz and chert. [WESTERN IRISH SEA FORMATION?]						
		4.50m to 4.80m; very gravelly, clayey. Calcareous.						
	-43.0	4.80 m to 11.70 m - Greyish brown slightly silty locally very silty fine SAND. Calcareous locally highly calcareous. [WESTERN IRISH SEA FORMATION?]						
5.0								
	-44.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.213

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
7.0	-45.0	4.80 m to 11.70 m - Greyish brown slightly silty locally very silty fine SAND. Calcareous locally highly calcareous. [WESTERN IRISH SEA FORMATION?]						
	-46.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

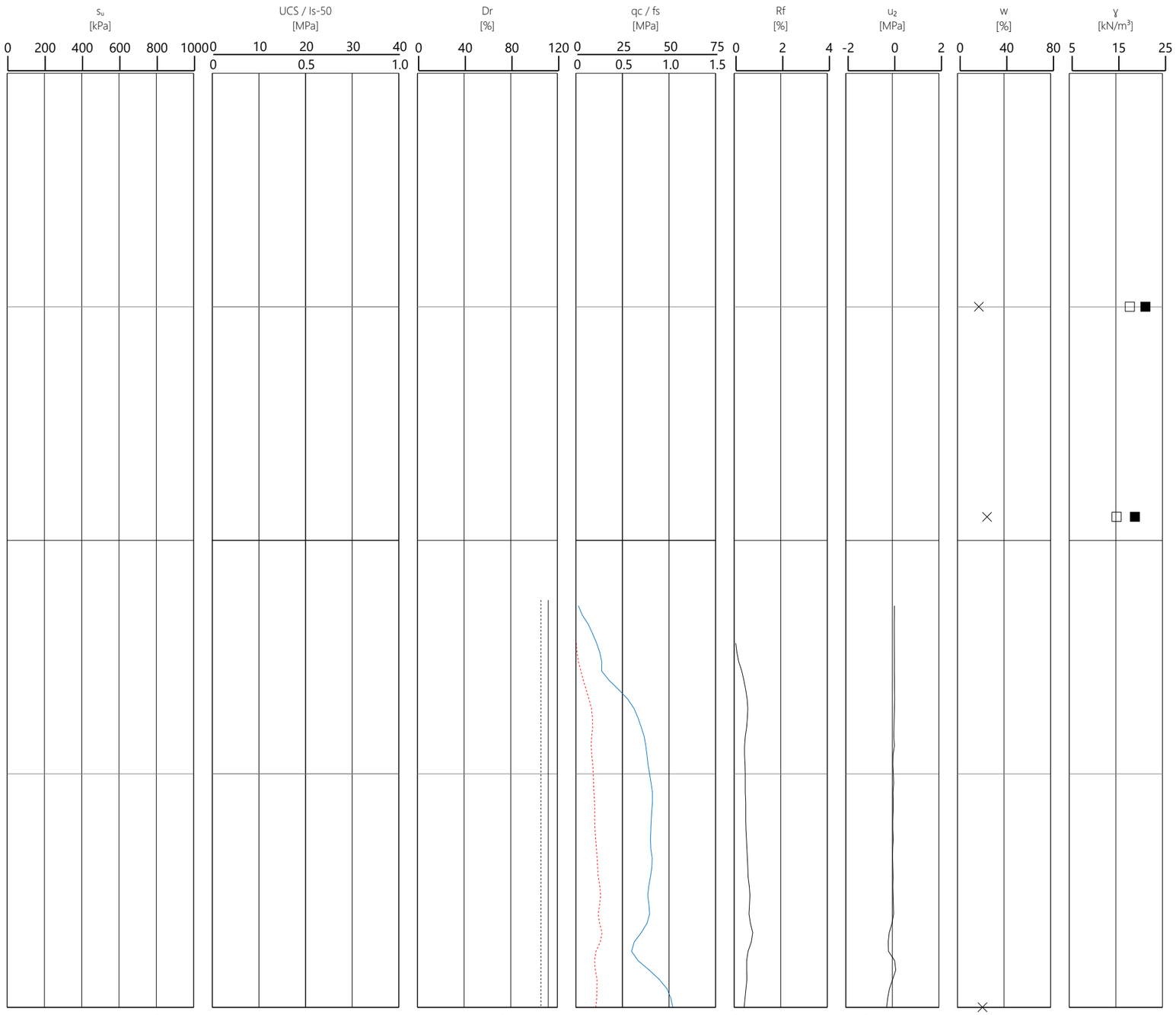
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		4.80 m to 11.70 m - Greyish brown slightly silty locally very silty fine SAND. Calcareous locally highly calcareous. [WESTERN IRISH SEA FORMATION?]						
		8.00m to 8.50m; fine and medium predominately fine. Slightly calcareous.						
		8.50m to 9.00m; with a medium bed of greyish brown slightly gravelly slightly clayey fine and medium predominately fine SAND with rare shell fragments (<3mm) and rare mica crystals (<1mm). Slightly calcareous. Gravel is rounded and well rounded fine and medium of siltstone and sandstone.						
	-47.0							
9.0								
		9.50m to 11.70m; with traces of mica crystals (<1mm).						
	-48.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

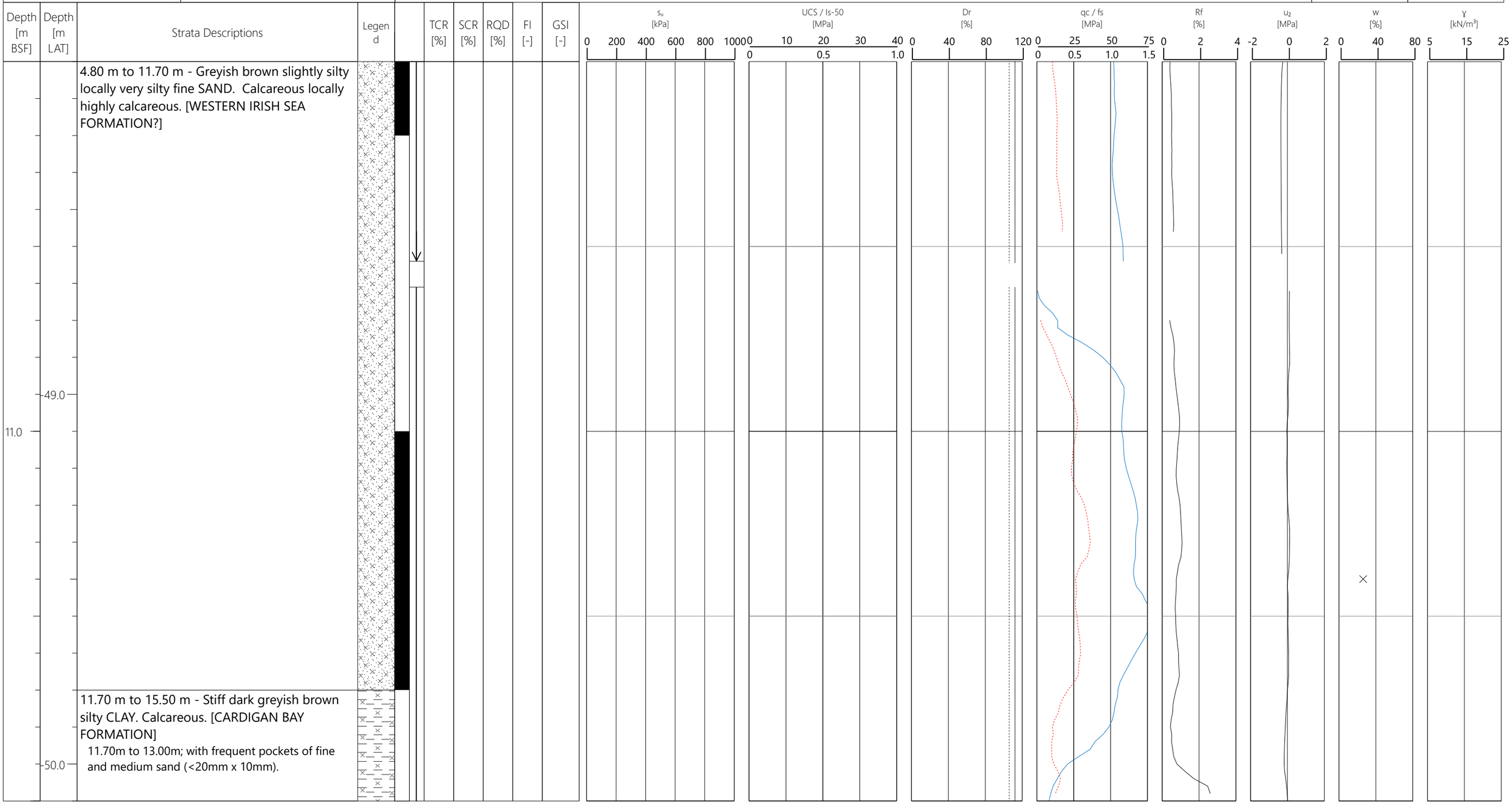
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.215

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		4.80 m to 11.70 m - Greyish brown slightly silty locally very silty fine SAND. Calcareous locally highly calcareous. [WESTERN IRISH SEA FORMATION?]						
	-49.0							
11.0								
		11.70 m to 15.50 m - Stiff dark greyish brown silty CLAY. Calcareous. [CARDIGAN BAY FORMATION] 11.70m to 13.00m; with frequent pockets of fine and medium sand (<20mm x 10mm).						
	-50.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

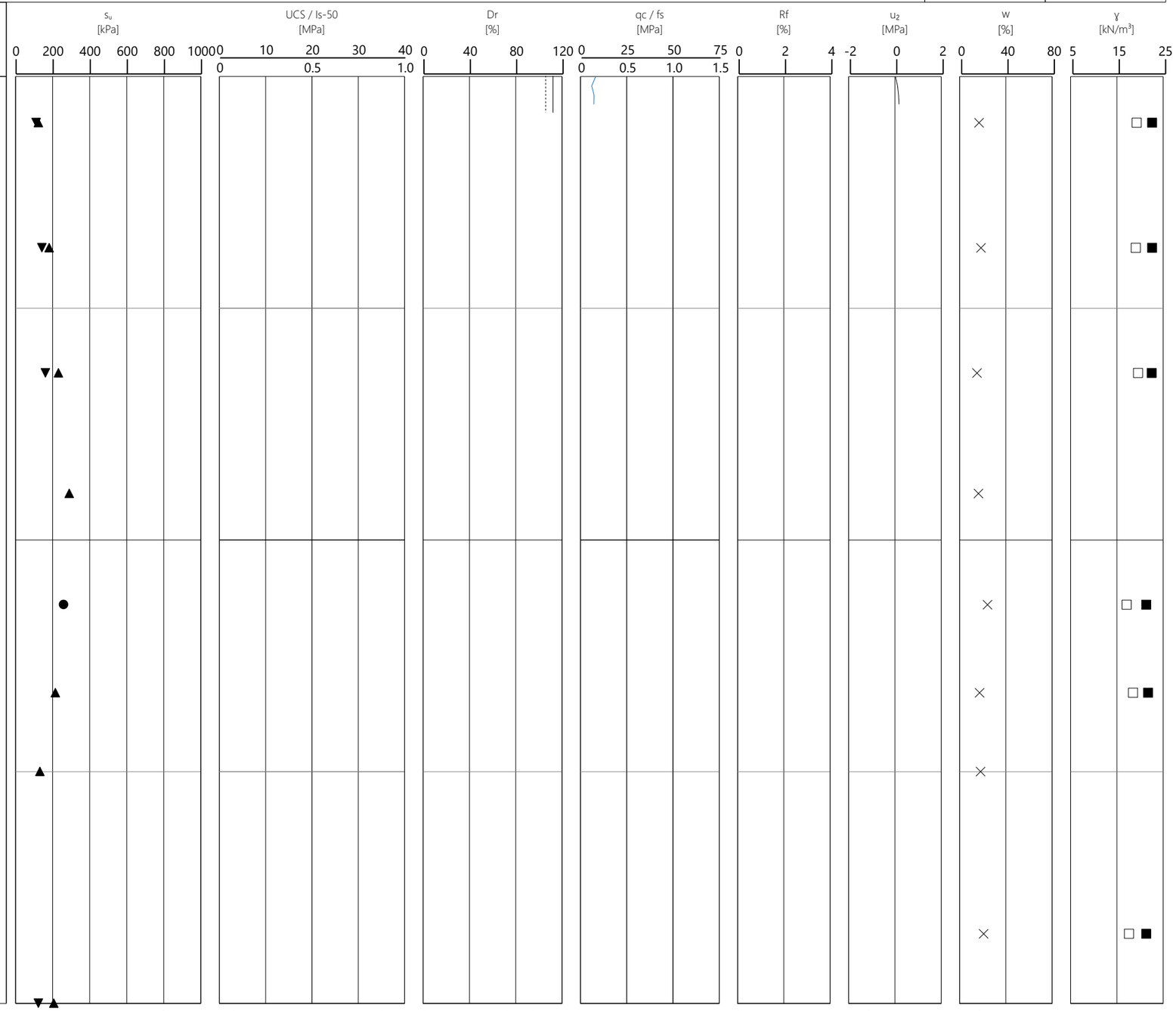
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.216

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
13.0	-51.0	11.70 m to 15.50 m - Stiff dark greyish brown silty CLAY. Calcareous. [CARDIGAN BAY FORMATION]						
	-52.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

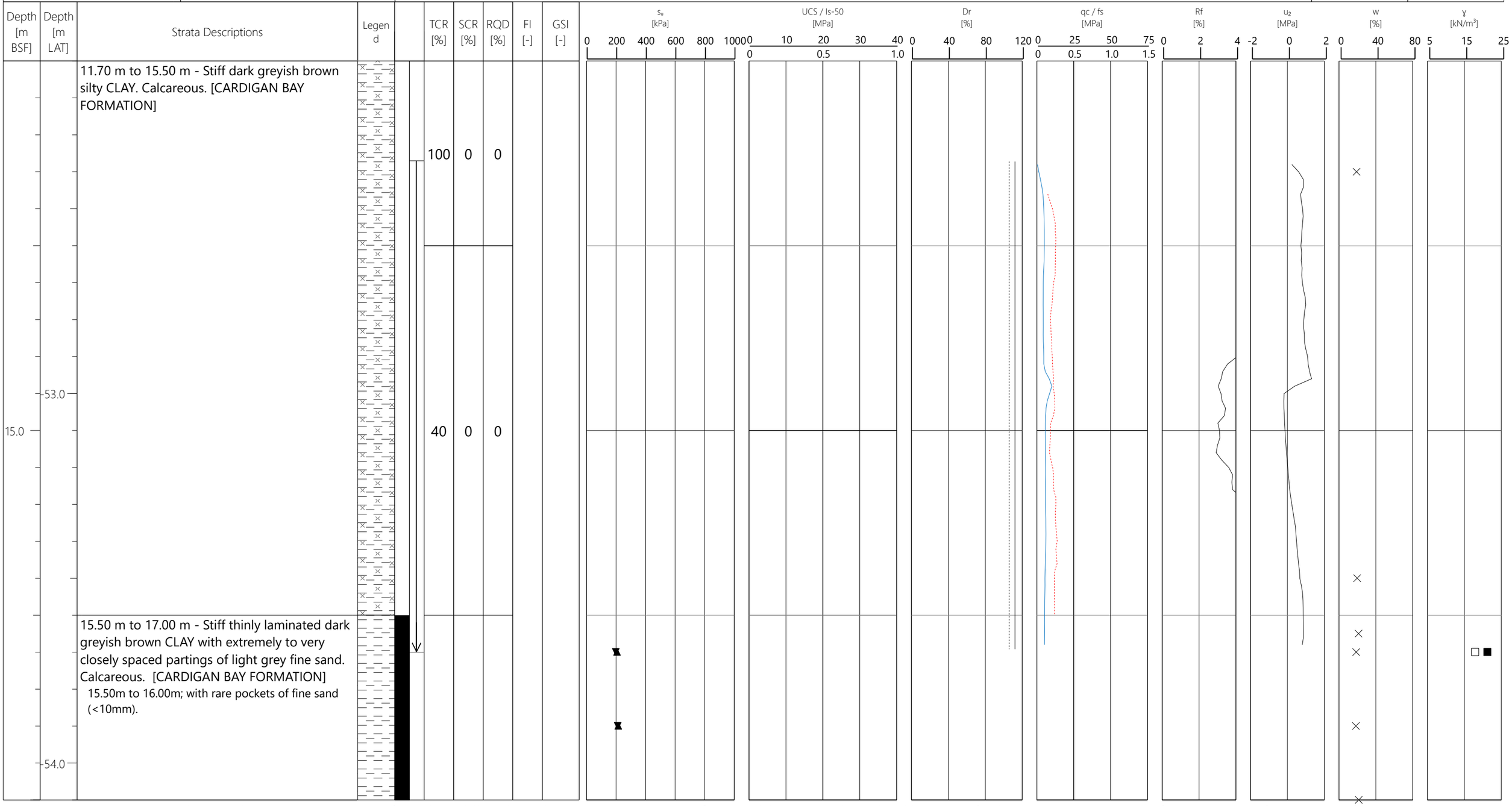
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.217

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		11.70 m to 15.50 m - Stiff dark greyish brown silty CLAY. Calcareous. [CARDIGAN BAY FORMATION]		100	0	0		
15.0	-53.0			40	0	0		
		15.50 m to 17.00 m - Stiff thinly laminated dark greyish brown CLAY with extremely to very closely spaced partings of light grey fine sand. Calcareous. [CARDIGAN BAY FORMATION] 15.50m to 16.00m; with rare pockets of fine sand (<10mm).						
	-54.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

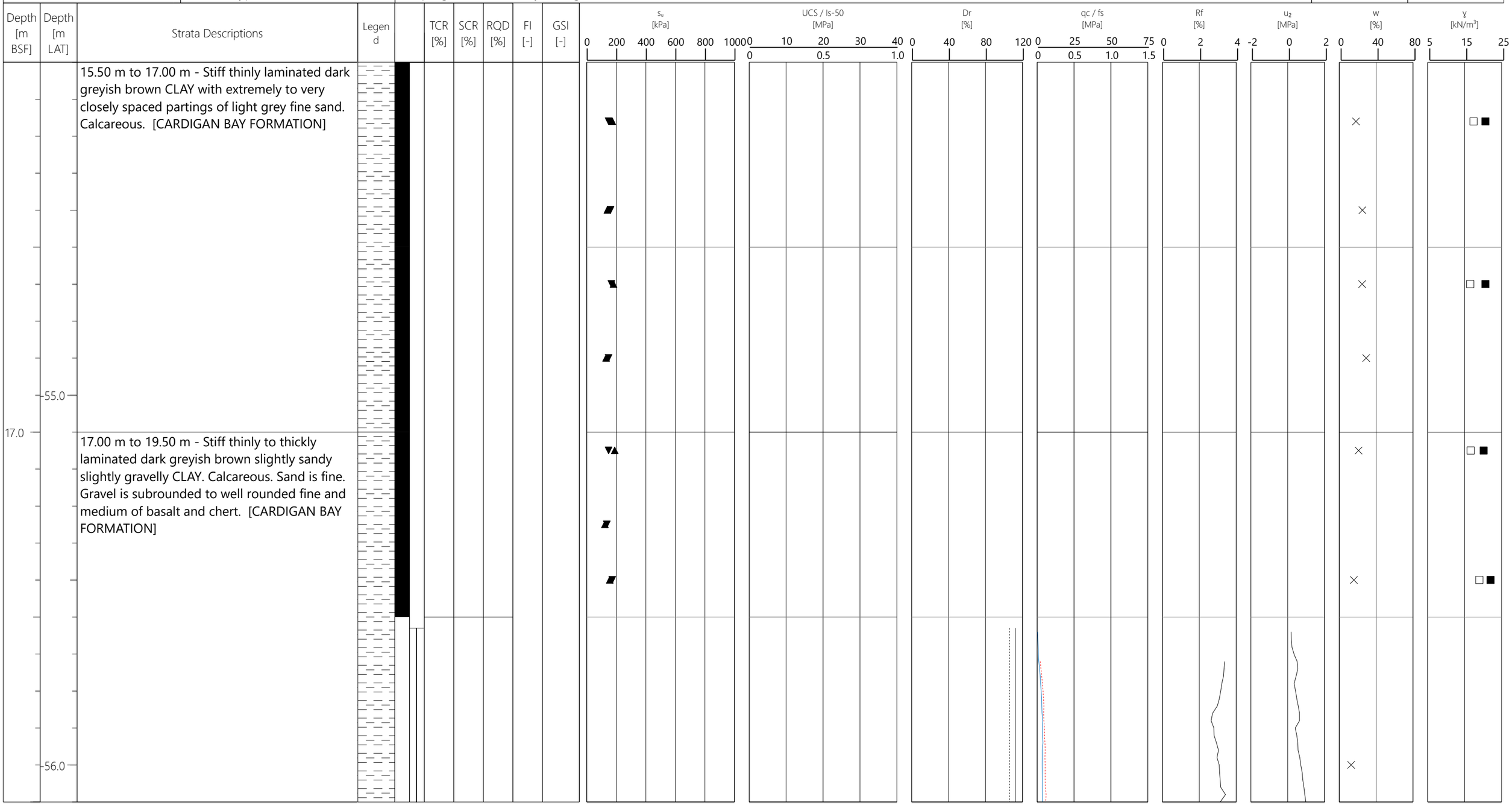
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.218

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 9 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		15.50 m to 17.00 m - Stiff thinly laminated dark greyish brown CLAY with extremely to very closely spaced partings of light grey fine sand. Calcareous. [CARDIGAN BAY FORMATION]						
	-55.0							
17.0		17.00 m to 19.50 m - Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY. Calcareous. Sand is fine. Gravel is subrounded to well rounded fine and medium of basalt and chert. [CARDIGAN BAY FORMATION]						
	-56.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		17.00 m to 19.50 m - Stiff thinly to thickly laminated dark greyish brown slightly sandy slightly gravelly CLAY. Calcareous. Sand is fine. Gravel is subrounded to well rounded fine and medium of basalt and chert. [CARDIGAN BAY FORMATION]				0		
				100	0			
	-57.0							
19.0								
		19.50 m to 22.00 m - Stiff thinly laminated dark greyish brown CLAY with extremely closely spaced partings of light grey fine sand. [CARDIGAN BAY FORMATION]						
	-58.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

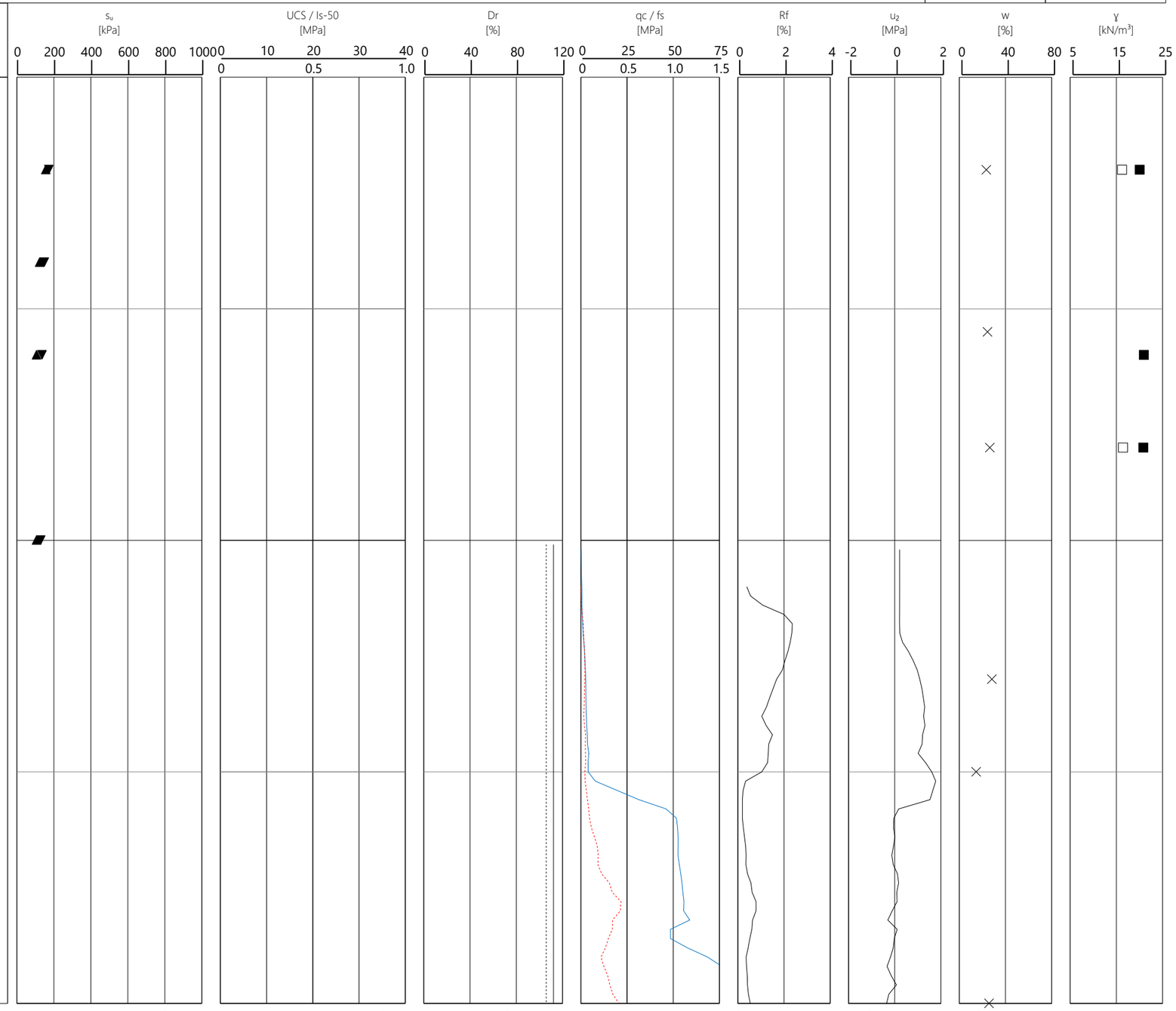
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 11 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		19.50 m to 22.00 m - Stiff thinly laminated dark greyish brown CLAY with extremely closely spaced partings of light grey fine sand. [CARDIGAN BAY FORMATION]						
	-59.0							
21.0		21.0m to 21.5m; slightly gravelly. Gravel is subrounded to rounded fine to medium of basalt and siltstone.						
		21.50m to 21.60m; with a thin bed of stiff slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of basalt, chert and siltstone.		47	0	0		
	-60.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

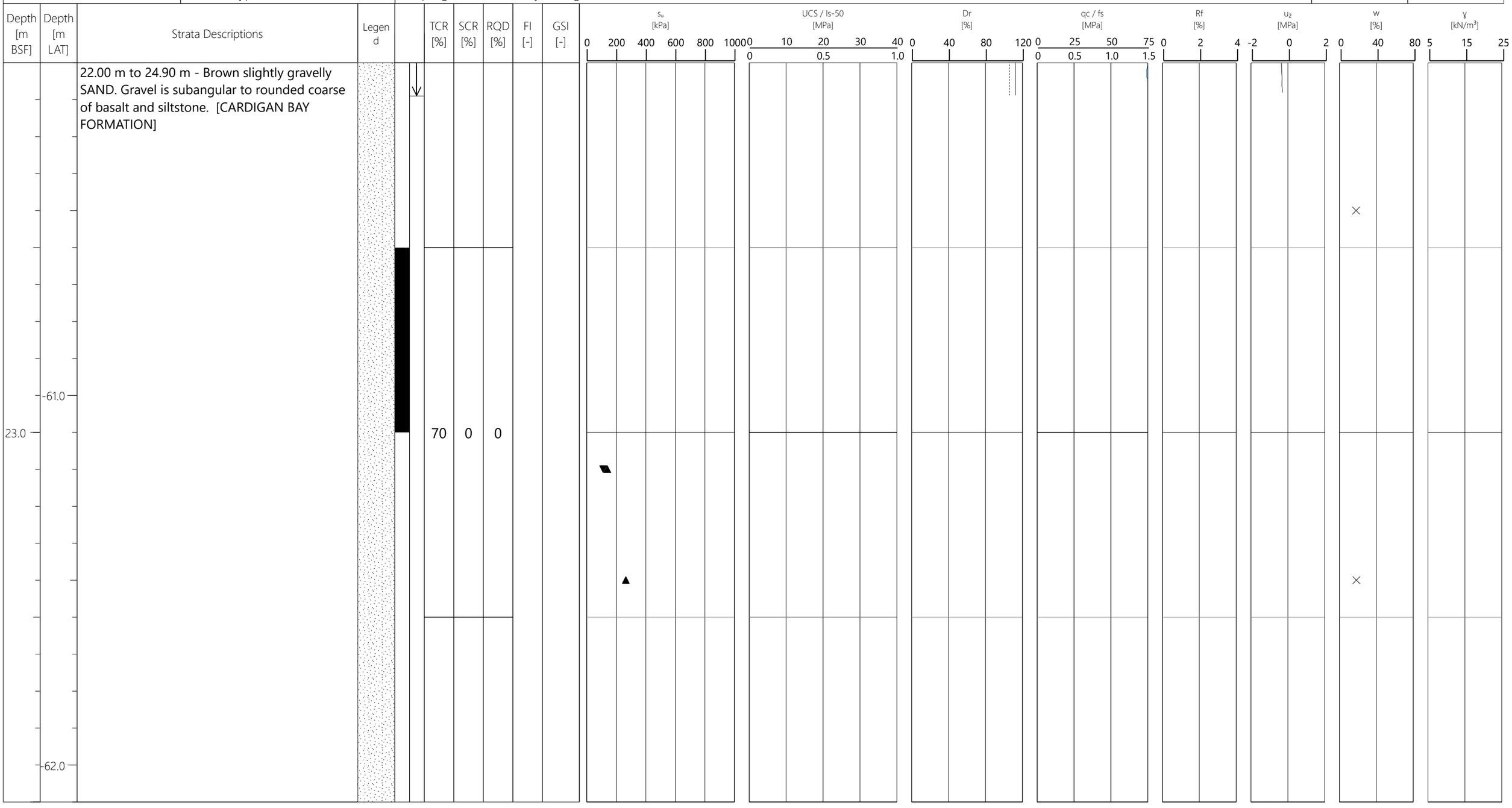
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 12 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
23.0	-61.0	22.00 m to 24.90 m - Brown slightly gravelly SAND. Gravel is subangular to rounded coarse of basalt and siltstone. [CARDIGAN BAY FORMATION]		70	0	0		
	-62.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- × Water Content

Key for Unit Weight (γ):
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		22.00 m to 24.90 m - Brown slightly gravelly SAND. Gravel is subangular to rounded coarse of basalt and siltstone. [CARDIGAN BAY FORMATION]						
	-63.0							
25.0		24.90 m to 26.00 m - Stiff dark brown thinly laminated slightly gravelly CLAY. Gravel is subrounded to well rounded fine to coarse of basalt and siltstone. [CARDIGAN BAY FORMATION]		73	0	0		
	-64.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

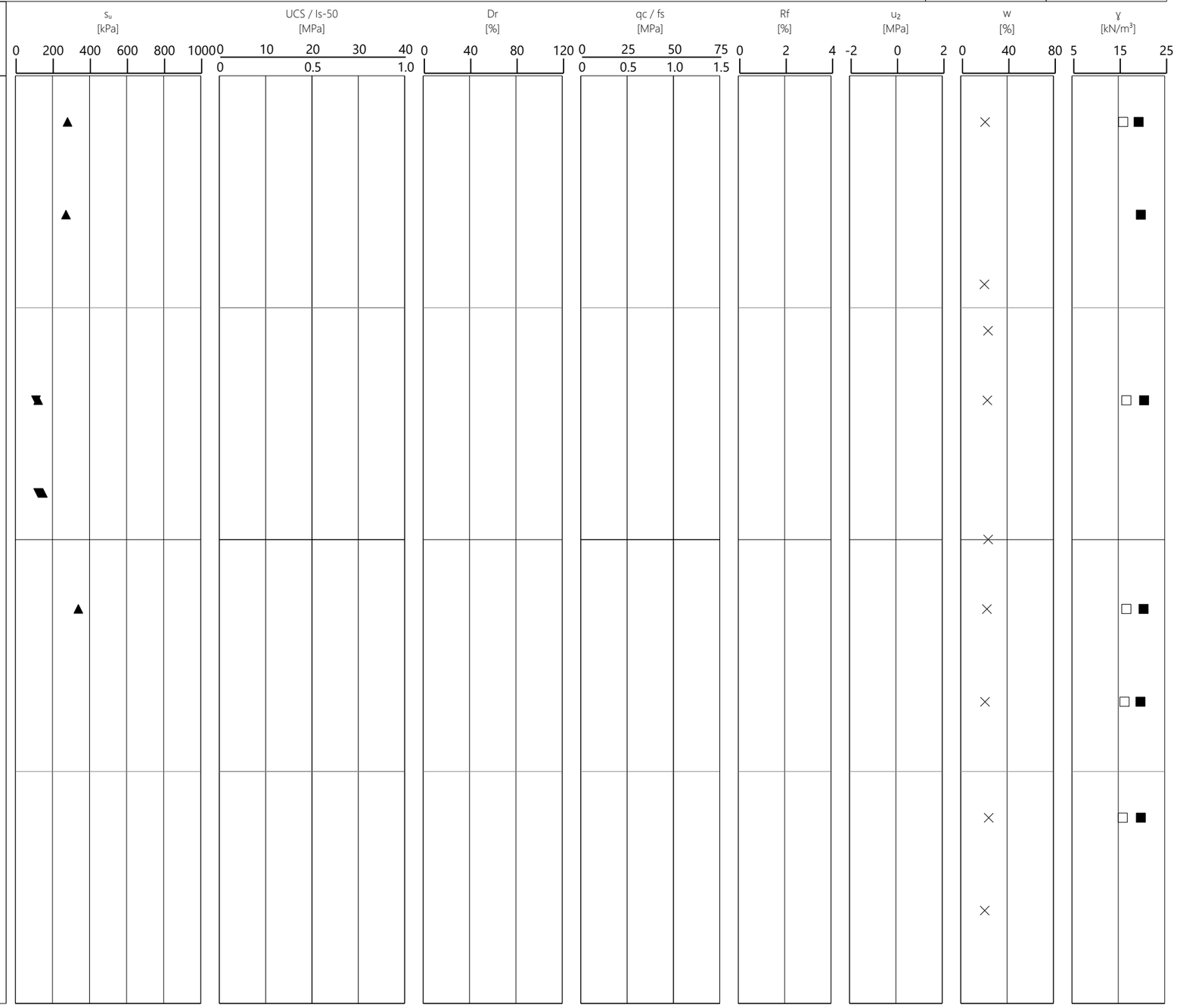
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		26.00 m to 27.50 m - Very stiff dark greyish brown CLAY with very closely spaced inclined 45 and 90 degree partings of light grey fine sand. [CARDIGAN BAY FORMATION]						
	-65.0							
27.0		27.00m to 27.05m with a pocket of brown clayey fine to medium sand (<50mm).						
		27.33m to 27.40m with a pocket of light brownish grey fine to medium sand (<70mm).						
		27.50 m to 30.80 m - Greyish brown silty fine SAND. [CARDIGAN BAY FORMATION]						
	-66.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

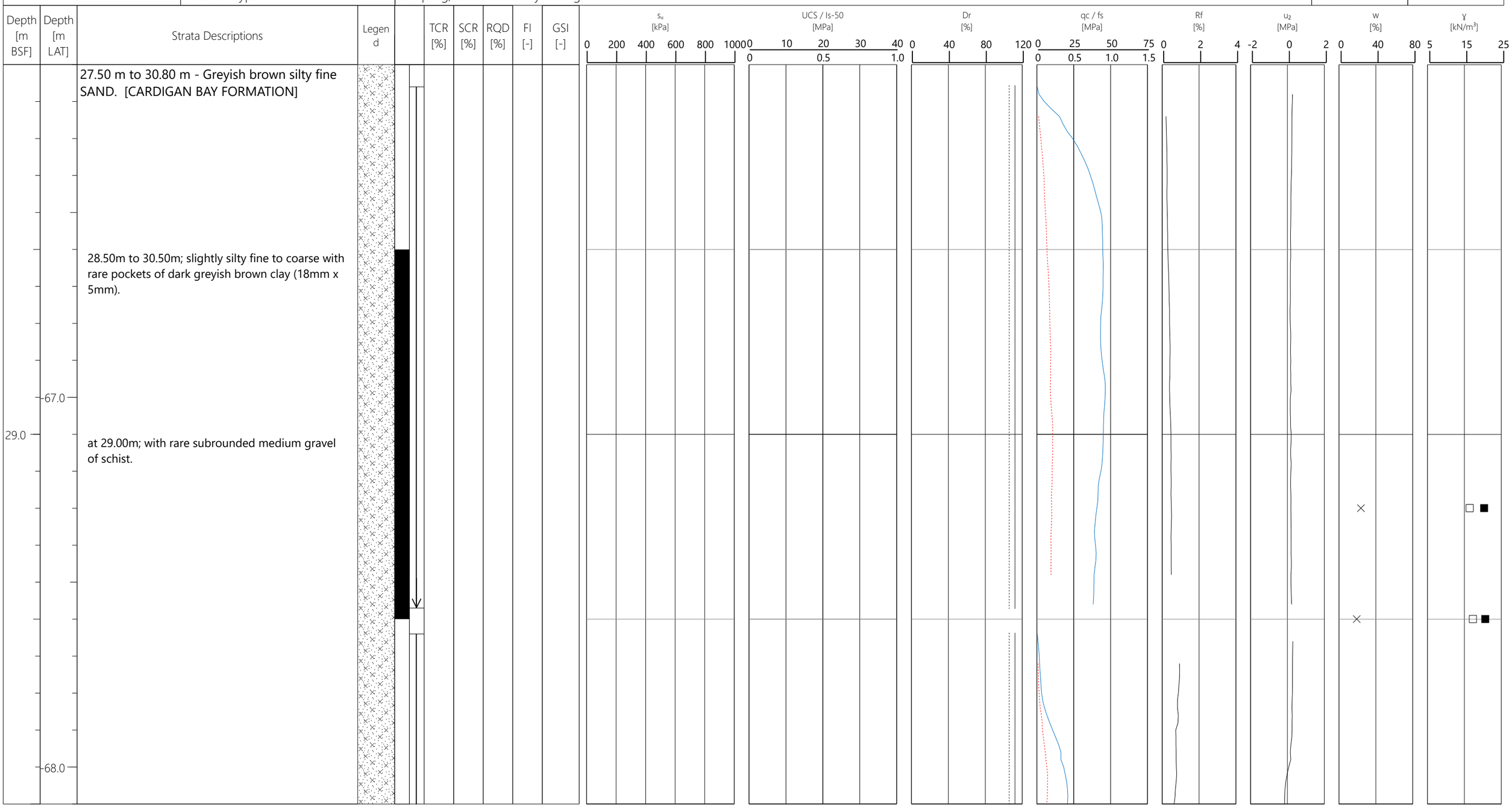
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.50 m to 30.80 m - Greyish brown silty fine SAND. [CARDIGAN BAY FORMATION]						
		28.50m to 30.50m; slightly silty fine to coarse with rare pockets of dark greyish brown clay (18mm x 5mm).						
	-67.0							
29.0		at 29.00m; with rare subrounded medium gravel of schist.						
	-68.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

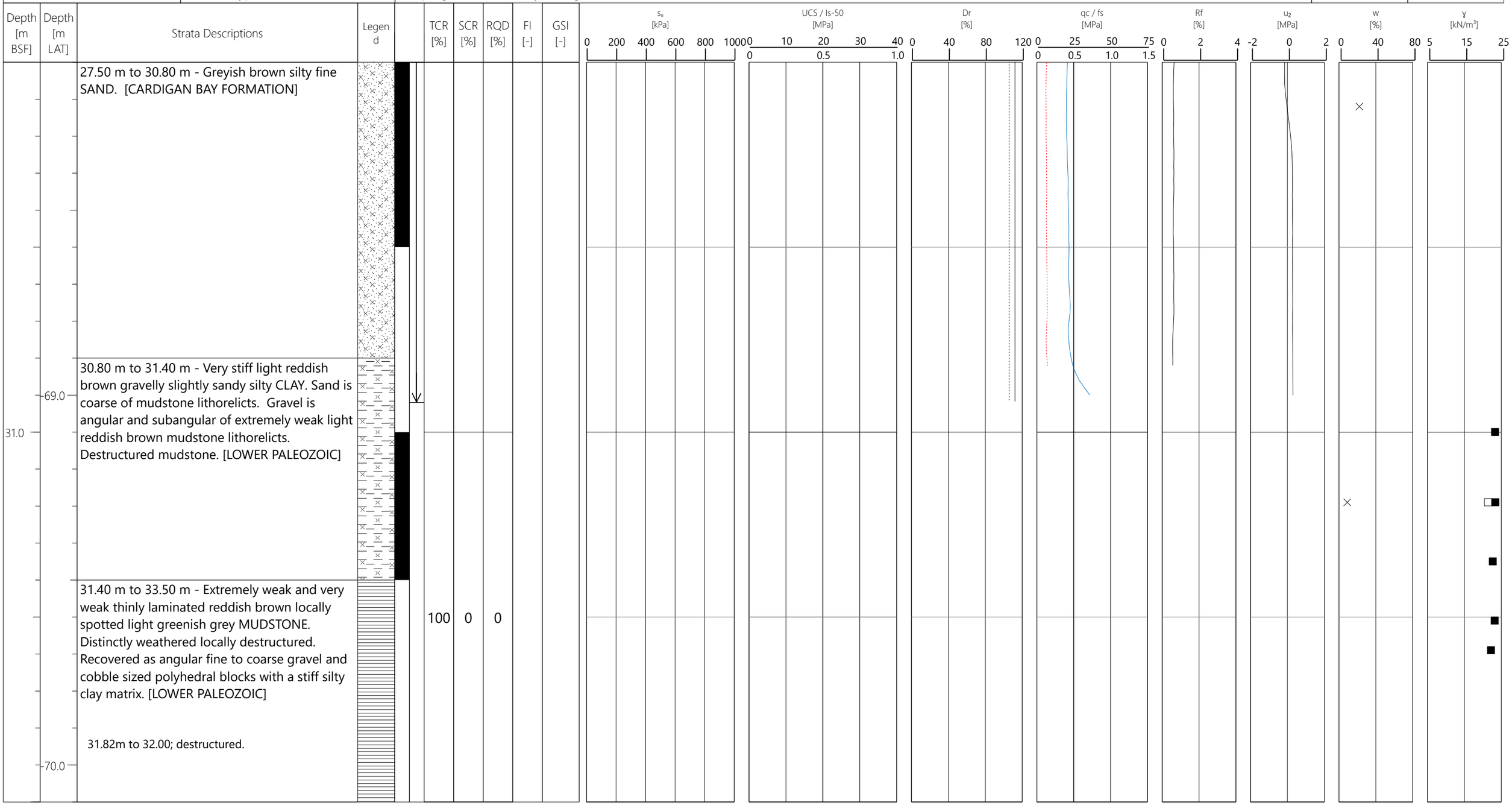
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.225

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 16 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.50 m to 30.80 m - Greyish brown silty fine SAND. [CARDIGAN BAY FORMATION]						
	-69.0	30.80 m to 31.40 m - Very stiff light reddish brown gravelly slightly sandy silty CLAY. Sand is coarse of mudstone lithorelicts. Gravel is angular and subangular of extremely weak light reddish brown mudstone lithorelicts. Destructured mudstone. [LOWER PALEOZOIC]						
31.0		31.40 m to 33.50 m - Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Distinctly weathered locally destructured. Recovered as angular fine to coarse gravel and cobble sized polyhedral blocks with a stiff silty clay matrix. [LOWER PALEOZOIC]		100	0	0		
		31.82m to 32.00; destructured.						
	-70.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

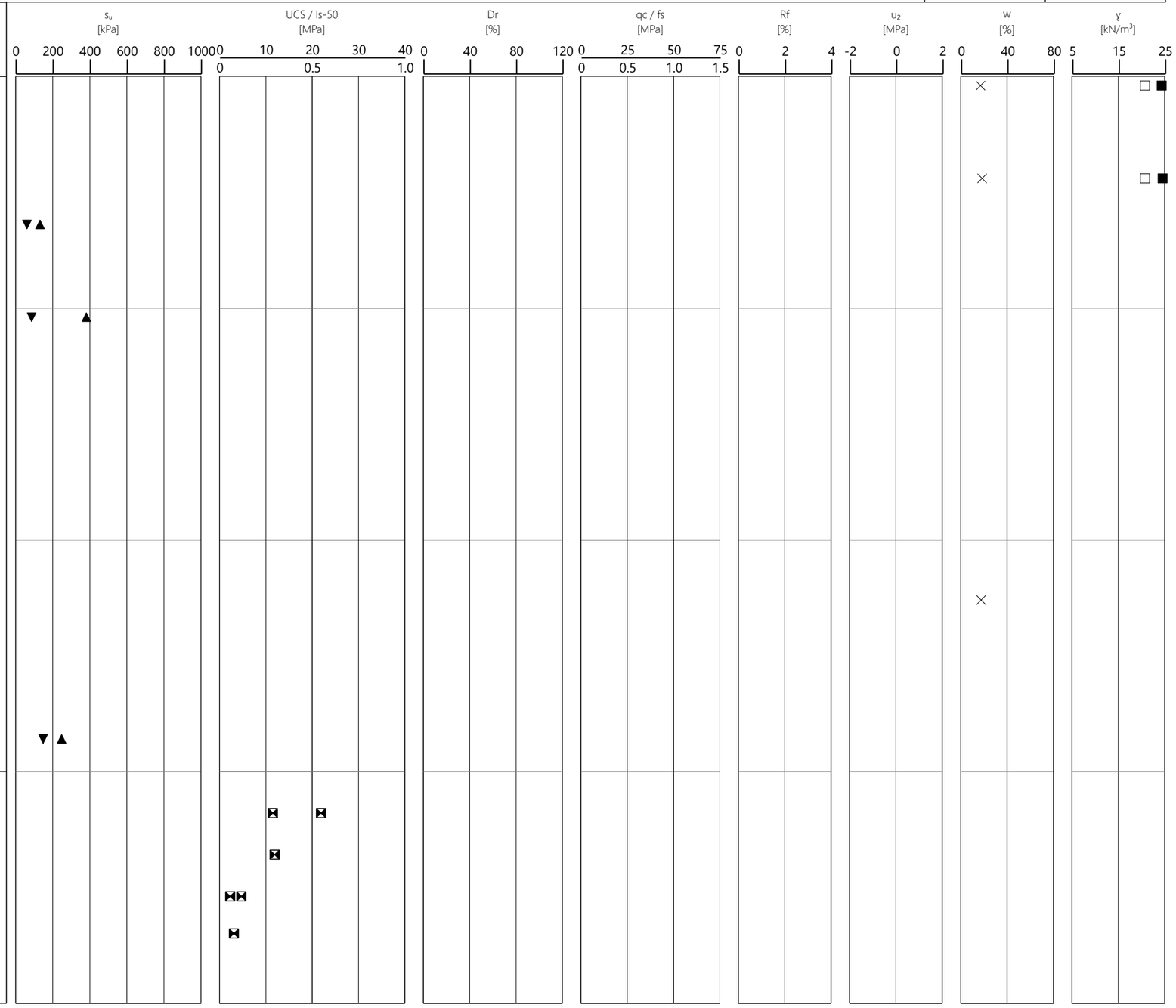
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 17 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		31.40 m to 33.50 m - Extremely weak and very weak thinly laminated reddish brown locally spotted light greenish grey MUDSTONE. Distinctly weathered locally destructured. Recovered as angular fine to coarse gravel and cobble sized polyhedral blocks with a stiff silty clay matrix. [LOWER PALEOZOIC]		100	0	0		
	-71.0							
33.0								
		33.50 m to 35.62 m - Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE. Moderately weathered locally destructured. Medium spaced highly fractured zones. Fractures are very closely to closely spaced locally extremely closely spaced inclined 0 to 5 degrees locally 10 to 20 degrees planar and undulating smooth tight to partly open locally very tight locally open with clay (<0.5mm) infill locally sandy silt		100	49	0		
	-72.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 18 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
35.0	-73.0	33.50 m to 35.62 m - Weak and moderately weak reddish brown locally spotted light greenish grey MUDSTONE. Moderately weathered locally destructured. Medium spaced highly fractured zones. Fractures are very closely to closely spaced locally extremely closely spaced inclined 0 to 5 degrees locally 10 to 20 degrees planar and undulating smooth tight to partly open locally very tight locally open with clay (<0.5mm) infill locally sandy silt (<2.5mm) infill locally with clay smear locally clean. [LOWER PALEOZOIC] 33.50m to 34.23m; Non Intact natural recovered as: highly fractured zone with fractures inclined 0 to 20 degrees extremely closely and very closely spaced undulating smooth tight to partly open clean with sand (<0.5mm) and clay (<0.25mm) infill. Fractures are very closely and closely spaced, inclined 60 to 70 degrees undulating smooth partly open to wide with infill of clay (<20mm). 34.23m to 34.50m; with a medium bed of very stiff and extremely weak reddish brown brecciated mudstone. Destructured. Recovered as angular fine to coarse gravel and cobble sized polyhedral blocks with a very stiff and stiff sandy clay matrix. 34.50m to 34.67m; Non Intact natural recovered as: highly fractured zone with fractures extremely closely spaced inclined 5 to 15 degrees undulating smooth very tight to partly open clean with frequent clay (<0.5mm) infill. 34.86m to 35.00m; Non Intact natural recovered as: highly fractured zone with fractures extremely closely spaced inclined 0 to 25 degree undulating smooth very tight to partly open clean with occasional clay (<0.5mm) infill. 35.03m to 35.22m; extremely closely spaced incipient fractures inclined 0 to 60 degrees. 35.35m to 35.45m; extremely closely spaced incipient fractures inclined 5 to 25 degrees. 35.45m to 35.62m; Non Intact natural recovered as: highly fractured zone with fractures inclined 0 to 10 degrees extremely closely spaced planar smooth very tight and tight clean with frequent clay (<0.25mm) infill.		100	97	42	4	20-25
	-74.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.228

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 19 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		35.62 m to 36.96 m - Moderately weak and medium strong reddish brown MUDSTONE with widely spaced very thin beds of greenish grey fine grained sandstone. Partially weathered. Locally highly fractured. Fractures are medium spaced inclined 0 to 20 degrees planar smooth partly open locally tight locally wide with infill of sandy clay (<0.5mm) locally with infill of clay (<0.5mm - <20mm) locally clean. Fractures are inclined 70 degrees planar smooth tight with clay smear. [LOWER PALEOZOIC]		100	89	68	7	35-40
		35.82m to 35.83m; with a thick lamination of sandstone						
		35.84m to 35.91m; extremely closely spaced incipient fractures inclined 10 to 20 degrees.						
		36.03m to 36.13m; extremely closely spaced incipient fractures inclined 10 degrees.						
		36.45m to 36.51m; Non Intact natural recovered as: highly fractured with fractures extremely closely spaced inclined 10 degrees planar smooth very tight to tight with clay (<0.25mm) infill.						
	75.0	36.72m to 36.74m; with a thick lamination of sandstone						
37.0		36.75m to 36.88m; extremely closely spaced incipient fractures inclined 10 to 20 degrees.						
		36.96 m to 38.50 m - Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE with closely spaced thinly bedded weak reddish brown mudstone. Partially weathered. Highly fractured with fractures extremely to very closely spaced inclined 10 to 20 degree planar rough and smooth tight to wide clean with frequent clay (<20mm) infill. Fractures are inclined 50 degree stepped smooth partly open with clay (<0.5mm) infill. [LOWER PALEOZOIC]		100	92	15	1	25-30
		37.21m to 37.27m; Non Intact drilling induced recovered as: clayey angular and subangular fragments (<30mm x 20mm) of mudstone.						
	76.0							

s_u [kPa]: 0 200 400 600 800 1000
UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0
Dr [%]: 0 40 80 120
qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5
Rf [%]: 0 2 4
u_2 [MPa]: -2 0 2
w [%]: 0 40 80
γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 20 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		36.96 m to 38.50 m - Weak and moderately weak reddish brown locally spotted greenish grey fine grained SANDSTONE with closely spaced thinly bedded weak reddish brown mudstone. Partially weathered. Highly fractured with fractures extremely to very closely spaced inclined 10 to 20 degree planar rough and smooth tight to wide clean with frequent clay (<20mm) infill. Fractures are inclined 50 degree stepped smooth partly open with clay (<0.5mm) infill. [LOWER PALEOZOIC]						
		38.20m to 38.50m; with a medium bed of medium strong reddish brown mottled greenish grey medium grained sandstone.						
		38.50 m to 40.00 m - Weak locally extremely weak thickly laminated to medium spaced reddish brown locally mottled bluish grey MUDSTONE. Distinctly weathered. Fractures are medium spaced locally extremely closely spaced inclined 5 degrees planar smooth locally rough tight to open clean locally with clay (5mm) infill. [LOWER PALEOZOIC]						
	-77.0							
39.0		38.62m to 38.76m; with a thin bed of weak reddish brown fine grained sandstone.						
		39.32m to 39.90m; with a medium bed of reddish brown siltstone.		100	90	81	3	45-50
	-78.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

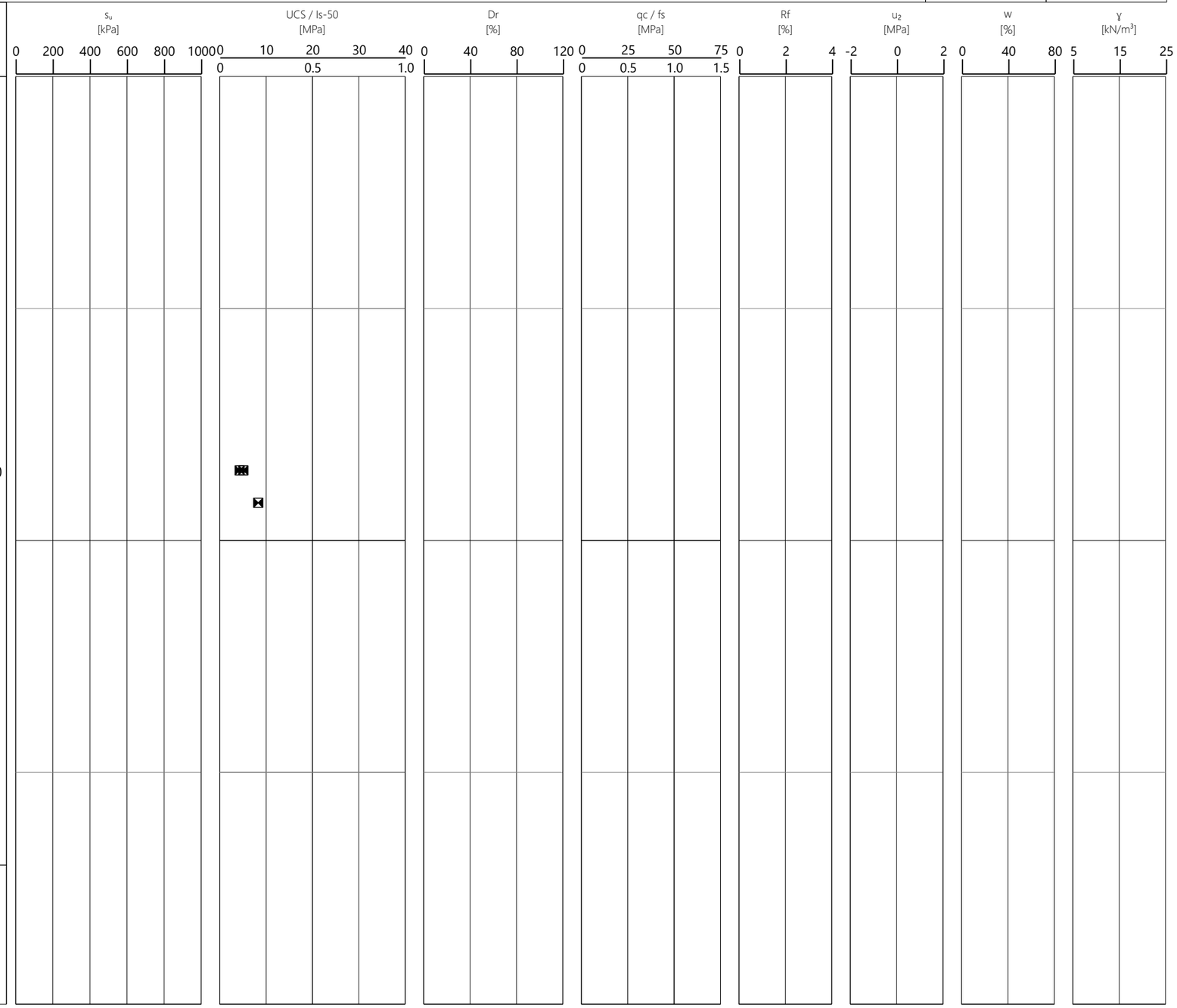
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 21 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		40.00 m to 41.70 m - Weak to medium strong medium bedded to thickly spaced reddish brown and rare bluish grey fine grained SANDSTONE. Calcareous. Partially weathered. Fractures are inclined 5 degrees partly open planar smooth with clay infill (<1mm). [LOWER PALEOZOIC]		100	100	97	1	65-70
41.0	-79.0							
		41.70 m to 46.00 m - Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE. Slightly calcareous. Fresh to partially weathered. Fractures are widely spaced inclined 80 to 85						
	-80.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.231

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM Sheet 22 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		41.70 m to 46.00 m - Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE. Slightly calcareous. Fresh to partially weathered. Fractures are widely spaced inclined 80 to 85 degrees planar rough tight to open with clay infill (<15mm). [LOWER PALEOZOIC]				100		
				100	100			
	-81.0							
43.0								
				100	97			
						93		
							1	80-85
	-82.0							

Depth scale: 43.0 m; -81.0 m; -82.0 m

Column headings: s_u [kPa] 0 200 400 600 800 1000; UCS / Is-50 [MPa] 0 10 20 30 40 / 0 0.5 1.0; Dr [%] 0 40 80 120; qc / fs [MPa] 0 25 50 75 / 0 0.5 1.0 1.5; Rf [%] 0 2 4; u_2 [MPa] -2 0 2; w [%] 0 40 80; γ [kN/m³] 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 23 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
45.0	-83.0	41.70 m to 46.00 m - Medium strong thickly to very thickly bedded light reddish brown and light brown medium and coarse predominately medium grained SANDSTONE. Slightly calcareous. Fresh to partially weathered. Fractures are widely spaced inclined 80 to 85 degrees planar rough tight to open with clay infill (<15mm). [LOWER PALEOZOIC]		100	100	91		
	-84.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m^3]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 24 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		46.00 m to 46.66 m - Weak to medium strong very thinly to medium bedded reddish brown and brown fine to medium predominately fine grained SANDSTONE with a thin bed of fine sandstone with abundant elongated subrounded fine to medium gravel sized clasts of mudstone and rare sandstone (5mm - <18mm). Calcareous. Partially weathered. Fractures are medium spaced inclined 5 degrees planar and undulating rough very tight and partly open clean and with clay (0.5mm) infill. [LOWER PALEOZOIC]					3	
47.0	-85.0	46.66 m to 48.20 m - Medium strong light greenish grey medium to thickly bedded fine to coarse predominately medium SANDSTONE with occasional subrounded fine to medium gravel sized clasts of mudstone. Calcareous. Fractures are inclined 10 degrees planar rough open with clay infill (1mm). Fractures are widely spaced locally very closely spaced, inclined 50 degrees planar smooth to rough tight to open with clay infill (0.5m to 1mm). [LOWER PALEOZOIC]		100	100	95	2	55-60
		47.27m to 47.50m; with occasional light bluish grey subrounded coarse gravel size clasts of mudstone.						
	-86.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.234

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
	Client	Sure Partners Ltd			Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642			Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum	UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 25 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		46.66 m to 48.20 m - Medium strong light greenish grey medium to thickly bedded fine to coarse predominately medium SANDSTONE with occasional subrounded fine to medium gravel sized clasts of mudstone. Calcareous. Fractures are inclined 10 degrees planar rough open with clay infill (1mm). Fractures are widely spaced locally very closely spaced, inclined 50 degrees planar smooth to rough tight to open with clay infill (0.5m to 1mm). [LOWER PALEOZOIC]				75		
		48.20 m to 51.50 m - Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE. Distinctly weathered. Fractures are medium to widely spaced, locally closely inclined 5 degrees medium to widely spaced planar smooth partly open locally very tight with clay (<1mm) infill. [LOWER PALEOZOIC]		100	93			
49.0	-87.0	48.20m to 48.30m; Non Intact recovered as: firm reddish brown and bluish grey gravelly silty clay. gravel is subangular and subrounded fine to coarse of sandstone, mudstone and siltstone.		100	100	96	2	45-50
	-88.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	51.50	**BH13**
	Fugro Reference	F186642		Seabed Level [m LAT]	-38.10	
	Coordinates	300820.59 mE 5847130.59 mN	Coordinate Datum / UTM Zone 30	Date	03 07 2022 to 05 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 26 of 26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		48.20 m to 51.50 m - Weak locally extremely weak medium to very thickly bedded reddish brown locally spotted bluish grey MUDSTONE. Distinctly weathered. Fractures are medium to widely spaced, locally closely inclined 5 degrees medium to widely spaced planar smooth partly open locally very tight with clay (<1mm) infill. [LOWER PALEOZOIC]						
		50.00m to 50.30m; assumed zone of core loss.						
	-89.0			80	80	73		
51.0								
	-90.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 1 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 2 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 3 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 4 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 5 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 6 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 7 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									13		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 8 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 9 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 10 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 11 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 12 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH13**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 13 of 26
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 14 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 15 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 16 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
31.00 - 32.00	NI							Non intact.	31		
32.00 - 33.50	NI							Non intact.			

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 17 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
33.50 - 34.23	NI							HFZ.	33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 18 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
34.23 - 34.50	NI							Non intact.			
34.50 - 34.67	NI							HFZ.			
34.66 - 34.67	BF	20		VT	Un	Sm		Clean.		20 °	
34.72	BF	0		T	Un	Sm		Clay (<0.25mm).		0 °	
34.73	BF	5		T	Un	Sm		Clay (<0.25mm).		5 °	
34.80	BF	10		PO	Un	Sm		Clay (<0.5mm).		10 °	
34.83	BF	5		O	Pl	Sm		Sandy silt (<2.5mm).		5 °	
34.86 - 35.00	NI							HFZ.			
35.01	BF	5		PO	Pl	Sm		Clay (<0.5mm).	35	5 °	
35.05	BF	0		T	Pl	Sm		Clay smearing.		0 °	
35.22	BF	5		VT	Pl	Sm		Clean.		5 °	
35.45 - 35.62	NI							HFZ.			
35.66 - 35.67	BF	15		VT	Un	Sm		Clean.		15 °	
35.66 - 35.84	J	70		T	Un	Sm		Clay (<0.25mm).		70 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 19 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
36.03 - 36.04	BF	10		T	Un	Sm		Clean.		10 °	
36.20 - 36.22	BF	20		W	Un	Sm		Clay (<20mm).		20 °	
36.22 - 36.30	J	70		T	Pl	Sm		Clay smearing.		70 °	
36.29 - 36.30	BF	0		PO	Pl	Sm		Clay (<0.5mm).		0 °	
36.45 - 36.51	NI							HFZ.			
36.52 - 36.53	BF	10		PO	Pl	Sm		Gravelly clay.		10 °	
36.80 - 36.81	BF	10		PO	Pl	Sm		Sandy clay (<0.5mm).		10 °	
36.94 - 36.96	BF	15		MW	Pl	Sm		Clay (<1mm).		15 °	
									37		
37.21 - 37.27	NI							NIDI.			
37.40 - 38.20	NI							HFZ.			

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID	**BH13**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum) -38.10	Sheet 20 of 26	
	Hole Type	Discontinuity Log		Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
38.33 - 38.39	J	50		PO	Sp	Sm		Clay (<0.5mm).		50 °	
38.81	BF	5		O	Pl	Ro		Clay (5mm)		5 °	
									39		
39.05 - 39.07	NI										
39.13 - 39.14	BF	5		T	Pl	Sm		clean		5 °	
39.43 - 39.44	BF	5		T	Pl	Sm		clean		5 °	
39.57 - 39.58	BF	5		T	Pl	Sm		clean		5 °	
39.59 - 39.60	BF	5		T	Pl	Sm		clean		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 21 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
40.85 - 40.86	BF	5		PO	Pl	Sm		clay(<1mm)	41	5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 22 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									43		
43.70 - 43.71	NI										
43.86 - 44.18	J	80		T						80 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 23 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
44.25 - 44.26	NI										
44.42 - 44.43	NI										
44.58 - 44.59	NI										
									45		
45.10 - 46.00	J	85		W	Pl	Ro		clay(15mm)		85 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 24 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
46.03 - 46.04	BF	5		VT	Un	Ro				5 °	
46.37 - 46.38	BF	5		O	Pl	Ro		clay (1mm)		5 °	
									47		
47.27 - 47.28	BF	10		O	Pl	Ro		clay (1mm)		10 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 25 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
48.04 - 48.05	NI	5								5 °	
48.05 - 48.10	J	50		O	Pl	Sm		clay (1mm)		50 °	
48.10 - 48.11	NI	5								5 °	
48.17 - 48.18	NI	10								10 °	
48.17 - 48.20	J	50		PO	Pl	Sm		clay(<1mm)		50 °	
48.30 - 48.31	BF	5		VT	Pl	Sm				5 °	
48.50 - 48.51	NI	5								5 °	
48.54 - 48.55	NI	5								5 °	
48.70 - 48.71	BF	5		PO	Pl	Sm		clay(<1mm)		5 °	
48.93 - 48.94	NI	10								10 °	
									49		
49.15 - 49.16	NI	5								5 °	
49.40 - 49.41	NI	5								5 °	
49.63 - 49.64	NI	5								5 °	
49.72 - 49.73	BF	5		PO	Pl	Sm		clay(<1mm)		5 °	
49.89 - 49.90	BF	5		PO	Pl	Sm		clay(<1mm)		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 26 of 26
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
50.90 - 50.91	NI	10								10 °	
50.96 - 50.97	BF	5		T	Pl	Sm		clay(<1mm)		5 °	
									51		
51.22 - 51.23	BF	5		T	Pl	Sm		clay(<1mm)		5 °	
51.29 - 51.30	NI										

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH13**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E300820.59 N5847130.59	Ground Elevation (m Datum)	-38.10	Sheet 1 of 1
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	51.50	RORC	03 07 2022	05 07 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	KH,JG,AB,CH	RF/MN	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 54.50m; Cantilever to LAT = 16.40m; LAT to Mud = 38.10m 3. All depths refer to depth below seabed level.

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
03 07 2022	07:00	0.00	0.00		
03 07 2022	19:00	2.50	2.50		
04 07 2022	07:00	15.50	15.50		
04 07 2022	19:00	29.50	29.50		
05 07 2022	07:00	50.00	50.00		
05 07 2022	08:40	51.50	51.50		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.00	178	1.50	178
51.50	146	51.50	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	0.50	W	0		00:07
0.50	1.00	W	0		00:12
1.00	1.50	W	0		00:07
1.50	2.00	W	0		00:05
2.00	2.50	W	0		00:05
2.50	3.00	PB	0		00:05
3.00	4.00	PB	75	Grey	00:11
4.00	4.50	PB	100	Grey	00:12
4.50	5.00	PB	75	Grey	00:13
5.00	5.50	PB	0		00:24
5.50	6.50	PB	0		00:20
6.50	7.00	PB	0		00:24
7.00	8.00	PB	0		00:21
8.00	9.00	PB	0		00:35
9.00	9.50	PB	0		00:26
9.50	10.50	PB	0		00:09
10.50	11.00	PB	0		00:13
11.00	12.00	PB	0		00:10
12.00	13.00	PB	0		00:13
13.00	14.00	PB	0		00:22
14.00	14.50	PB	0		00:21
14.50	15.50	PB	0		00:40
15.50	16.50	PB	0		
16.50	17.50	PB	0		
17.50	19.00	PB	0		
19.00	20.00	PB	0		
20.00	21.00	PB	0		
21.00	22.50	PB	0		
22.50	23.50	PB	0		
23.50	24.50	PB	0		
24.50	26.00	PB	0		
26.00	27.00	PB	0		
27.00	28.00	PB	0		
28.00	28.50	PB	0		
28.50	29.50	PB	0		
29.50	30.00	PB	0		
30.00	31.00	PB	0		
31.00	32.00	PB	0		
32.00	33.00	PB	0		
33.00	34.50	PB	0		
34.50	35.50	PB	0		
35.50	37.00	PB	0		
37.00	38.50	PB	0		
38.50	40.00	PB	0		
40.00	41.50	PB	0		
41.50	43.00	PB	0		
43.00	44.50	PB	0		
44.50	46.00	PB	0		
46.00	47.50	PB	0		
47.50	49.00	PB	0		
49.00	50.00	PB	0		
50.00	51.50	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
14.00	14.50	102
14.50	15.50	102
17.50	19.00	102
21.00	22.50	102
22.50	23.50	102
23.50	24.50	102
24.50	26.00	102
31.00	32.00	102
32.00	33.00	102
33.00	34.50	102
34.50	35.50	102
35.50	37.00	102
37.00	38.50	102
38.50	40.00	102
40.00	41.50	102
41.50	43.00	102
43.00	44.50	102
44.50	46.00	102
46.00	47.50	102
47.50	49.00	102
49.00	50.00	102
50.00	51.50	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	51.50	Arisings	

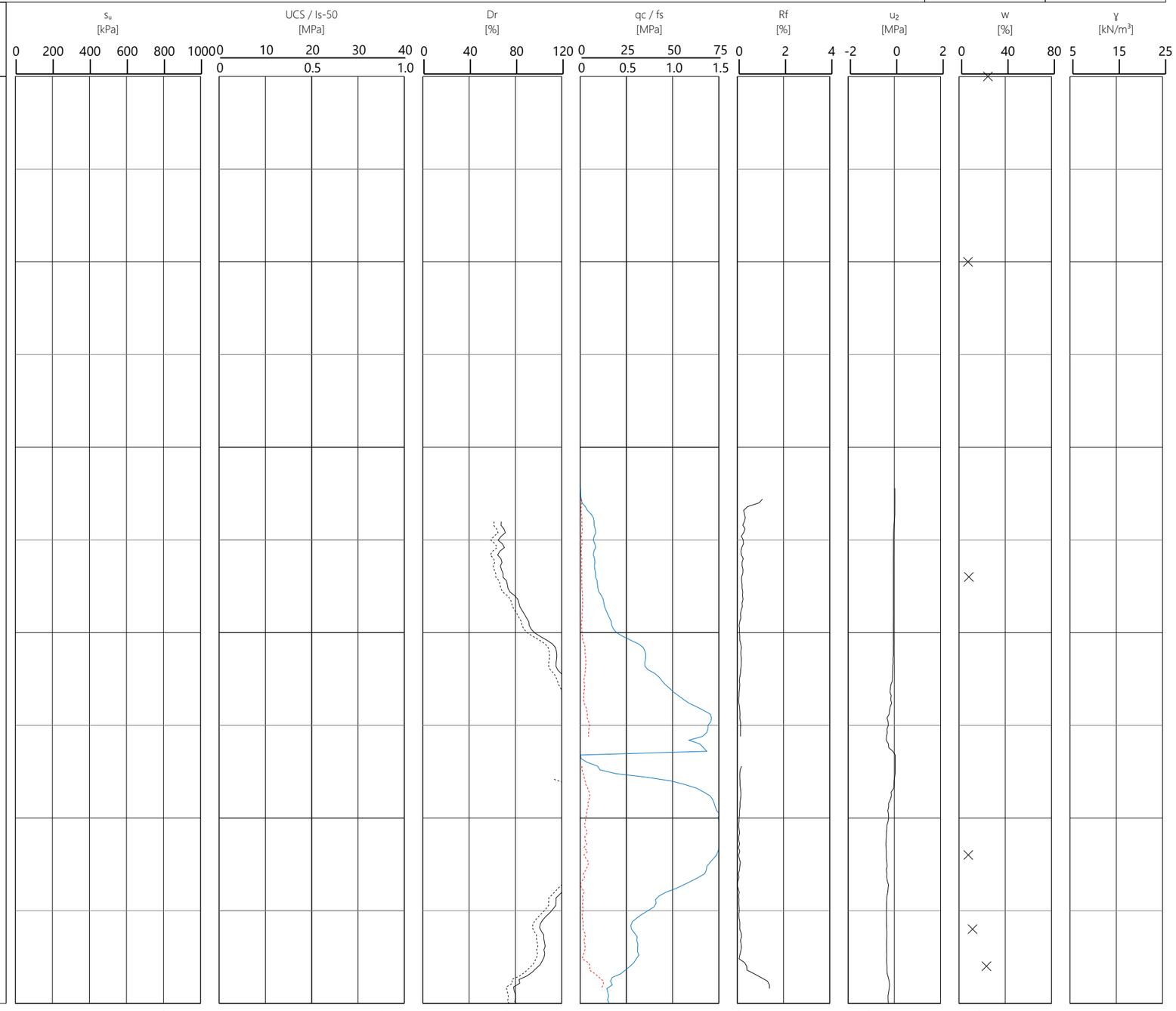
Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 1 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 0.50 m - Yellowish brown gravelly SAND. Sand is fine to coarse predominately coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, basalt, chert and siltstone. [HOLOCENE DEPOSITS]						
	-29.0							
1.0		0.50 m to 2.20 m - Greyish brown to yellowish brown gravelly to very gravelly SAND. Sand is fine to coarse . Gravel is angular to well rounded fine to coarse of mixed lithologies including sandstone, basalt, siltstone and chert. [HOLOCENE DEPOSITS] 0.50m to 1.50m; with occasional shell fragments (<5mm) 1.50m to 2.20m; with rare shell fragments (<5mm).						
	-30.0							
2.0								
		2.20 m to 5.60 m - Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to rounded fine to medium locally coarse of quartz, siltstone, basalt and schist. [WESTERN IRISH SEA FORMATION]						
	-31.0							
3.0								
	-32.0							
4.0								
	-33.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

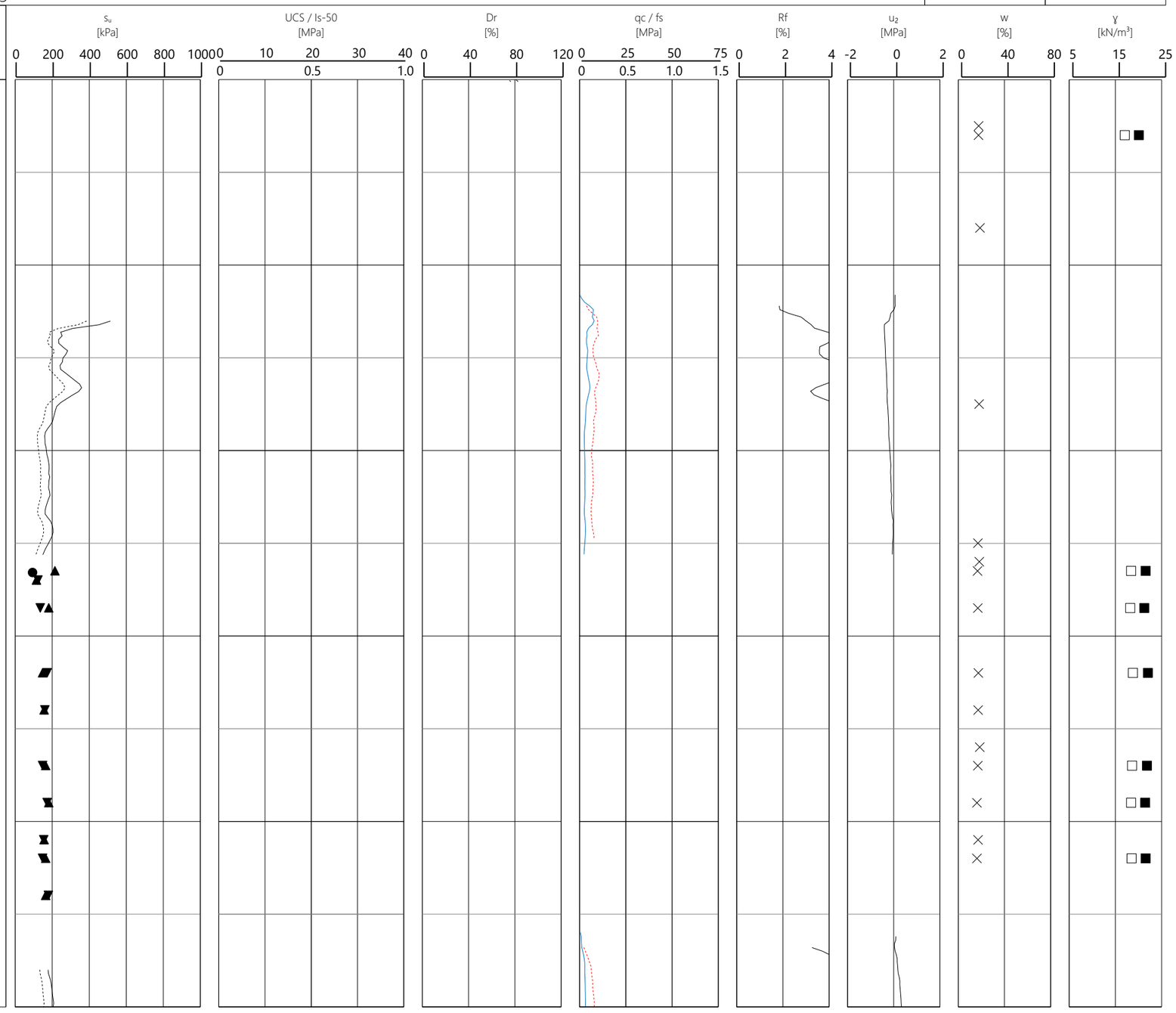
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	60.10
Fugro Reference	F186642			Seabed Level [m LAT]	-28.40
Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum	UTM Zone 30	Date	06 07 2022 to 09 07 2022
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 13

BH20

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		2.20 m to 5.60 m - Dense to very dense dark grey and dark greenish grey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to rounded fine to medium locally coarse of quartz, siltstone, basalt and schist. [WESTERN IRISH SEA FORMATION]						
	-34.0	5.05m to 5.60m; with thick bed of dark brownish grey very silty fine sand with occasional pockets of clay.						
6.0		5.60 m to 16.50 m - Stiff dark greyish brown slightly gravelly slightly sandy CLAY. Sand is fine. Gravel is subangular to rounded fine to coarse of basalt, quartz and siltstone. [CARDIGAN BAY FORMATION]						
	-35.0	5.85m to 6.10m; with a medium bed of dark brownish grey slightly sandy silty clay.						
7.0								
	-36.0							
8.0								
	-37.0							
9.0								
	-38.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

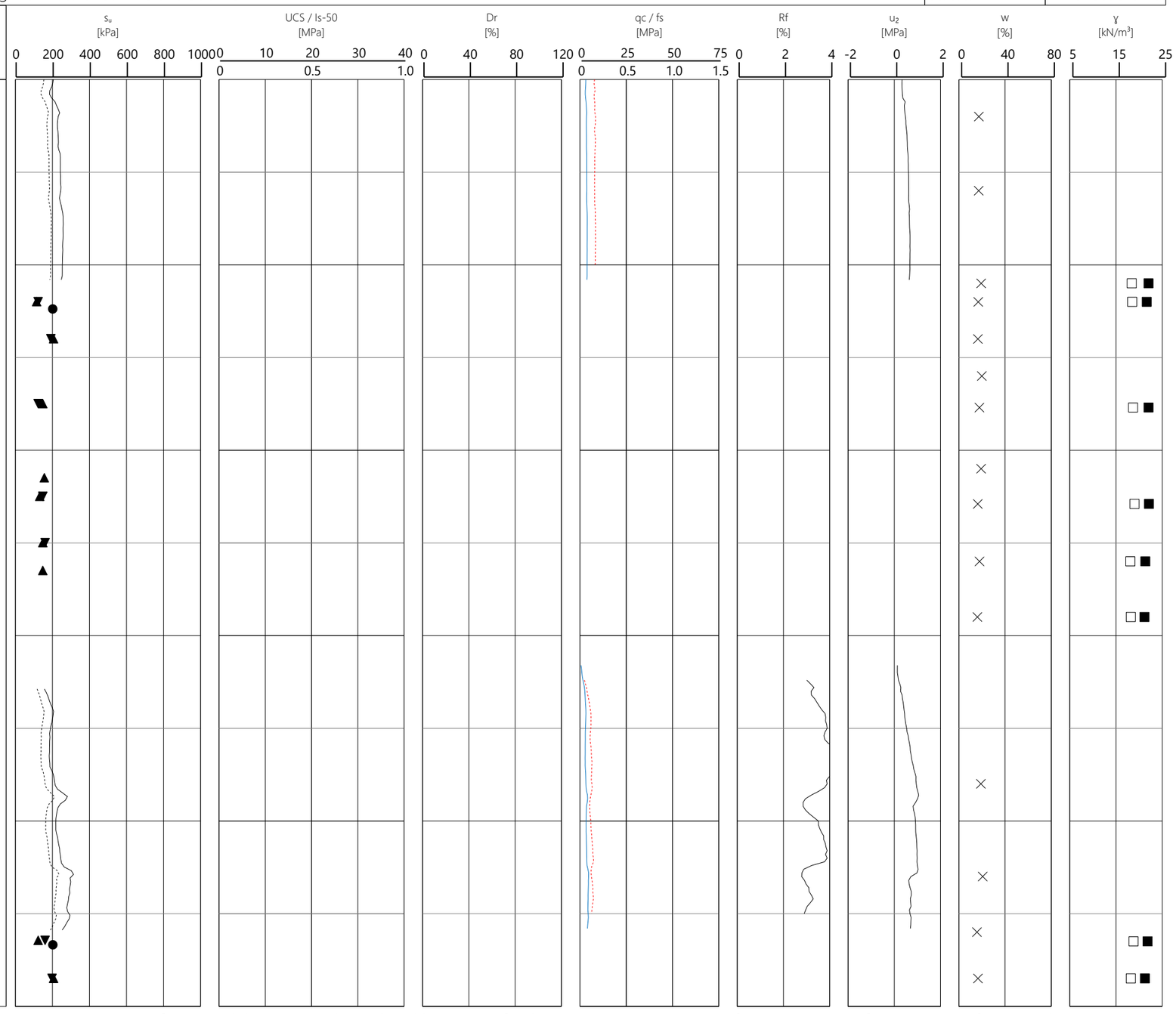
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
11.0	-39.0	5.60 m to 16.50 m - Stiff dark greyish brown slightly gravelly slightly sandy CLAY. Sand is fine. Gravel is subangular to rounded fine to coarse of basalt, quartz and siltstone. [CARDIGAN BAY FORMATION]						
12.0	-40.0							
13.0	-41.0							
14.0	-42.0	14.30m to 14.60m; with frequent pockets of fine and medium sand (10mm x <20mm).						
	-43.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
16.0	-44.0	5.60 m to 16.50 m - Stiff dark greyish brown slightly gravelly slightly sandy CLAY. Sand is fine. Gravel is subangular to rounded fine to coarse of basalt, quartz and siltstone. [CARDIGAN BAY FORMATION] 15.10m to 16.60m; with rare pockets of fine and medium sand (<20mm x 10mm).						
17.0	-45.0	16.50 m to 35.60 m - Very dense becoming dense greyish brown slightly silty SAND with rare mica crystals (<1mm). Sand is fine. [CARDIGAN BAY FORMATION] 17.10m to 17.20m; with a thin bed of firm greyish brown slightly gravelly slightly sandy clayey silt.						
18.0	-46.0							
19.0	-47.0							
	-48.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
21.0	-49.0	16.50 m to 35.60 m - Very dense becoming dense greyish brown slightly silty SAND with rare mica crystals (<1mm). Sand is fine. [CARDIGAN BAY FORMATION]						
	-50.0							
22.0								
	-51.0	22.60m to 24.00m; slightly silty to silty fine to medium predominately fine.						
23.0								
	-52.0							
24.0								
	-53.0	24.40m to 24.50m; silty fine.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		16.50 m to 35.60 m - Very dense becoming dense greyish brown slightly silty SAND with rare mica crystals (<1mm). Sand is fine. [CARDIGAN BAY FORMATION]						
	-54.0							
26.0								
	-55.0							
27.0								
	-56.0	27.40m to 28.00m; silty fine.						
28.0								
	-57.0							
29.0		29.10m to 29.50m; very silty fine.						
	-58.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

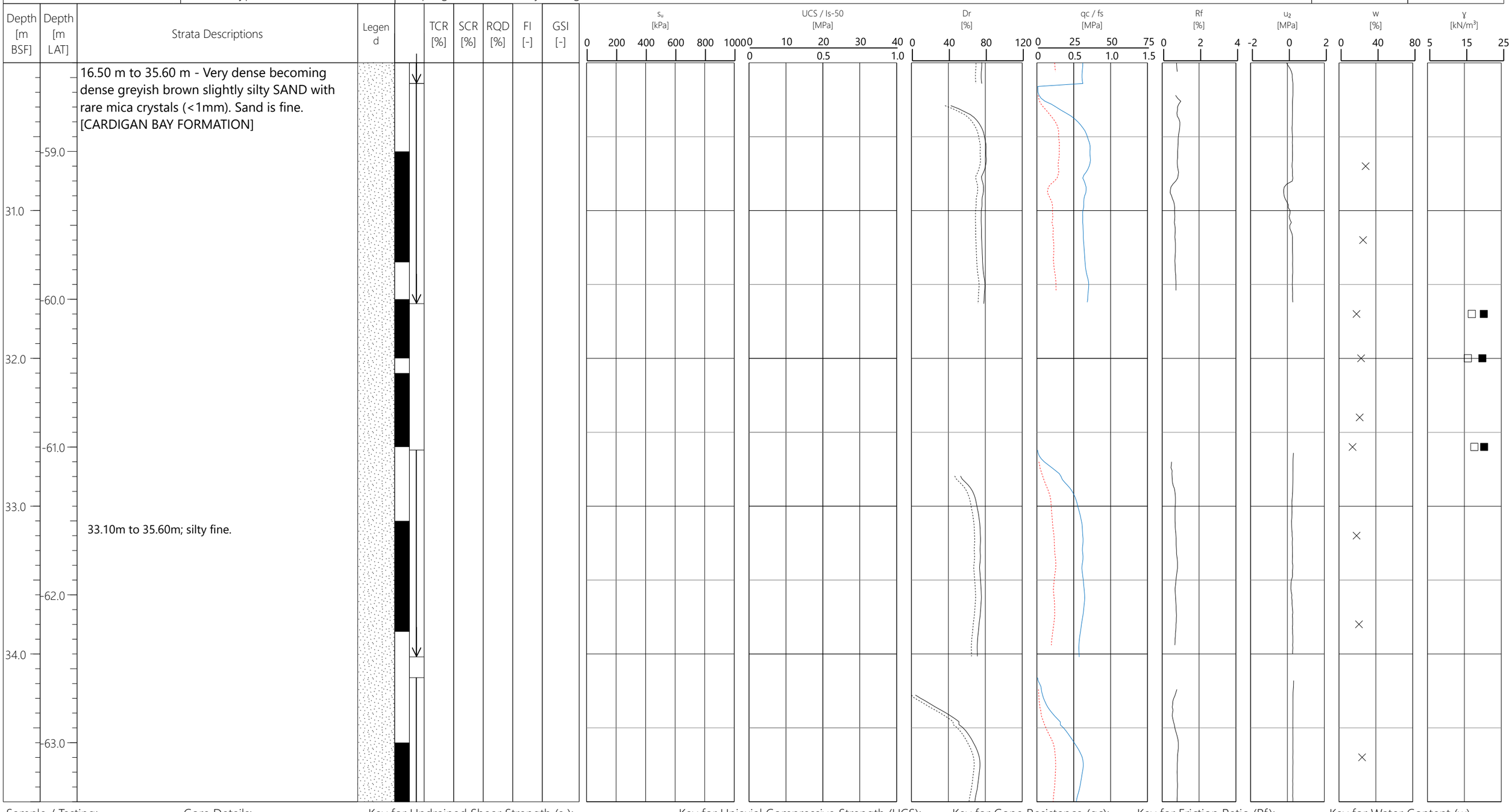
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.269

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
31.0	-59.0	16.50 m to 35.60 m - Very dense becoming dense greyish brown slightly silty SAND with rare mica crystals (<1mm). Sand is fine. [CARDIGAN BAY FORMATION]						
32.0	-60.0							
33.0	-61.0	33.10m to 35.60m; silty fine.						
34.0	-62.0							
	-63.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

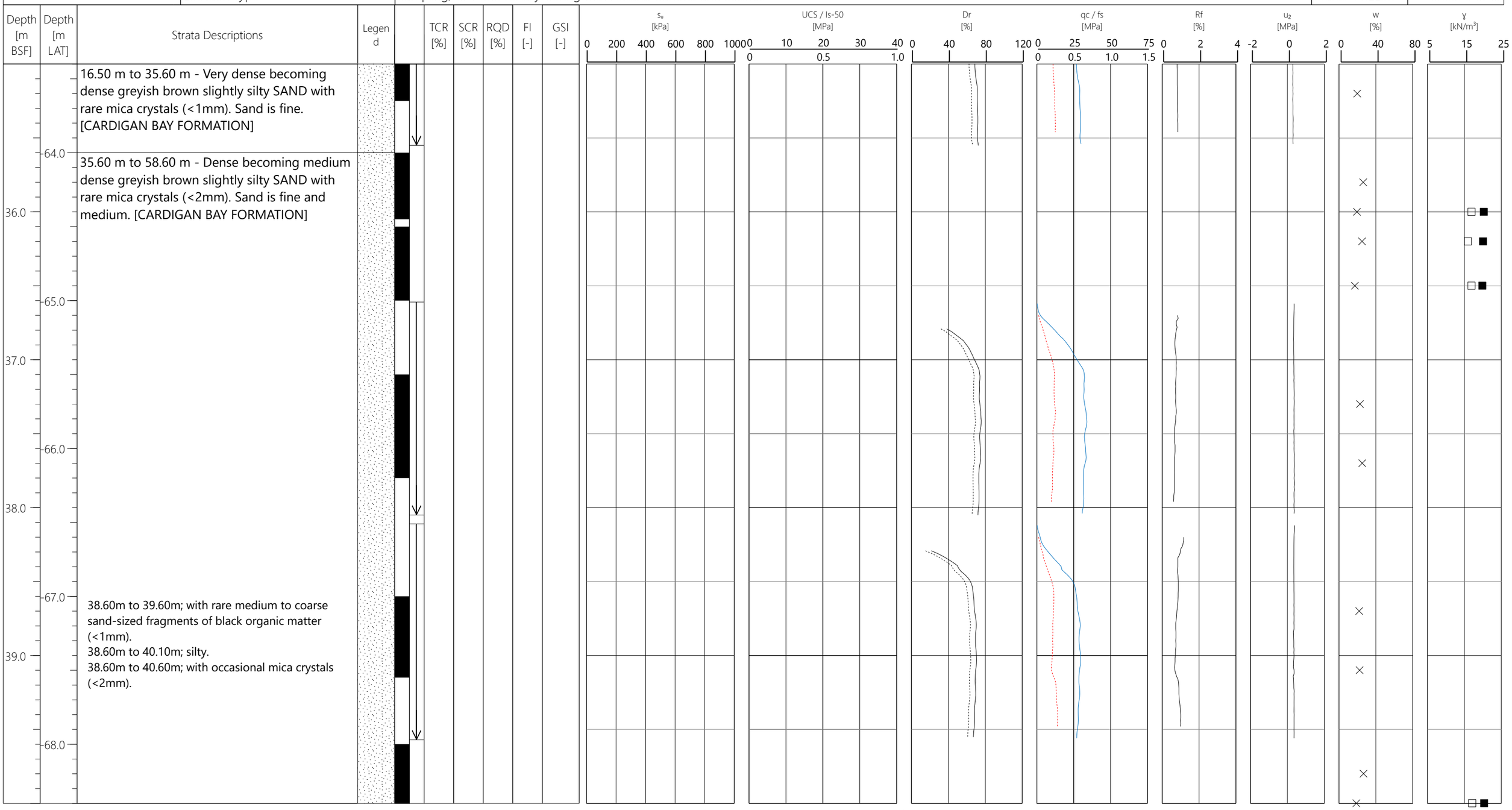
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		16.50 m to 35.60 m - Very dense becoming dense greyish brown slightly silty SAND with rare mica crystals (<1mm). Sand is fine. [CARDIGAN BAY FORMATION]						
	-64.0							
		35.60 m to 58.60 m - Dense becoming medium dense greyish brown slightly silty SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION]						
36.0								
	-65.0							
37.0								
	-66.0							
38.0								
	-67.0	38.60m to 39.60m; with rare medium to coarse sand-sized fragments of black organic matter (<1mm). 38.60m to 40.10m; silty. 38.60m to 40.60m; with occasional mica crystals (<2mm).						
39.0								
	-68.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

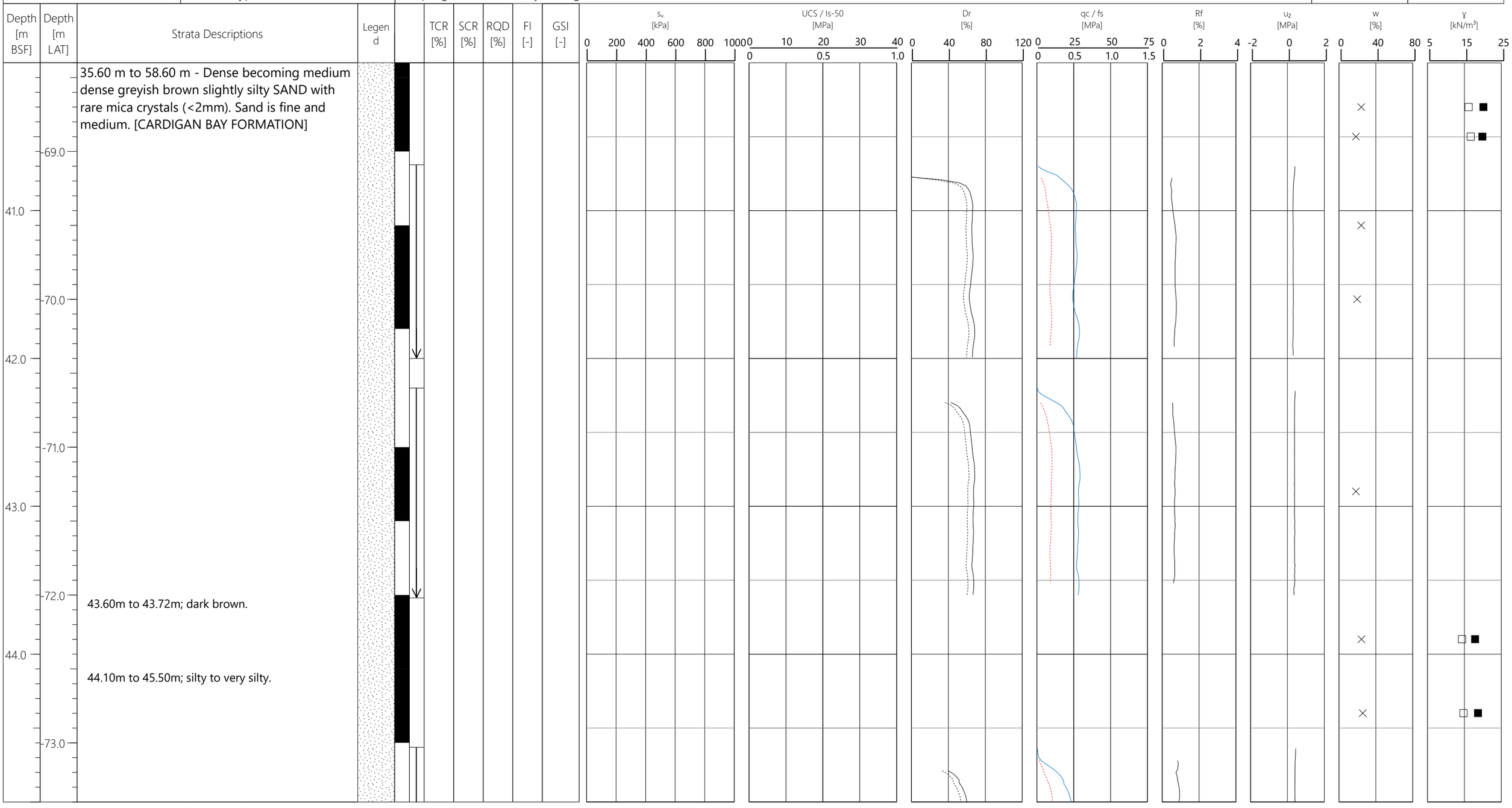
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
41.0	-69.0	35.60 m to 58.60 m - Dense becoming medium dense greyish brown slightly silty SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION]						
42.0	-70.0							
	-71.0							
43.0		43.60m to 43.72m; dark brown.						
	-72.0							
44.0		44.10m to 45.50m; silty to very silty.						
	-73.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

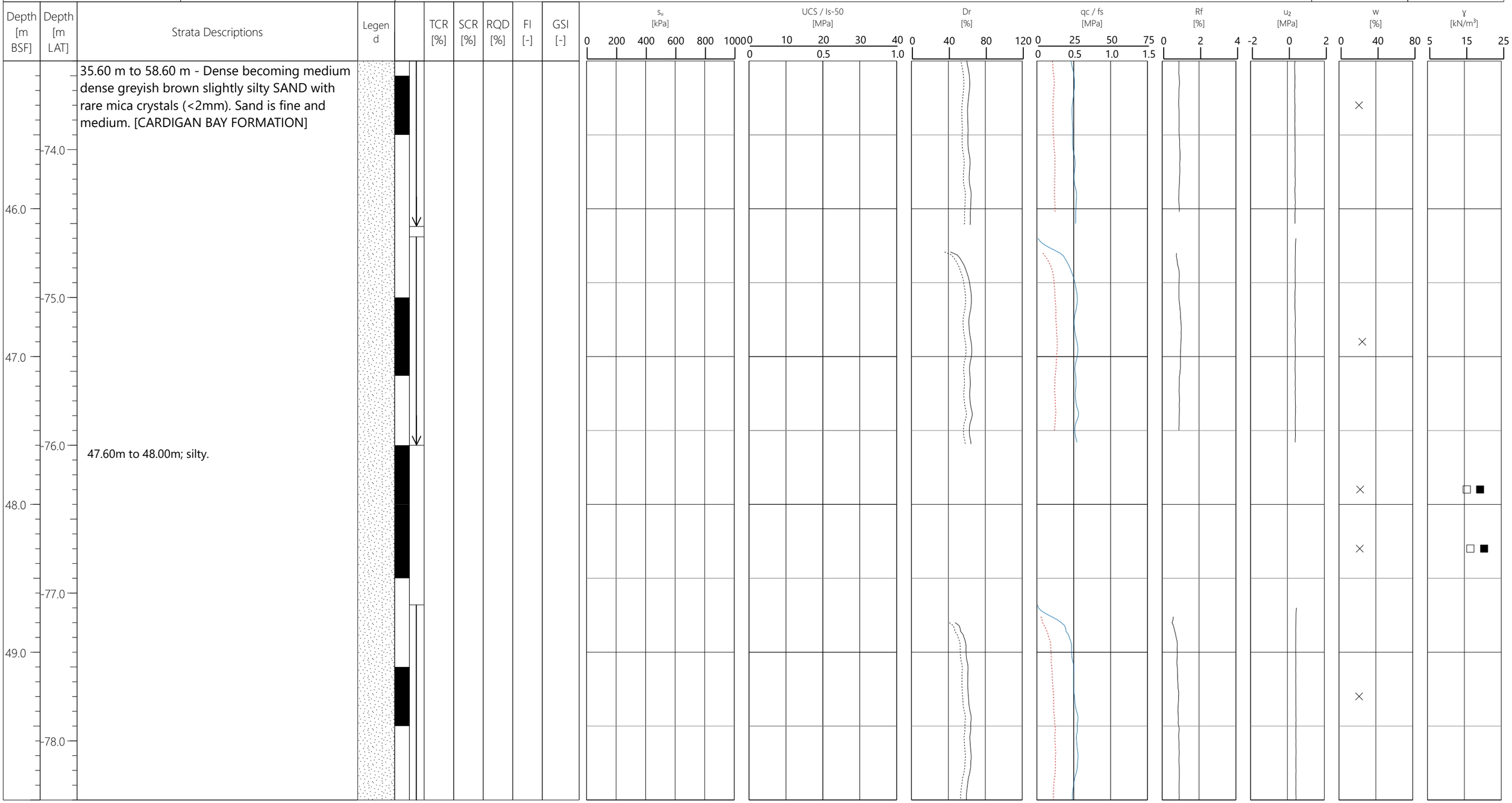
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
46.0	-74.0	35.60 m to 58.60 m - Dense becoming medium dense greyish brown slightly silty SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION]						
47.0	-75.0							
	-76.0	47.60m to 48.00m; silty.						
48.0								
	-77.0							
49.0								
	-78.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

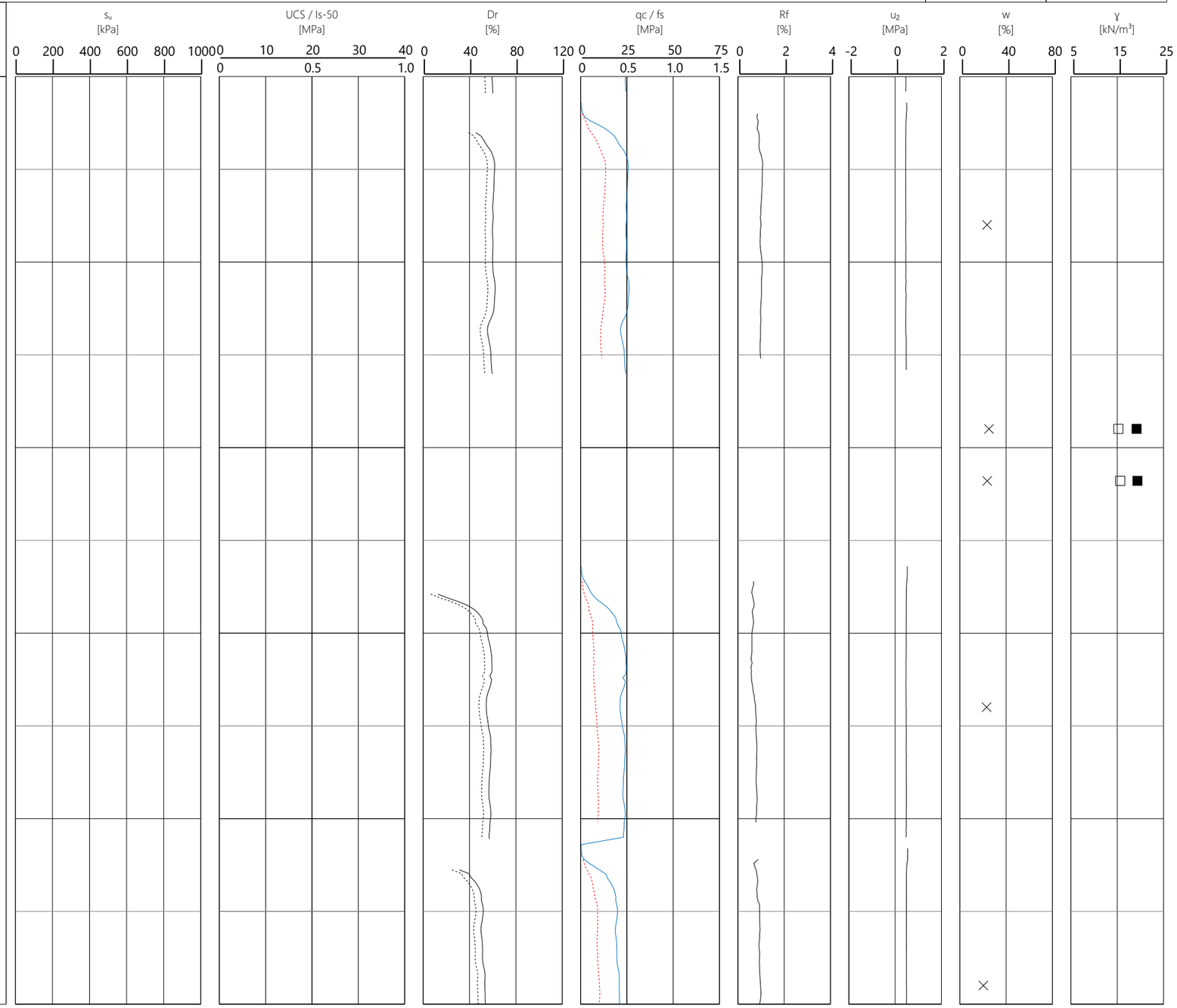
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	60.10	**BH20**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.40	
Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum	UTM Zone 30	Date	06 07 2022 to 09 07 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 11 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-79.0	35.60 m to 58.60 m - Dense becoming medium dense greyish brown slightly silty SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION]						
51.0		50.60m to 51.00m; silty.						
	-80.0							
52.0								
	-81.0							
53.0								
	-82.0							
54.0								
	-83.0	54.50m to 55.20m; silty.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.274

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 12 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
56.0	-84.0	35.60 m to 58.60 m - Dense becoming medium dense greyish brown slightly silty SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION] 55.70m to 55.80m; with occasional mica crystals (<2mm).						
57.0	-85.0							
58.0	-86.0							
59.0	-87.0	58.60 m to 60.10 m - Medium dense dark greyish brown SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION] 58.60m to 59.60m; with rare shell fragments (<2mm).						
	-88.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

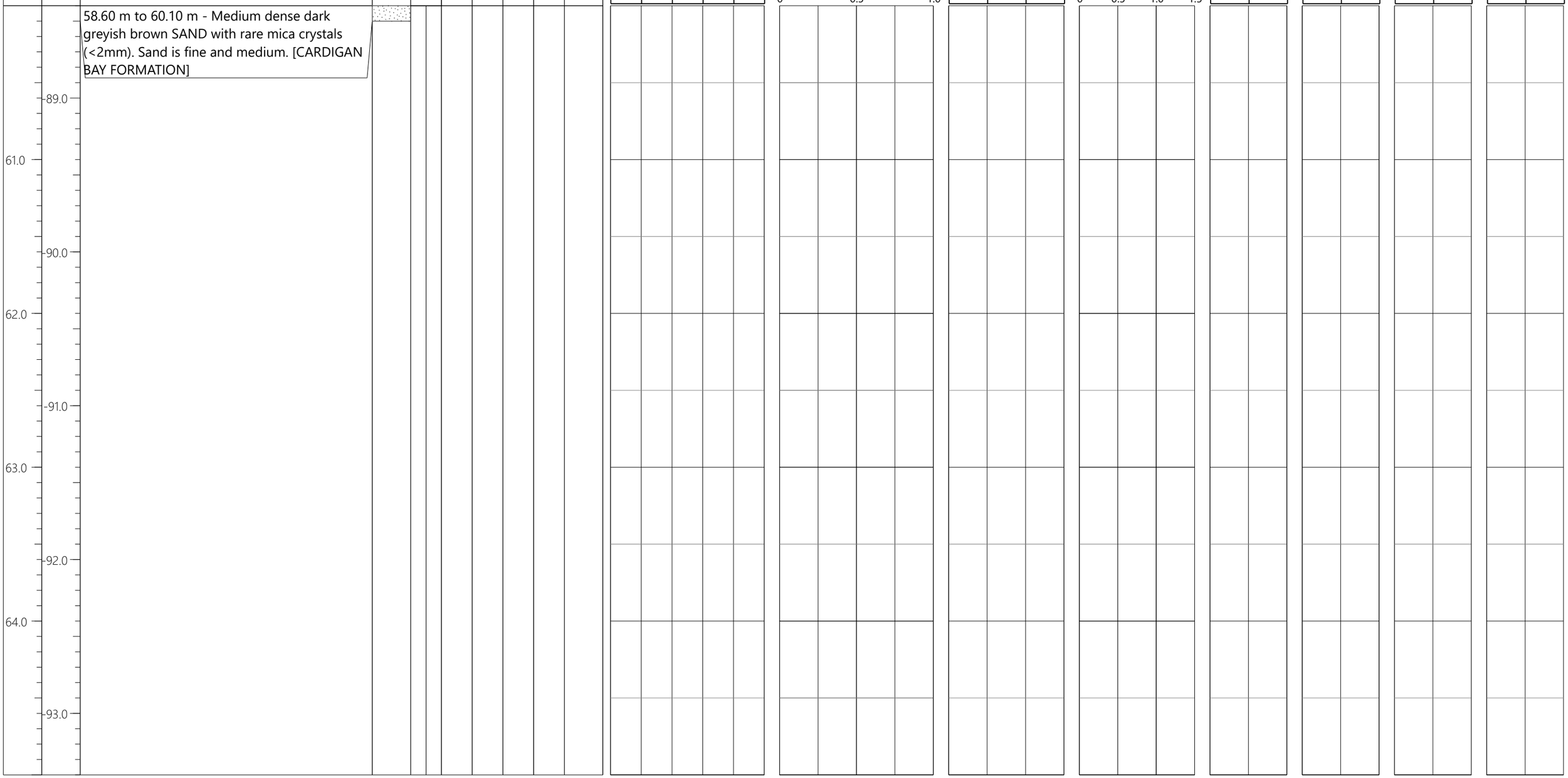
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.275

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	60.10	**BH20**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.40	
	Coordinates	303136.14 mE 5857856.82 mN	Coordinate Datum / UTM Zone 30	Date	06 07 2022 to 09 07 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 13

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		58.60 m to 60.10 m - Medium dense dark greyish brown SAND with rare mica crystals (<2mm). Sand is fine and medium. [CARDIGAN BAY FORMATION]						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.276

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH20**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E303136.14 N5857856.82	Ground Elevation (m Datum)	-28.40	Sheet 1 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	60.10	RC	06 07 2022	09 07 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	JL, JG, AB, CH	MN/RF	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 44.50m; Cantilever to LAT = 16.10m; LAT to Mud = 2840m 3. All depths refer to depth below seabed level.

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
06 07 2022	19:00	0.00	0.00		
06 07 2022	22:50	2.20	2.20		
07 07 2022	07:19	2.60	2.20		
07 07 2022	19:00	16.60	16.60		
08 07 2022	07:00	30.10	30.10		
08 07 2022	19:00	42.10	42.10		
09 07 2022	05:45	56.60	56.60		
09 07 2022	07:00	56.60	56.60		
09 07 2022	09:06	60.10	58.60		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.20	177	2.20	177
60.10	146	58.10	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	2.20	W	0		
2.20	2.60	PB	100	Grey	
2.60	3.60	PB	100	Grey	
3.60	4.10	PB	100	Grey	
4.10	4.60	PB	100	Grey	
4.60	5.10	PB	100	Grey	
5.10	5.60	PB	0		
5.60	6.10	PB	0		
6.10	6.60	PB	0		
6.60	7.60	PB	0		
7.60	8.60	PB	0		
8.60	9.60	PB	0		
9.60	10.10	PB	0		
10.10	11.10	PB	0		
11.10	12.10	PB	0		
12.10	13.10	PB	0		
13.10	13.60	PB	0		
13.60	14.60	PB	0		
14.60	15.60	PB	0		
15.60	16.60	PB	0		
16.60	17.10	PB	0		
17.10	17.60	PB	0		
17.60	18.10	PB	0		
18.10	18.60	PB	0		
18.60	19.60	PB	0		
19.60	20.10	PB	0		
20.10	20.60	PB	0		
20.60	21.10	PB	0		
21.10	22.10	PB	0		
22.10	22.60	PB	0		
22.60	23.60	PB	0		
23.60	24.10	PB	0		
24.10	24.60	PB	0		
24.60	25.10	PB	0		
25.10	26.10	PB	0		
26.10	26.60	PB	0		
26.60	27.60	PB	0		
27.60	28.10	PB	0		
28.10	28.60	PB	0		
28.60	29.10	PB	0		
29.10	30.10	PB	0		
30.10	30.60	PB	0		
30.60	31.60	PB	0		
31.60	32.60	PB	0		
32.60	33.10	PB	0		
33.10	34.10	PB	0		
34.10	34.60	PB	0		
34.60	35.60	PB	0		
35.60	36.60	PB	0		
36.60	37.10	PB	0		
37.10	38.10	PB	0		
38.10	38.60	PB	0		
38.60	39.60	PB	0		
39.60	40.60	PB	0		
40.60	41.10	PB	0		
41.10	42.10	PB	0		
42.10	42.60	PB	0		
42.60	43.60	PB	0		
43.60	44.60	PB	0		
44.60	45.10	PB	0		
45.10	46.10	PB	0		
46.10	46.60	PB	0		
46.60	47.60	PB	0		
47.60	48.60	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	60.10	Arisings	

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH20**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E303136.14 N5857856.82	Ground Elevation (m Datum)	-28.40	Sheet 2 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
48.60	49.10	PB	0		
49.10	50.10	PB	0		
50.10	50.60	PB	0		
50.60	51.60	PB	0		
51.60	52.10	PB	0		
52.10	52.60	PB	0		
52.60	53.10	PB	0		
53.10	54.10	PB	0		
54.10	54.60	PB	0		
54.60	55.60	PB	0		
55.60	56.60	PB	0		
56.60	57.10	PB	0		
57.10	58.10	PB	0		
58.10	58.60	PB	0		
58.60	60.10	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

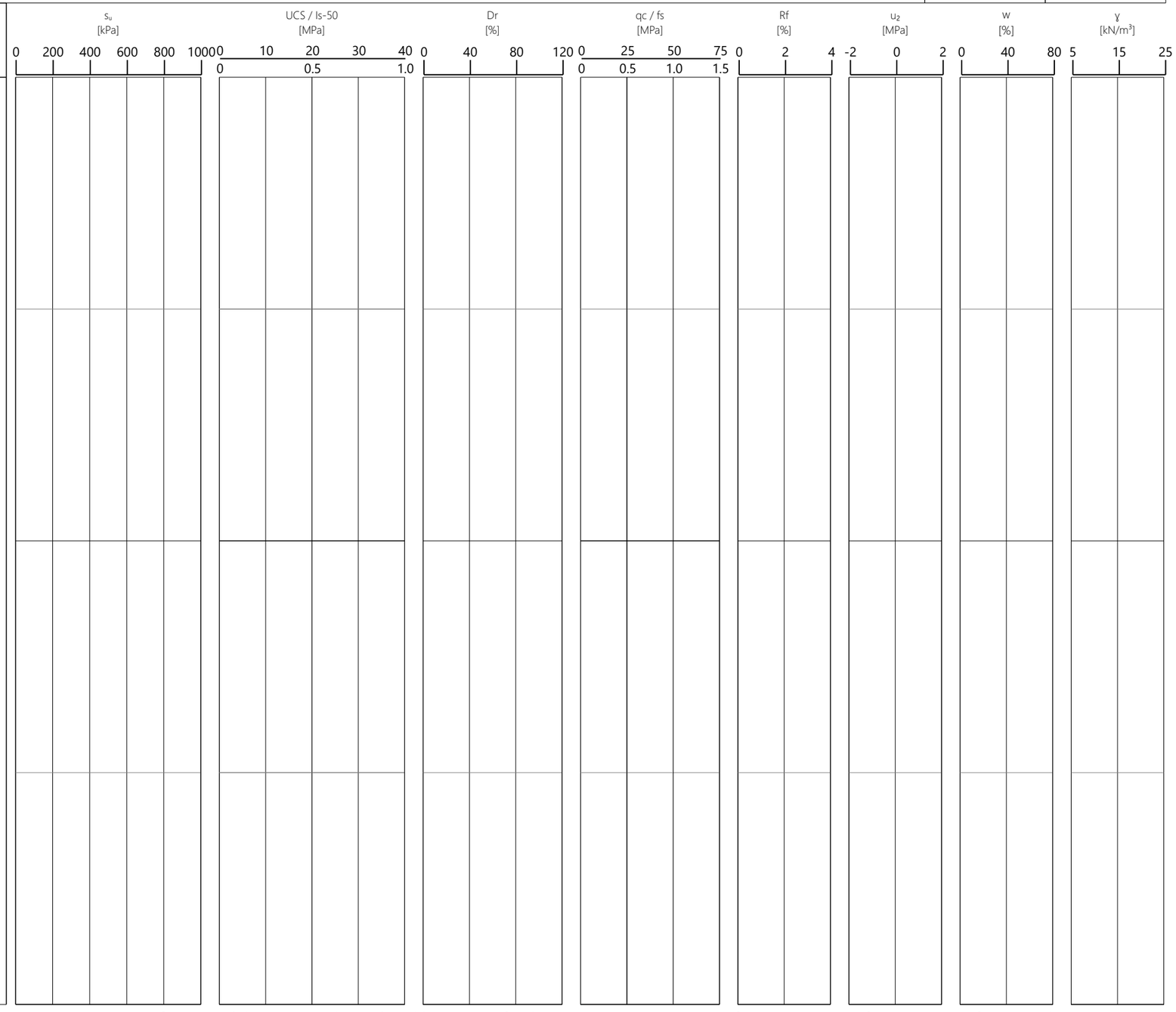
Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 1 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 1.00 m - Light brown to greyish brown SAND with occasional black specks (< 2mm) and occasional white shell fragments (<6mm). Very calcareous. Sand is medium and coarse. [HOLOCENE DEPOSITS]						
	-28.0							
1.0		1.00 m to 2.00 m - NO RECOVERY (OPEN HOLE DRILLING)						
	-29.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

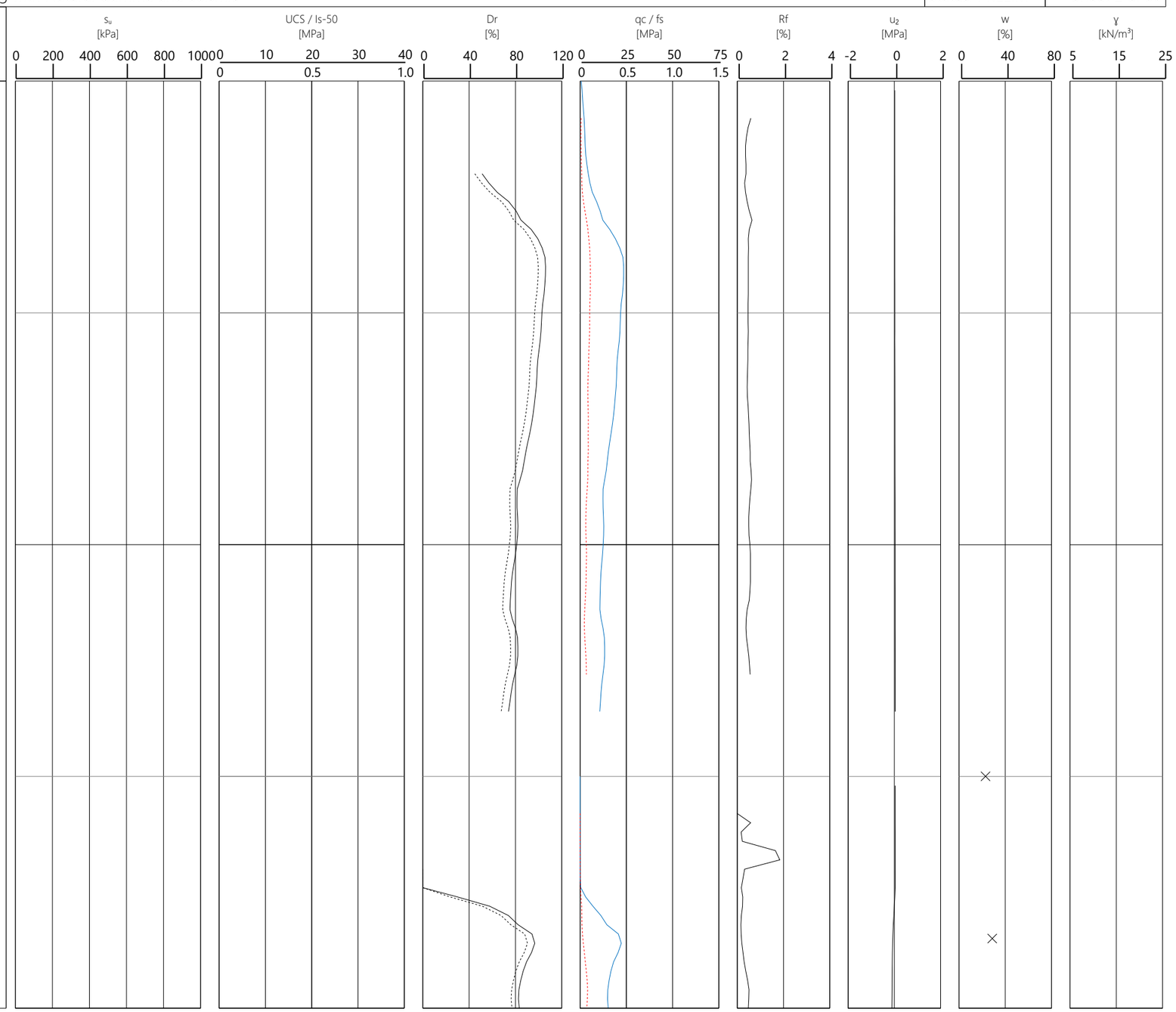
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
3.0	-30.0	2.00 m to 4.50 m - Dense to very dense light brown to greyish brown slightly silty SAND with rare white shell fragments (<2mm) and occasional dark grey lenses of organics (<2 x 5mm). Very calcareous. Sand is fine to coarse predominantly fine and medium. [HOLOCENE DEPOSITS]						
	-31.0	3.85m to 4.50m; material retained in push sample.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.280

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	32.0	2.00 m to 4.50 m - Dense to very dense light brown to greyish brown slightly silty SAND with rare white shell fragments (<2mm) and occasional dark grey lenses of organics (<2 x 5mm). Very calcareous. Sand is fine to coarse predominantly fine and medium. [HOLOCENE DEPOSITS]						
5.0		4.50 m to 5.50 m - Dense to very dense light brown to greyish brown SAND with rare black specks (< 2mm). Calcareous locally very calcareous. Sand is fine and medium predominantly medium. [HOLOCENE DEPOSITS]						
	33.0	5.20m to 5.50m; no recovery, sample slipped out of sample tube.						
		5.50 m to 6.50 m - Dense to very dense light brown to greyish brown slightly silty SAND with rare shell fragments (<2mm) and rare lenses of dark grey organics (<2 x 4mm). Very calcareous. Sand is fine to coarse predominantly fine and medium. [HOLOCENE DEPOSITS]						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

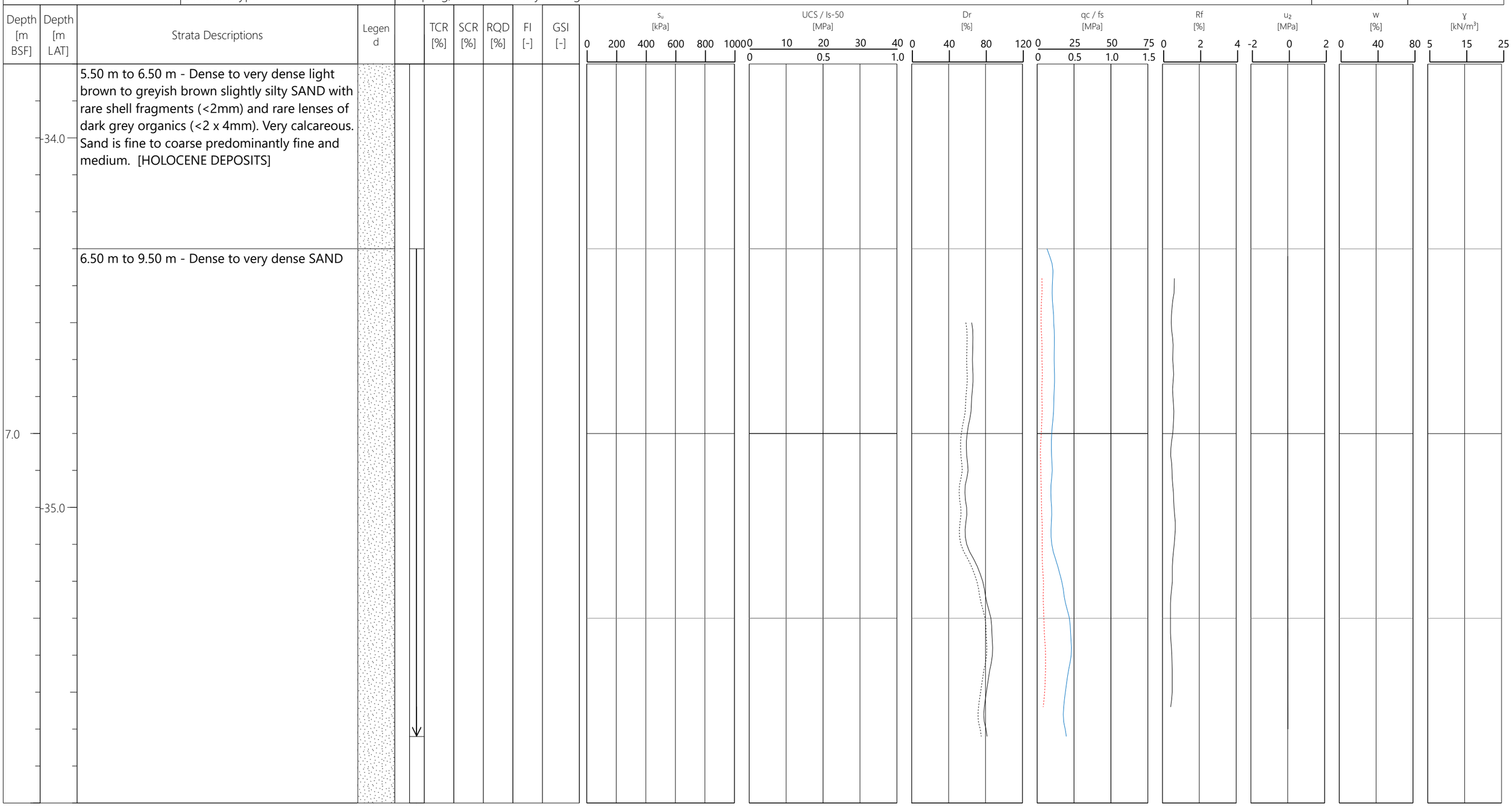
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	34.0	5.50 m to 6.50 m - Dense to very dense light brown to greyish brown slightly silty SAND with rare shell fragments (<2mm) and rare lenses of dark grey organics (<2 x 4mm). Very calcareous. Sand is fine to coarse predominantly fine and medium. [HOLOCENE DEPOSITS]						
7.0		6.50 m to 9.50 m - Dense to very dense SAND						
	35.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

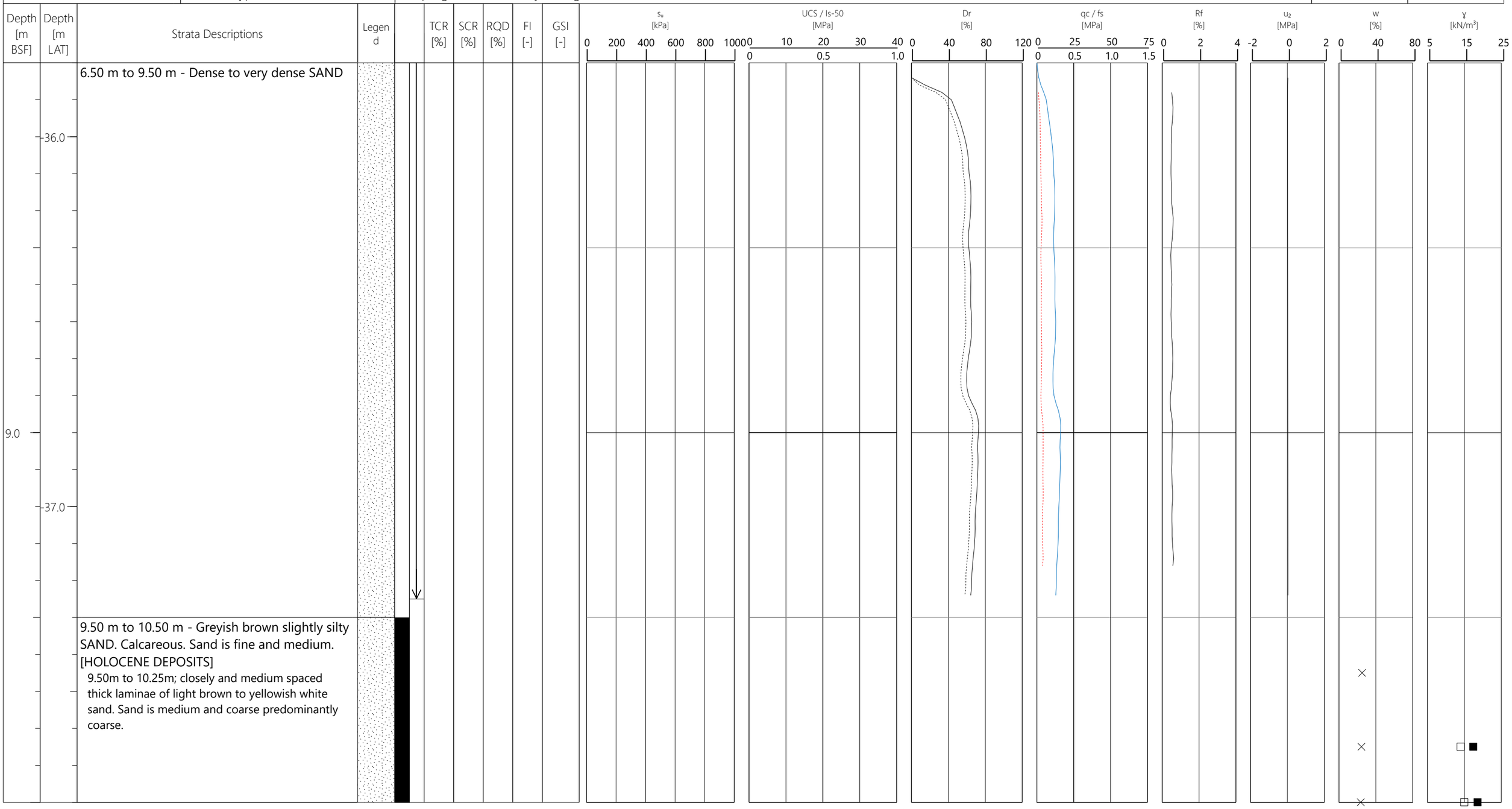
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.282

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		6.50 m to 9.50 m - Dense to very dense SAND						
9.0	36.0							
	37.0	9.50 m to 10.50 m - Greyish brown slightly silty SAND. Calcareous. Sand is fine and medium. [HOLOCENE DEPOSITS] 9.50m to 10.25m; closely and medium spaced thick laminae of light brown to yellowish white sand. Sand is medium and coarse predominantly coarse.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

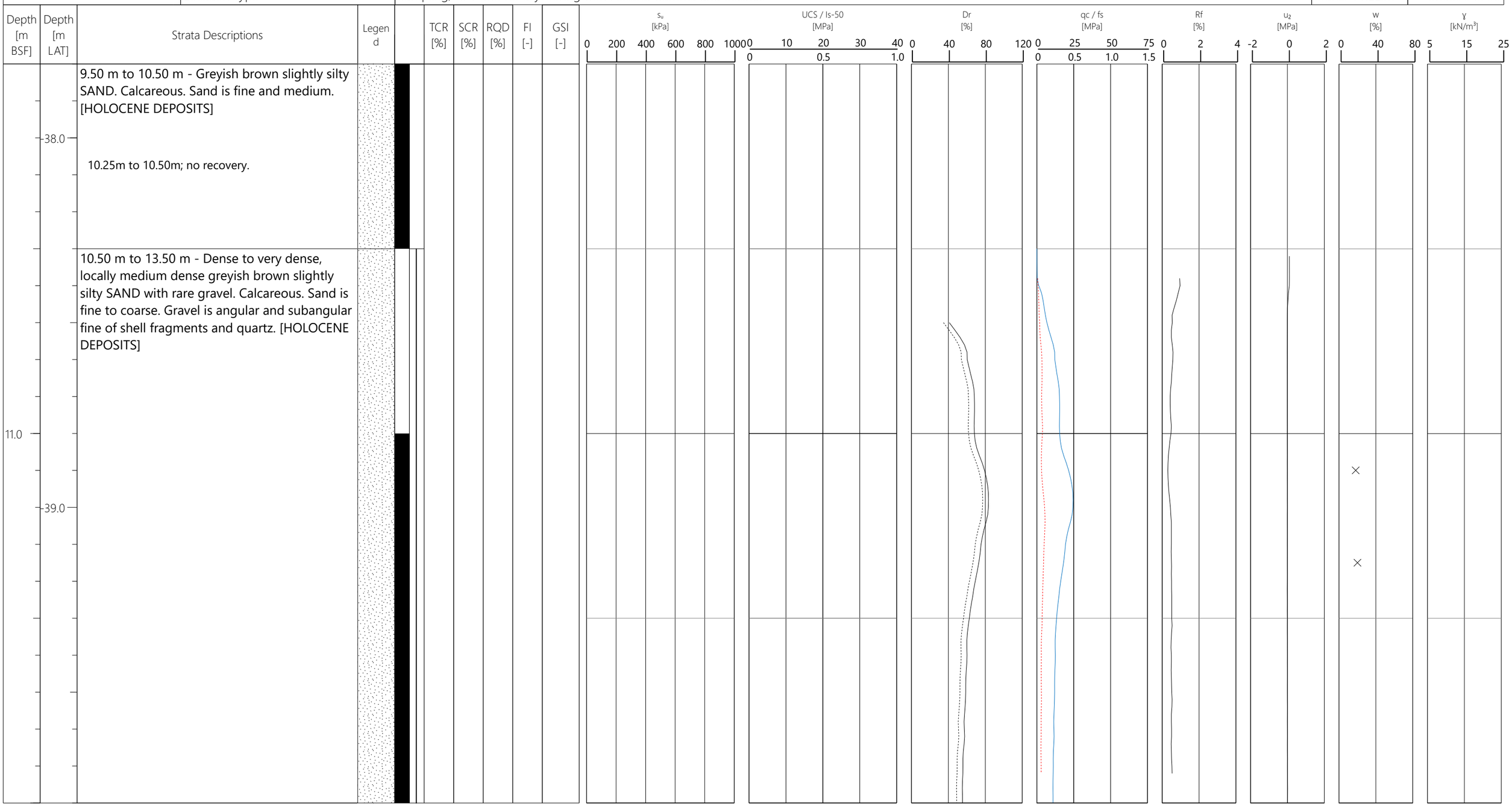
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		9.50 m to 10.50 m - Greyish brown slightly silty SAND. Calcareous. Sand is fine and medium. [HOLOCENE DEPOSITS]						
	-38.0	10.25m to 10.50m; no recovery.						
		10.50 m to 13.50 m - Dense to very dense, locally medium dense greyish brown slightly silty SAND with rare gravel. Calcareous. Sand is fine to coarse. Gravel is angular and subangular fine of shell fragments and quartz. [HOLOCENE DEPOSITS]						
11.0								
	-39.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

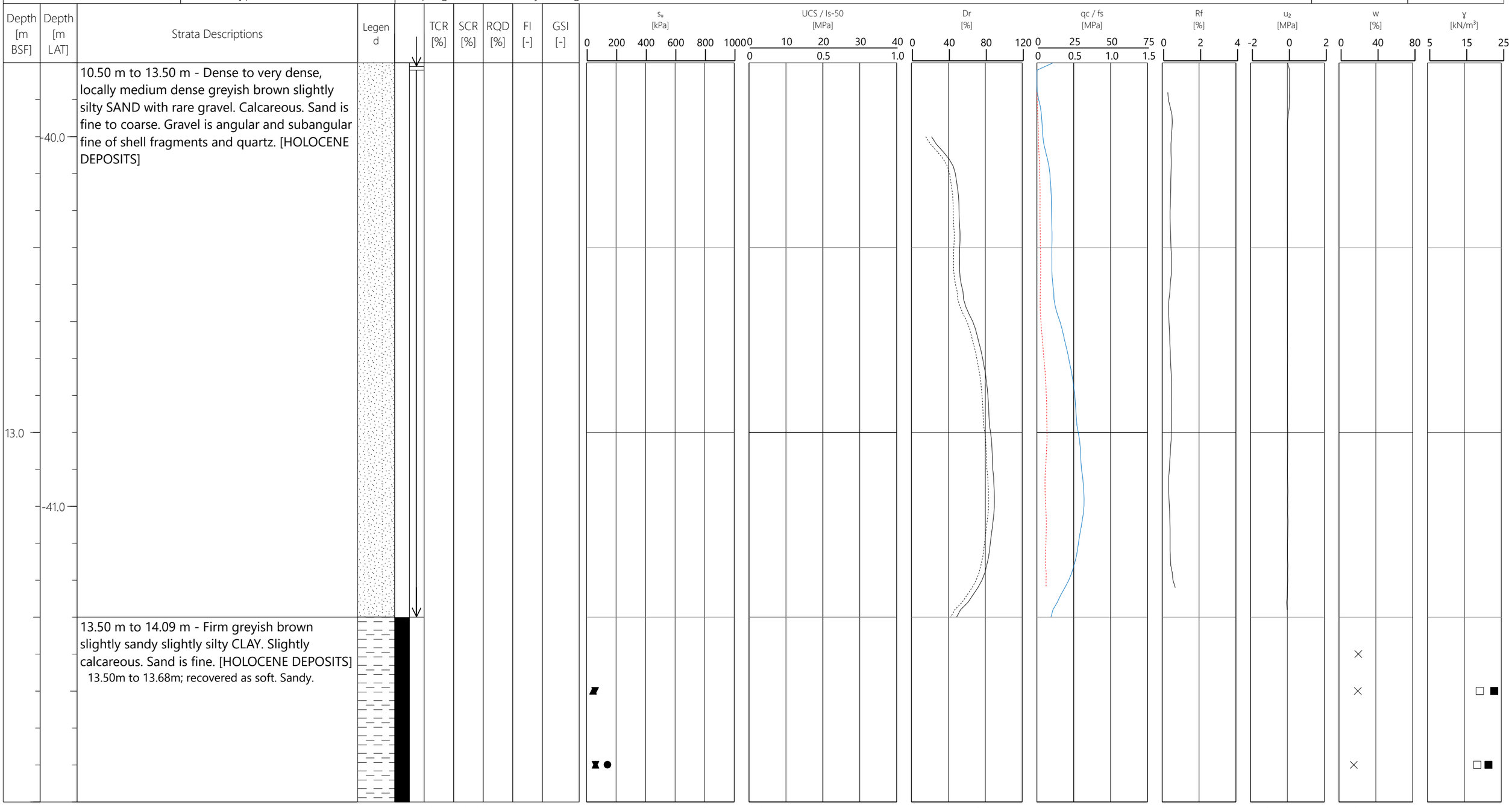
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.284

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-40.0	10.50 m to 13.50 m - Dense to very dense, locally medium dense greyish brown slightly silty SAND with rare gravel. Calcareous. Sand is fine to coarse. Gravel is angular and subangular fine of shell fragments and quartz. [HOLOCENE DEPOSITS]						
13.0	-41.0	13.50 m to 14.09 m - Firm greyish brown slightly sandy slightly silty CLAY. Slightly calcareous. Sand is fine. [HOLOCENE DEPOSITS] 13.50m to 13.68m; recovered as soft. Sandy.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

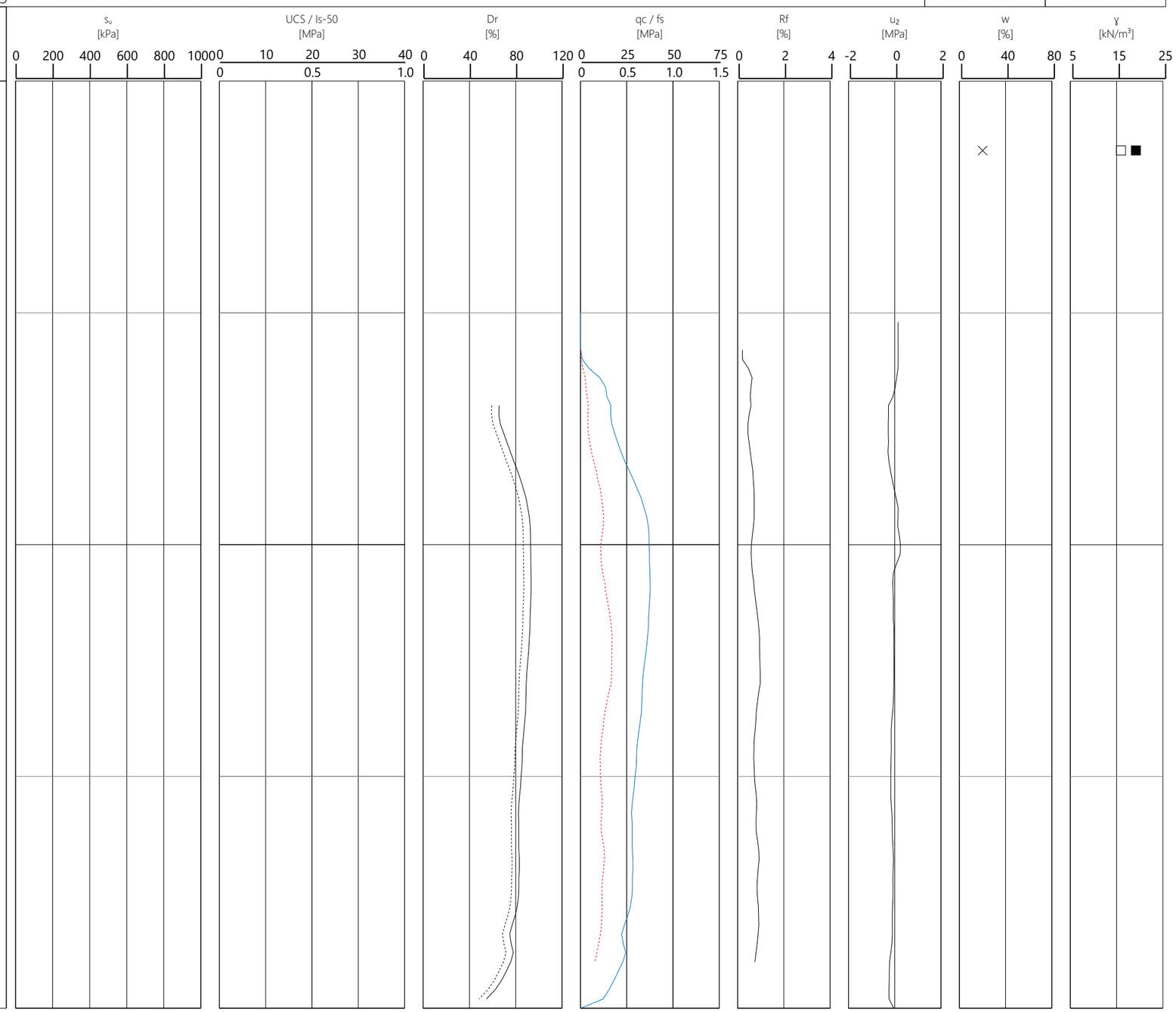
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-42.0	13.50 m to 14.09 m - Firm greyish brown slightly sandy slightly silty CLAY. Slightly calcareous. Sand is fine. [HOLOCENE DEPOSITS]/ 14.09 m to 16.50 m - Dense to very dense greyish brown slightly clayey SAND with rare gravel. Very calcarerous. Sand is fine and medium predominantly fine. Gravel is angular and subangular fine of shell fragments and quartz. [HOLOCENE DEPOSITS]						
15.0	-43.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

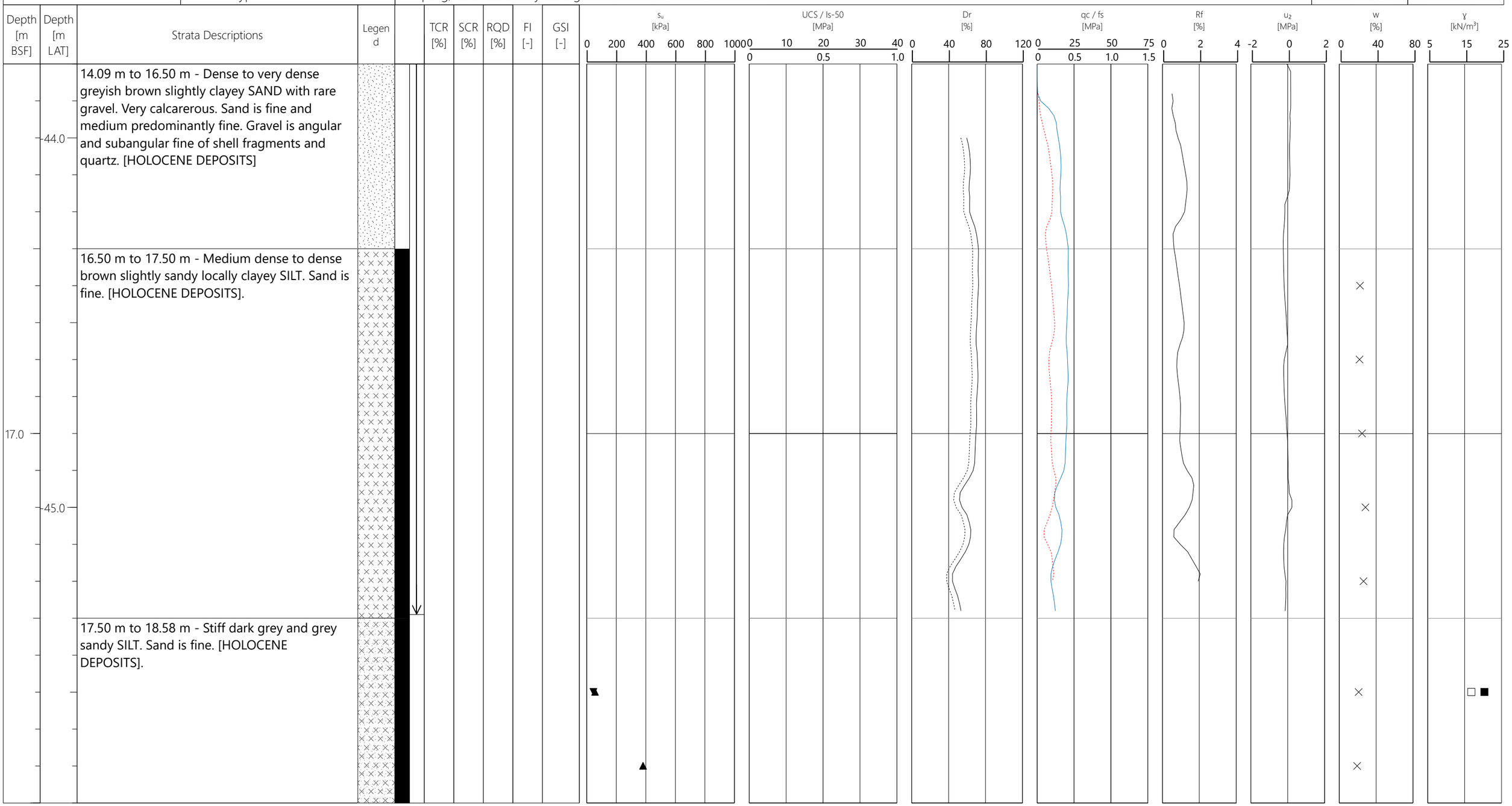
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-44.0	14.09 m to 16.50 m - Dense to very dense greyish brown slightly clayey SAND with rare gravel. Very calcarerous. Sand is fine and medium predominantly fine. Gravel is angular and subangular fine of shell fragments and quartz. [HOLOCENE DEPOSITS]						
17.0		16.50 m to 17.50 m - Medium dense to dense brown slightly sandy locally clayey SILT. Sand is fine. [HOLOCENE DEPOSITS].						
	-45.0	17.50 m to 18.58 m - Stiff dark grey and grey sandy SILT. Sand is fine. [HOLOCENE DEPOSITS].						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

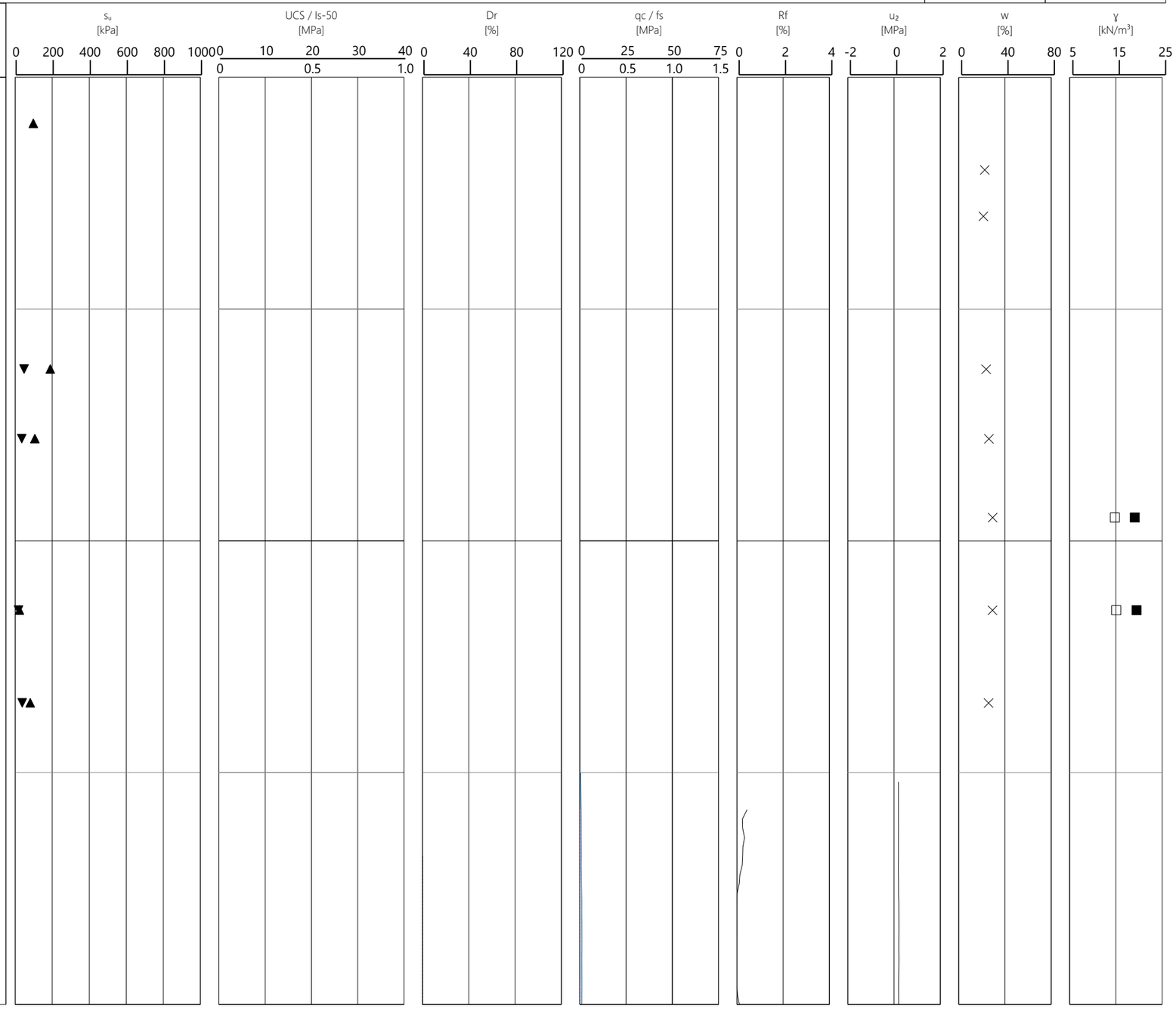
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.287

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		17.50 m to 18.58 m - Stiff dark grey and grey sandy SILT. Sand is fine. [HOLOCENE DEPOSITS].						
	46.0							
		18.50m to 18.58m; thin bed of brown very silty sand. Sand is fine and medium predominantly fine.						
		18.58 m to 20.15 m - Stiff brown sandy SILT. Sand is fine and medium predominantly fine. [HOLOCENE DEPOSITS].						
19.0								
	47.0							
		At 19.50m; CPT09 did not latch correctly, data may not be reliable and should be used with caution.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

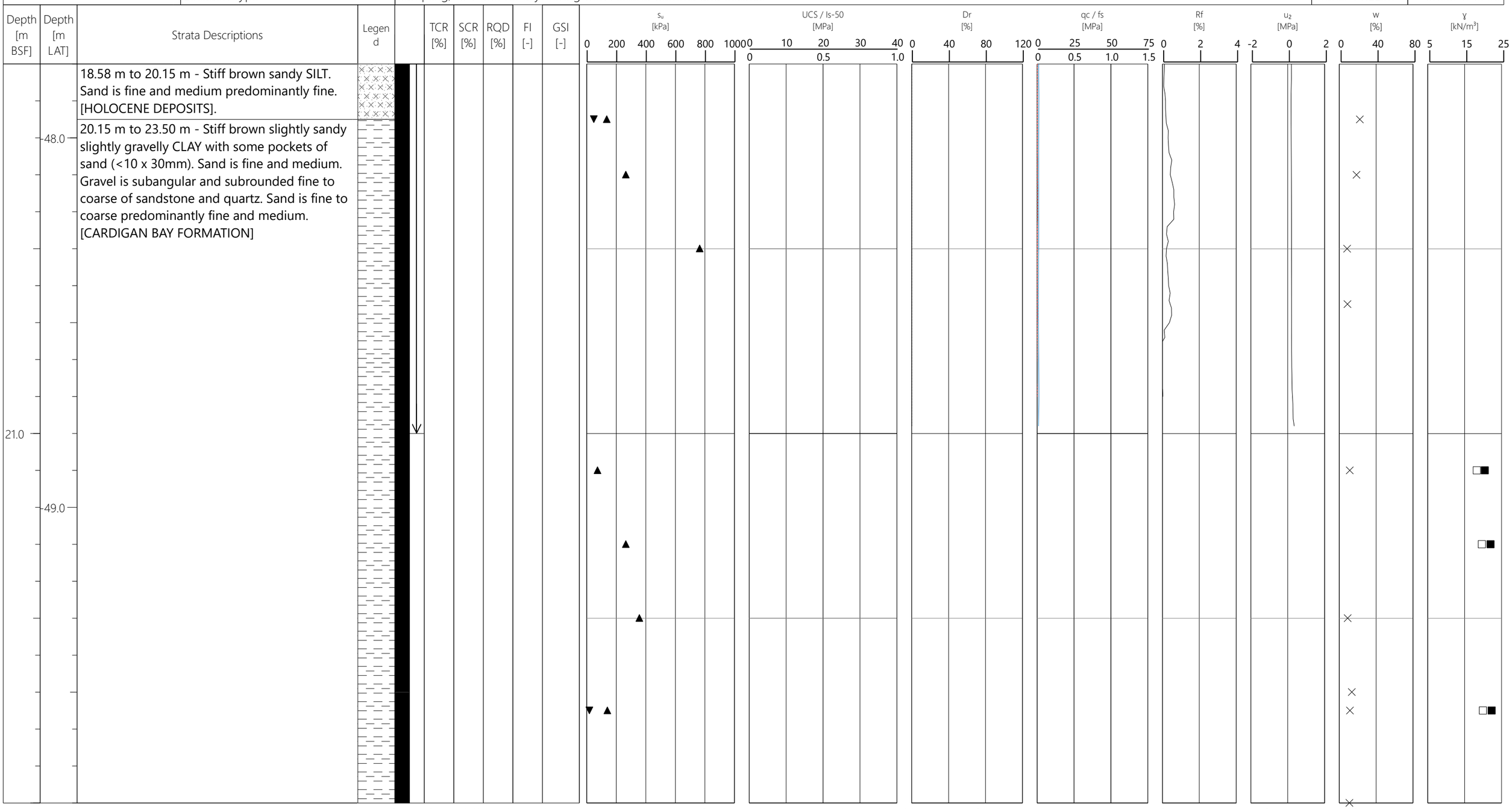
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 11 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		18.58 m to 20.15 m - Stiff brown sandy SILT. Sand is fine and medium predominantly fine. [HOLOCENE DEPOSITS].						
	-48.0	20.15 m to 23.50 m - Stiff brown slightly sandy slightly gravelly CLAY with some pockets of sand (<10 x 30mm). Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of sandstone and quartz. Sand is fine to coarse predominantly fine and medium. [CARDIGAN BAY FORMATION]						
	21.0							
	-49.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.289

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 12 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-50.0	20.15 m to 23.50 m - Stiff brown slightly sandy slightly gravelly CLAY with some pockets of sand (<10 x 30mm). Sand is fine and medium. Gravel is subangular and subrounded fine to coarse of sandstone and quartz. Sand is fine to coarse predominantly fine and medium. [CARDIGAN BAY FORMATION]						
		22.82m to 22.85m; brownish grey sandy gravel. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, dark igneous and sandstone.						
23.0	-51.0	23.50 m to 27.00 m - Very stiff brown slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of sandstone, quartz and dark igneous. [CARDIGAN BAY FORMATION]						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.290

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	52.0	23.50 m to 27.00 m - Very stiff brown slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of sandstone, quartz and dark igneous. [CARDIGAN BAY FORMATION]		100	0	0		
25.0	53.0			100	0	0		

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

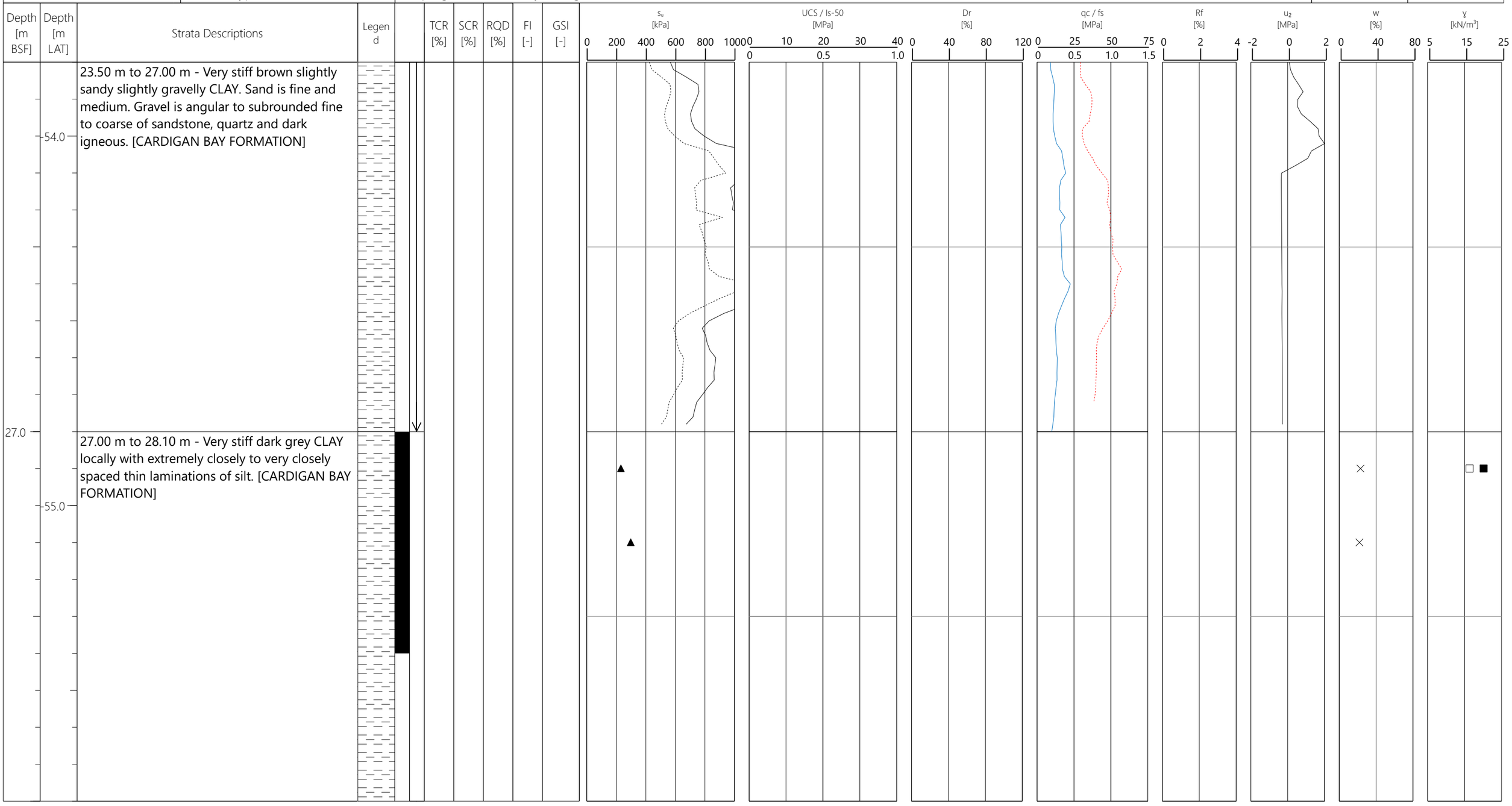
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		23.50 m to 27.00 m - Very stiff brown slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of sandstone, quartz and dark igneous. [CARDIGAN BAY FORMATION]						
	-54.0							
27.0		27.00 m to 28.10 m - Very stiff dark grey CLAY locally with extremely closely to very closely spaced thin laminations of silt. [CARDIGAN BAY FORMATION]						
	-55.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

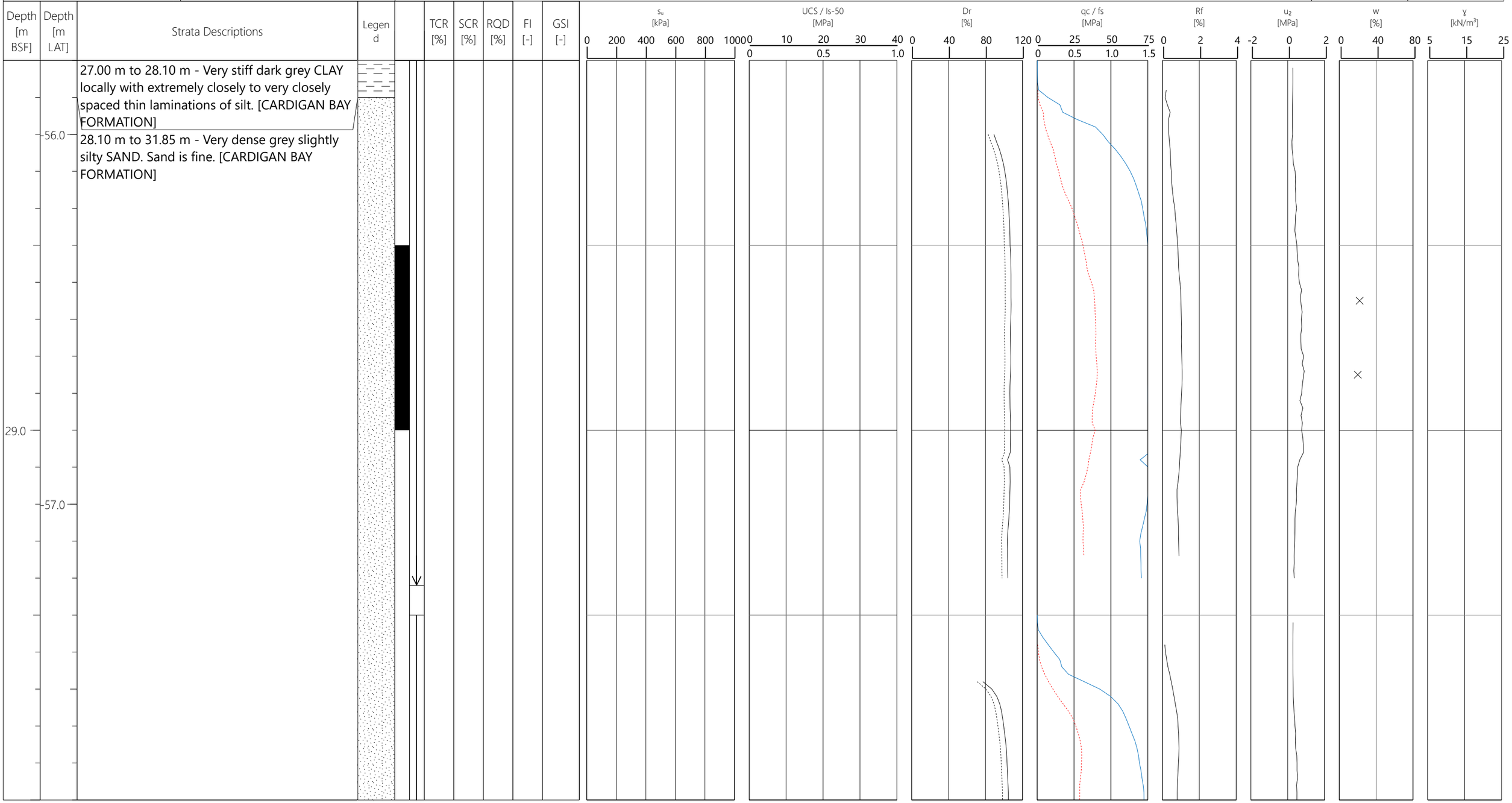
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 30

BH26

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		27.00 m to 28.10 m - Very stiff dark grey CLAY locally with extremely closely to very closely spaced thin laminations of silt. [CARDIGAN BAY FORMATION]						
56.0		28.10 m to 31.85 m - Very dense grey slightly silty SAND. Sand is fine. [CARDIGAN BAY FORMATION]						
29.0								
57.0								



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

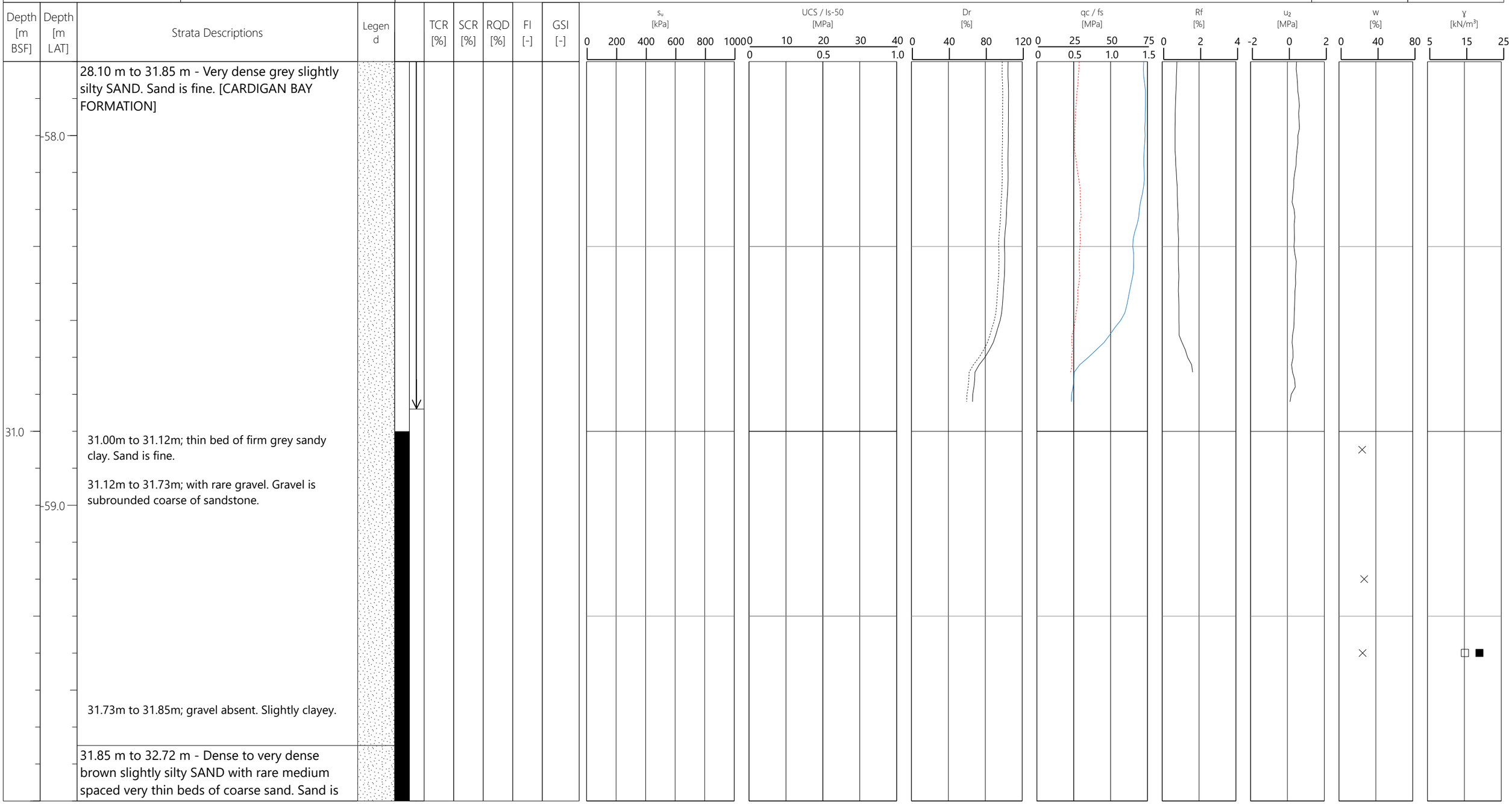
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 16 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		28.10 m to 31.85 m - Very dense grey slightly silty SAND. Sand is fine. [CARDIGAN BAY FORMATION]						
	58.0							
31.0		31.00m to 31.12m; thin bed of firm grey sandy clay. Sand is fine.						
		31.12m to 31.73m; with rare gravel. Gravel is subrounded coarse of sandstone.						
	59.0							
		31.73m to 31.85m; gravel absent. Slightly clayey.						
		31.85 m to 32.72 m - Dense to very dense brown slightly silty SAND with rare medium spaced very thin beds of coarse sand. Sand is						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

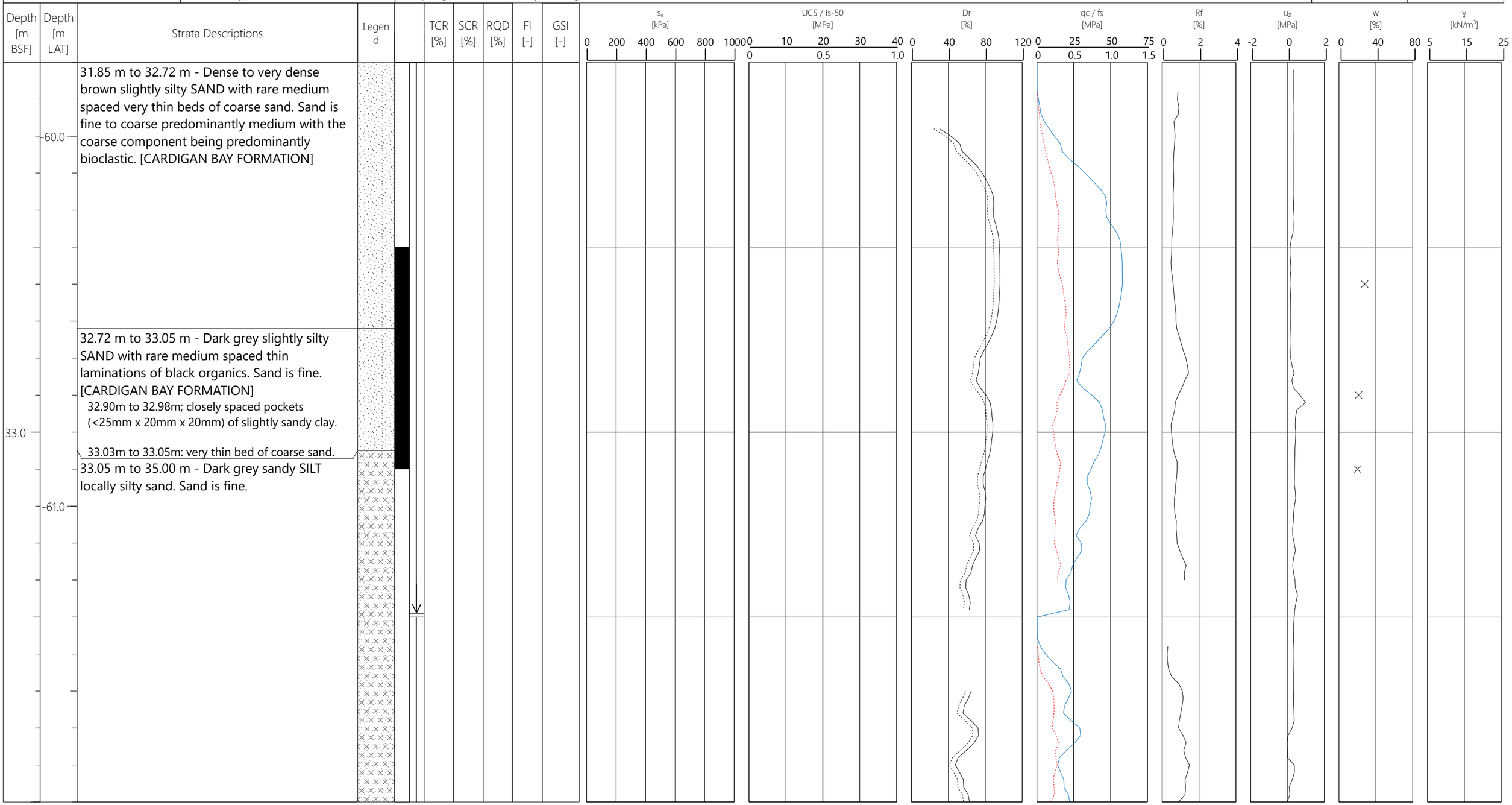
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.294

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 17 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-60.0	31.85 m to 32.72 m - Dense to very dense brown slightly silty SAND with rare medium spaced very thin beds of coarse sand. Sand is fine to coarse predominantly medium with the coarse component being predominantly bioclastic. [CARDIGAN BAY FORMATION]						
33.0		32.72 m to 33.05 m - Dark grey slightly silty SAND with rare medium spaced thin laminations of black organics. Sand is fine. [CARDIGAN BAY FORMATION] 32.90m to 32.98m; closely spaced pockets (<25mm x 20mm x 20mm) of slightly sandy clay. 33.03m to 33.05m: very thin bed of coarse sand.						
	-61.0	33.05 m to 35.00 m - Dark grey sandy SILT locally silty sand. Sand is fine.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

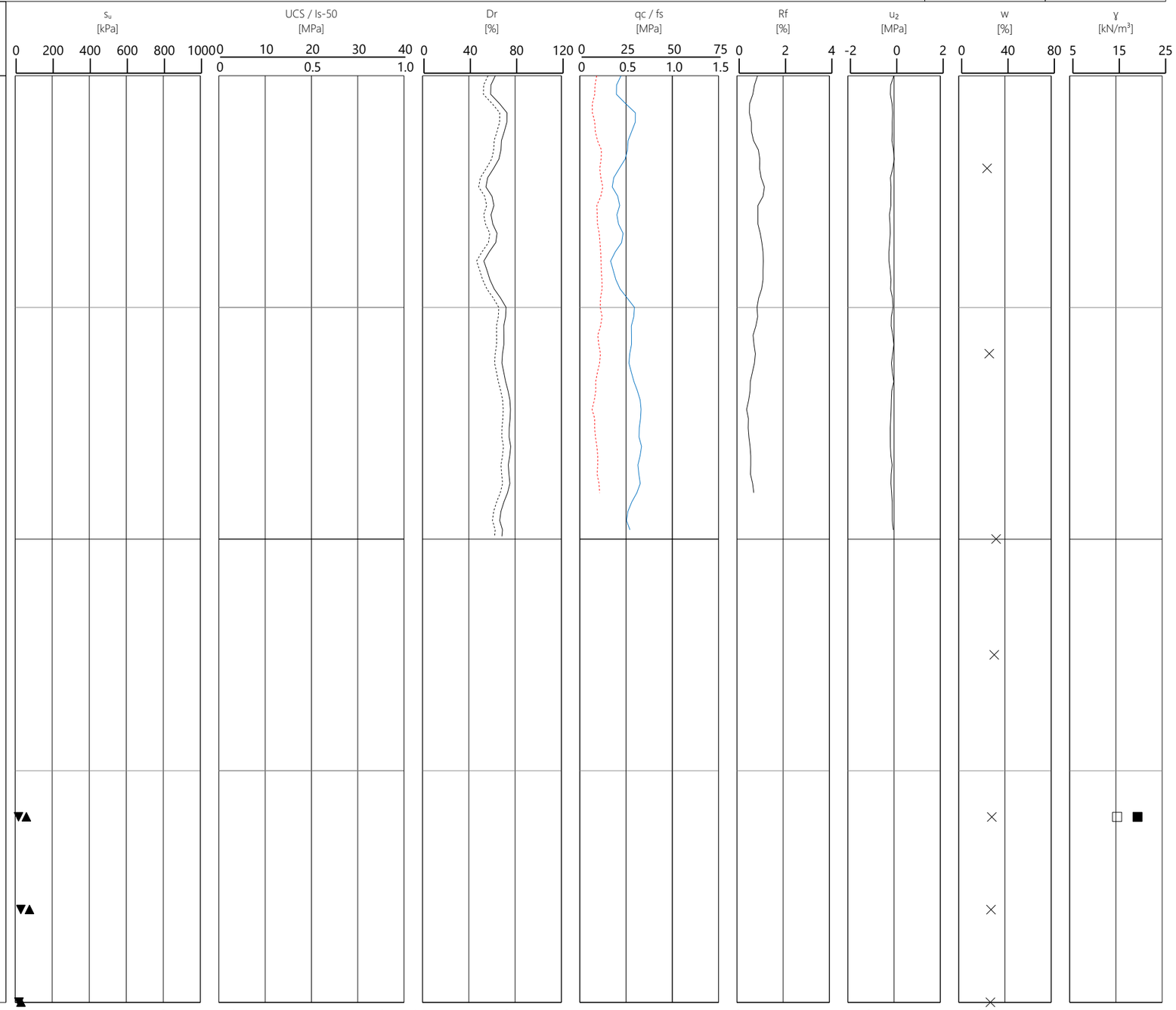
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 18 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	62.0	33.05 m to 35.00 m - Dark grey sandy SILT locally silty sand. Sand is fine. 34.35m to 34.55m; extremely closely spaced black specks (<2mm). 34.42m to 34.56m; very closely spaced pockets (<40mm x 30mm x 25mm) of clay.						
35.0	63.0	35.00 m to 35.25 m - Brown very silty SAND. Sand is fine and medium predominantly fine. [CARDIGAN BAY FORMATION].						
		35.25 m to 36.00 m - Firm thinly laminated brown slightly sandy CLAY. Sand is fine and medium. Laminations are very closely and closely spaced with silt and sand. [CARDIGAN BAY FORMATION]. 35.90m to 36.00m; assumed zone of core loss.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

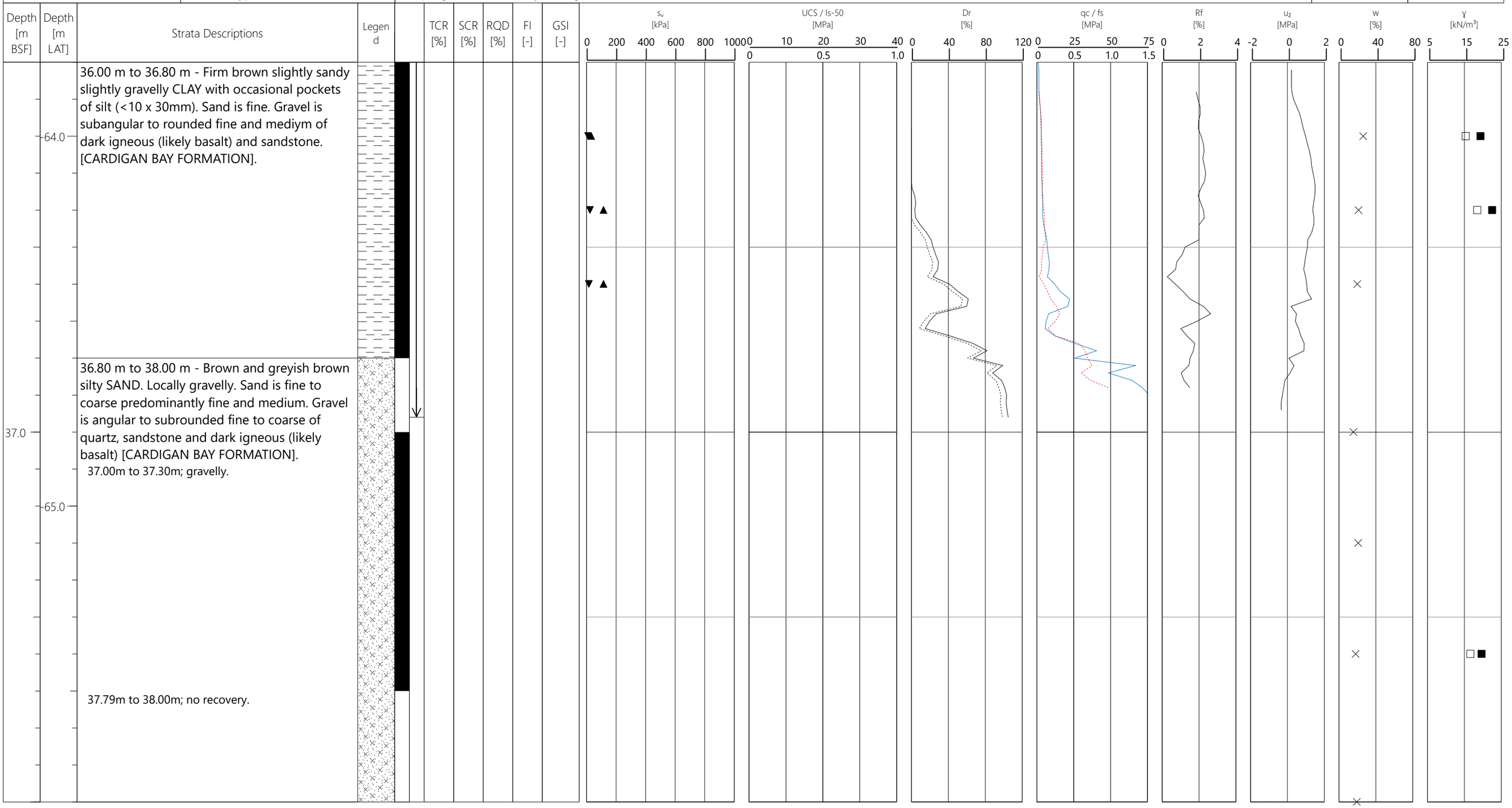
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 19 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	64.0	36.00 m to 36.80 m - Firm brown slightly sandy slightly gravelly CLAY with occasional pockets of silt (<10 x 30mm). Sand is fine. Gravel is subangular to rounded fine and mediym of dark igneous (likely basalt) and sandstone. [CARDIGAN BAY FORMATION].						
	37.0	36.80 m to 38.00 m - Brown and greyish brown silty SAND. Locally gravelly. Sand is fine to coarse predominantly fine and medium. Gravel is angular to subrounded fine to coarse of quartz, sandstone and dark igneous (likely basalt) [CARDIGAN BAY FORMATION].						
		37.00m to 37.30m; gravelly.						
	65.0	37.79m to 38.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

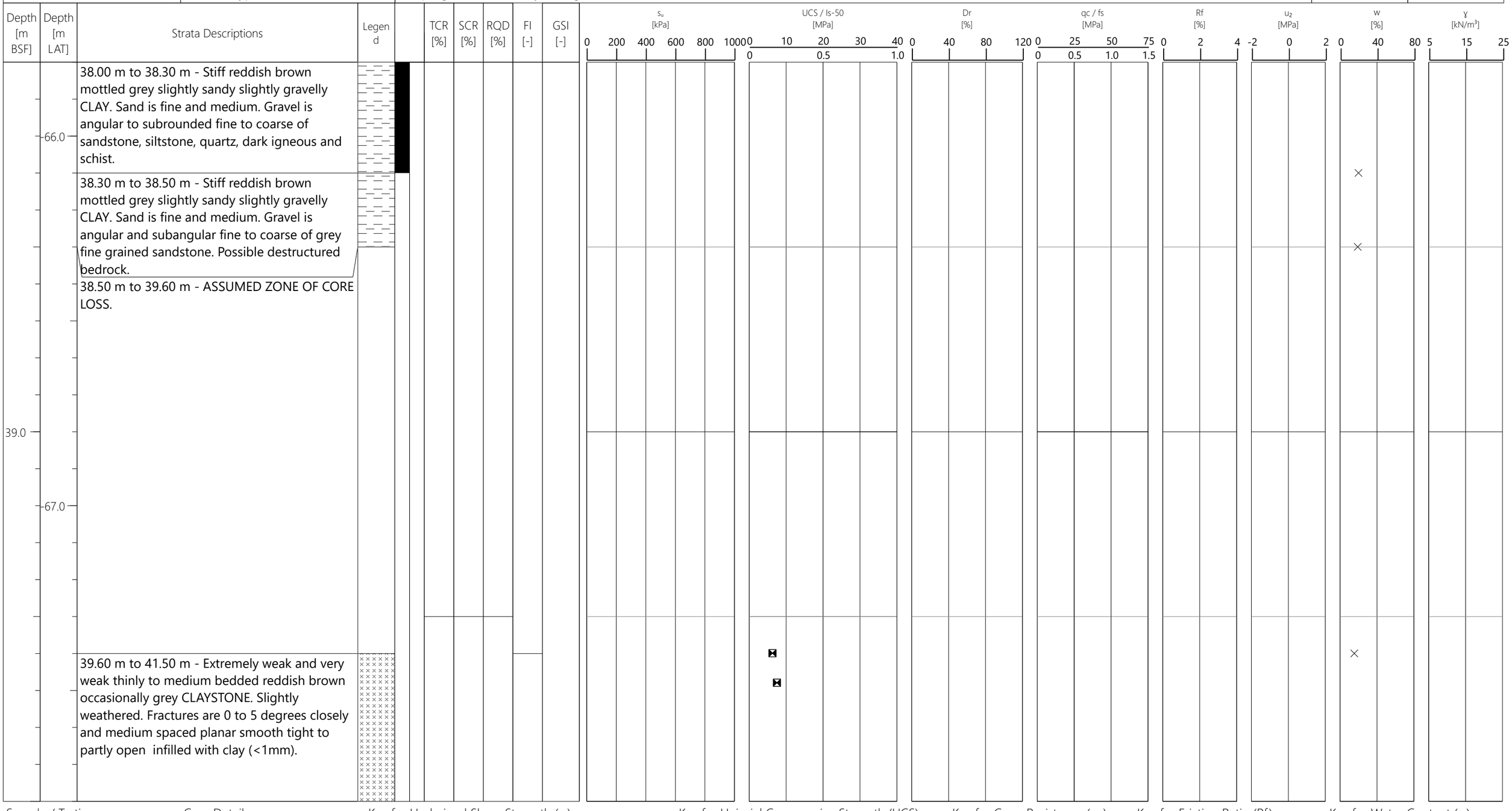
Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.297

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642			Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum	UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 20 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	66.0	38.00 m to 38.30 m - Stiff reddish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, quartz, dark igneous and schist.						
		38.30 m to 38.50 m - Stiff reddish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine and medium. Gravel is angular and subangular fine to coarse of grey fine grained sandstone. Possible destructured bedrock.						
39.0		38.50 m to 39.60 m - ASSUMED ZONE OF CORE LOSS.						
	67.0	39.60 m to 41.50 m - Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE. Slightly weathered. Fractures are 0 to 5 degrees closely and medium spaced planar smooth tight to partly open infilled with clay (<1mm).						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

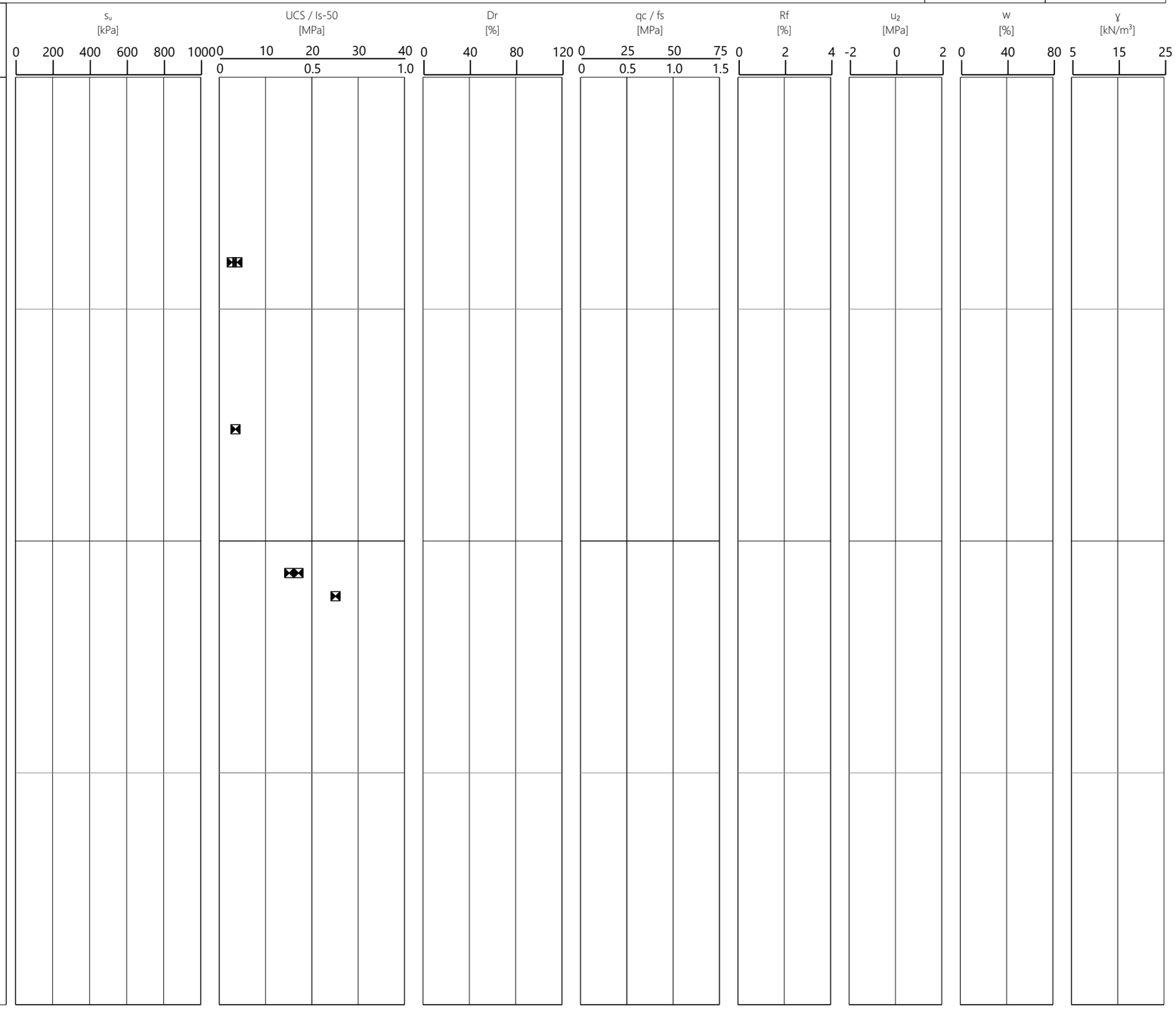
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 21 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	68.0	39.60 m to 41.50 m - Extremely weak and very weak thinly to medium bedded reddish brown occasionally grey CLAYSTONE. Slightly weathered. Fractures are 0 to 5 degrees closely and medium spaced planar smooth tight to partly open infilled with clay (<1mm).		100	90	90	4	
41.0	69.0	41.40m to 41.50m; assumed zone of core loss.		100	100	100	5	
		41.50 m to 42.80 m - Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE with some grey reduction spots (<5 x 15mm). Slightly weathered. Fractures are 0 to 5 degrees closely to moderately widely spaced planar smooth open to moderately wide infilled with clay. Joint is inclined 75 degrees undulating smooth tight and moderately wide infilled with clay.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

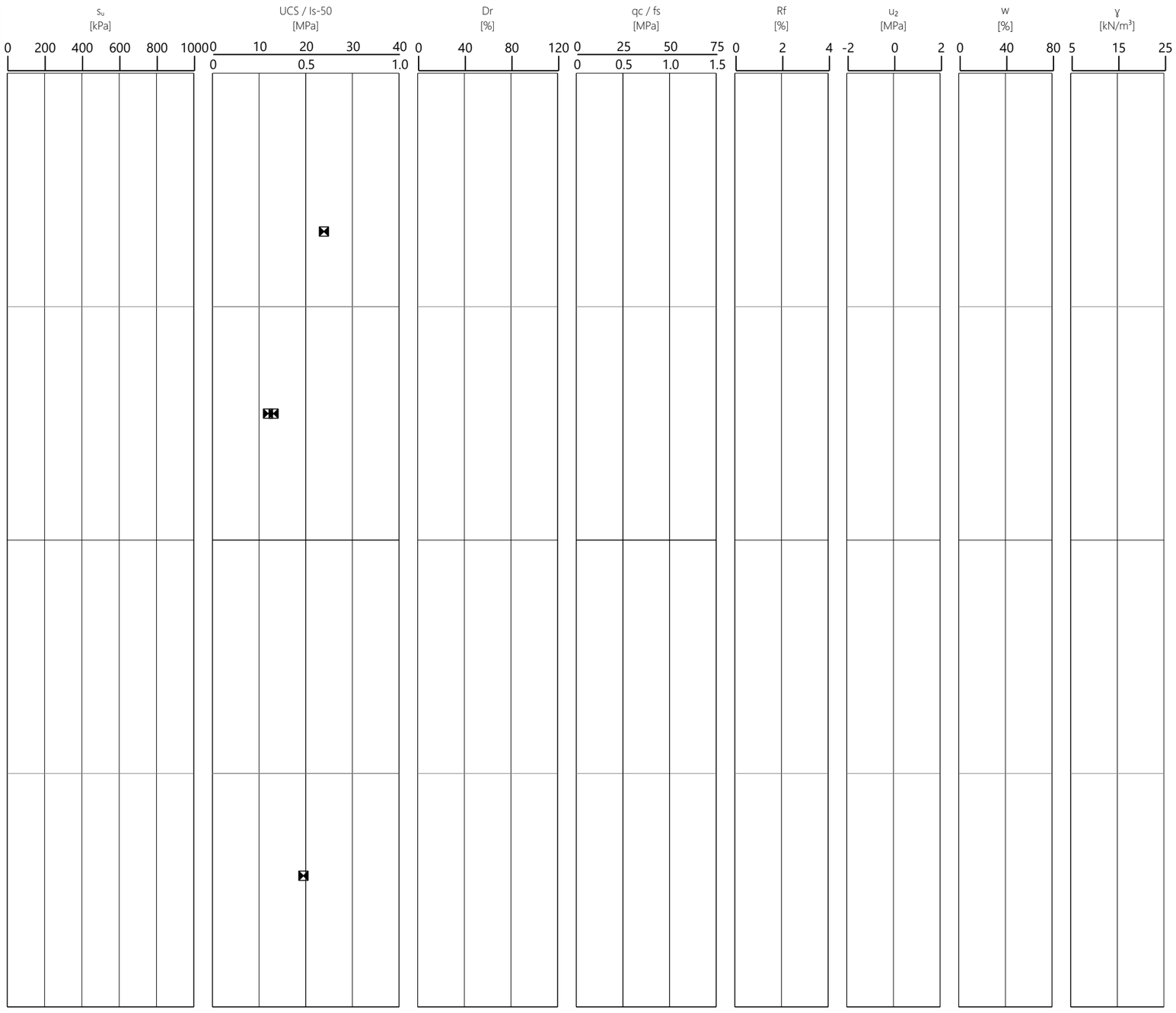
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 22 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-70.0	41.50 m to 42.80 m - Very weak and weak thickly laminated to thinly bedded dark reddish brown SILTSTONE with some grey reduction spots (<5 x 15mm). Slightly weathered. Fractures are 0 to 5 degrees closely to moderately widely spaced planar smooth open to moderately wide infilled with clay. Joint is inclined 75 degrees undulating smooth tight and moderately wide infilled with clay.		100	100	100	4	
43.0	-71.0	42.80 m to 45.80 m - Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE with rare grey reduction spots (< 24mm x 20mm). Partially weathered. Fractures are 0 to 5 degrees locally 10 degrees closely and medium spaced planar locally undulating smooth partially open and open locally very tight and tight with clay infill (< 20mm). 43.00m to 44.30m; increase in fine sand component. At 43.16m: horizontal 5 degrees annealed fracture. 43.20m to 43.69m: horizontal 0 to 5 degrees very closely and closely spaced incipient fractures.		100	97	97	3	



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

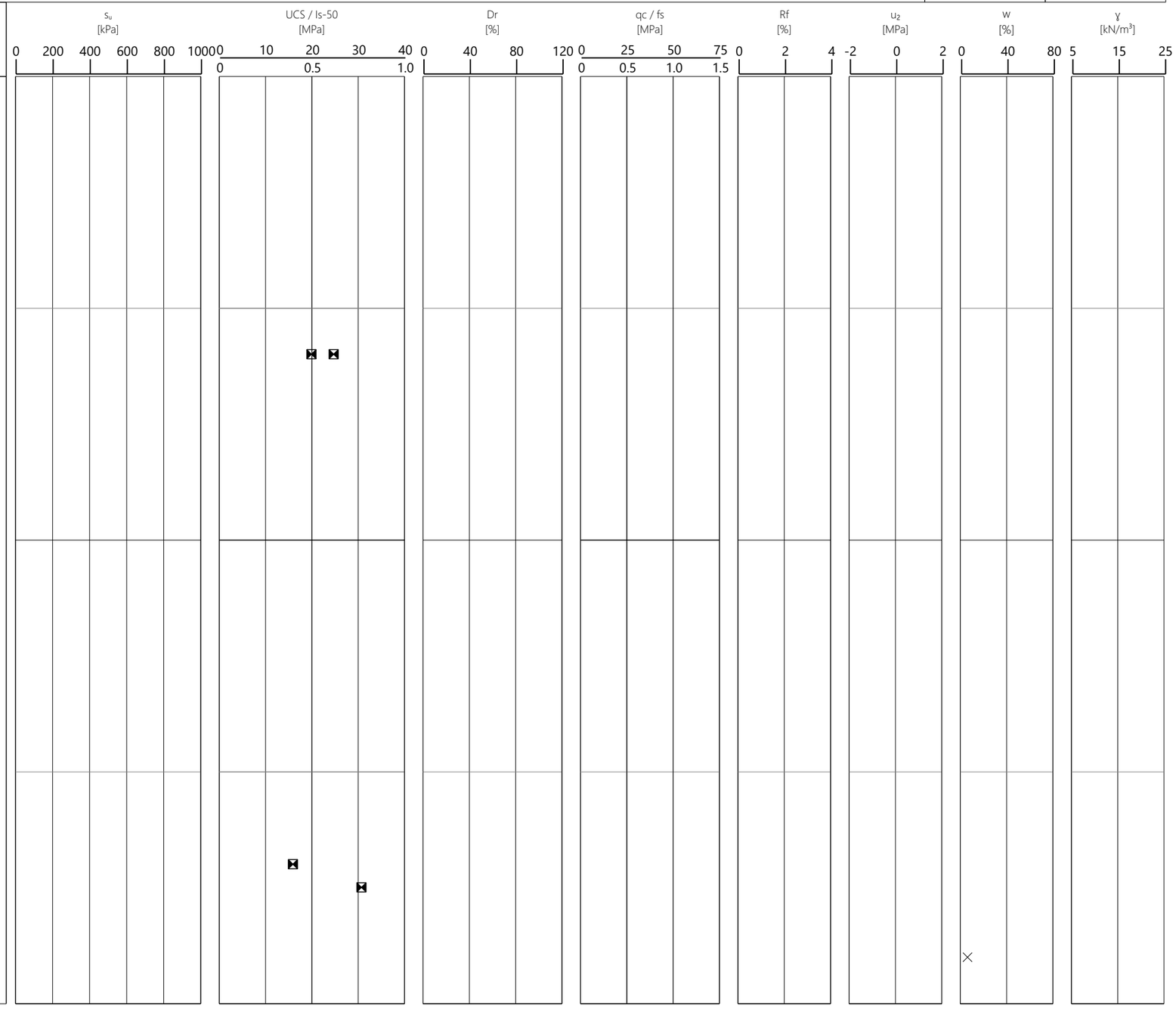
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 23 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	72.0	42.80 m to 45.80 m - Very weak thinly laminated to thinly bedded dark reddish grey SILTSTONE with rare grey reduction spots (< 24mm x 20mm). Partially weathered. Fractures are 0 to 5 degrees locally 10 degrees closely and medium spaced planar locally undulating smooth partially open and open locally very tight and tight with clay infill (< 20mm). 44.05m to 44.55m: subvertical 85 degrees discontinuous calcite vein (< 2mm).						
45.0				100	100	98	5	
	73.0	45.64m to 45.78m: frequent calcite inclusions (< 4mm x 4mm). 45.80 m to 47.12 m - Very weak thinly and thickly laminated dark reddish grey SILTSTONE with frequent calcite veins. Partially weathered locally distinctly weathered. Fractures are 0 to 5						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

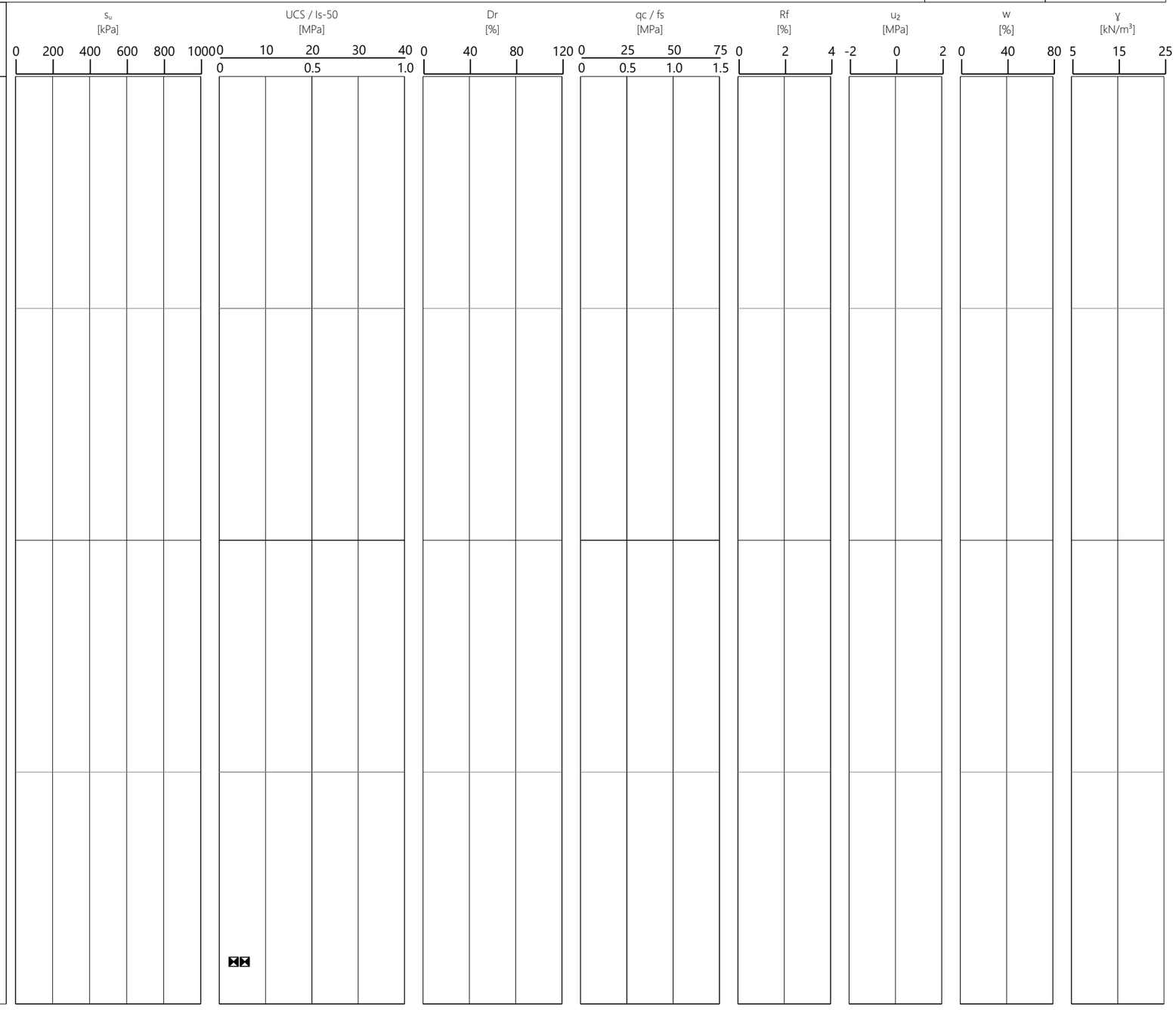
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 24 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-74.0	45.80 m to 47.12 m - Very weak thinly and thickly laminated dark reddish grey SILTSTONE with frequent calcite veins. Partially weathered locally distinctly weathered. Fractures are 0 to 5 degrees closely and medium spaced undulating locally planar very tight to wide with clay infill (< 10mm). Fractures are inclined 15 degrees widely spaced smooth very tight clean. 45.90m to 45.98m: very thin bed of very stiff dark reddish brown silt. Distinctly weathered siltstone. 46.38m to 46.65m: frequent calcite nodules (< 10mm). 46.69m to 46.73m: very thin bed of medium strong thinly laminated and cross laminated light red fine grained sandstone. 46.74m to 46.76m: inclined 10 degree annealed fracture.		100	95	81	3	
	-75.0	47.12 m to 48.34 m - Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE with occasional very closely and closely spaced very thin beds of siltstone. Partially weathered. Fractures are 0 to 5 degrees very closely to medium spaced planar locally undulating smooth locally rough partially open with clay infill (< 1mm). Fractures are 80 degrees undulating rough tight clean.					9	



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

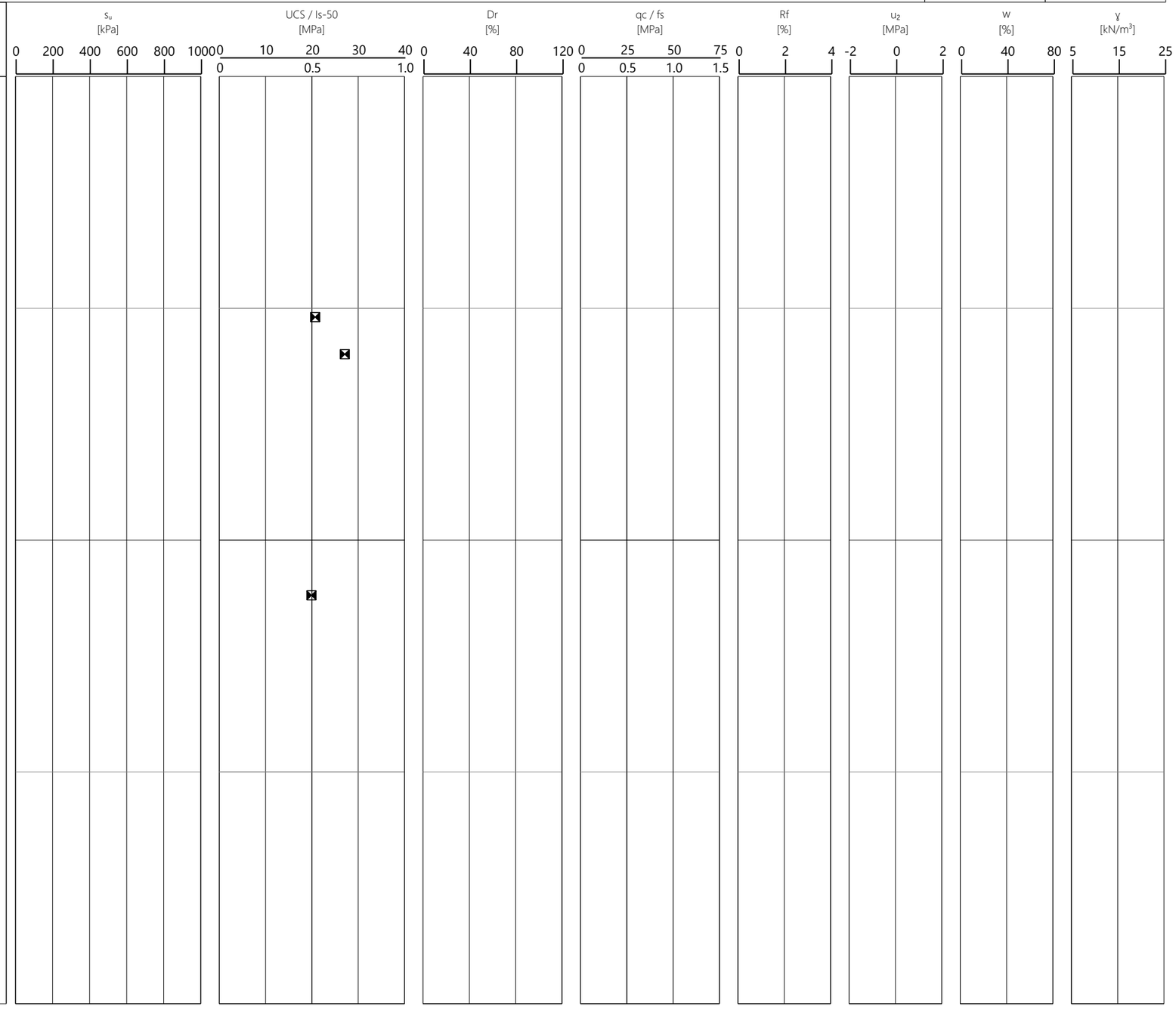
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 25 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	76.0	47.12 m to 48.34 m - Strong thinly cross laminated light blueish grey fine grained calcareous SANDSTONE with occasional very closely and closely spaced very thin beds of siltstone. Partially weathered. Fractures are 0 to 5 degrees very closely to medium spaced planar locally undulating smooth locally rough partially open with clay infill (< 1mm). Fractures are 80 degrees undulating rough tight clean.		93	93	71		
		48.34 m to 49.77 m - Weak thinly cross laminated dark reddish grey locally very thinly interbedded greenish grey SILTSTONE locally with frequent calcite nodules (< 12mm x 6mm). Partially weathered. Fractures are 0 to 5 degrees medium spaced planar partially open with clay infill (< 1mm). Fractures are inclined 15 degrees extremely closely spaced planar smooth tight clean.						
		48.70m to 48.80m: assumed zone of core loss.						
49.0							5	
	77.0	49.30m to 49.77m: frequent calcite nodules (< 12mm x 6mm).		100	100			
		49.55m to 49.56m: lithified silt infill determining 2 possible adjacent bedding fractures.				99		
		49.77 m to 51.71 m - Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE with medium spaced very thin to medium beds of dark reddish grey						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

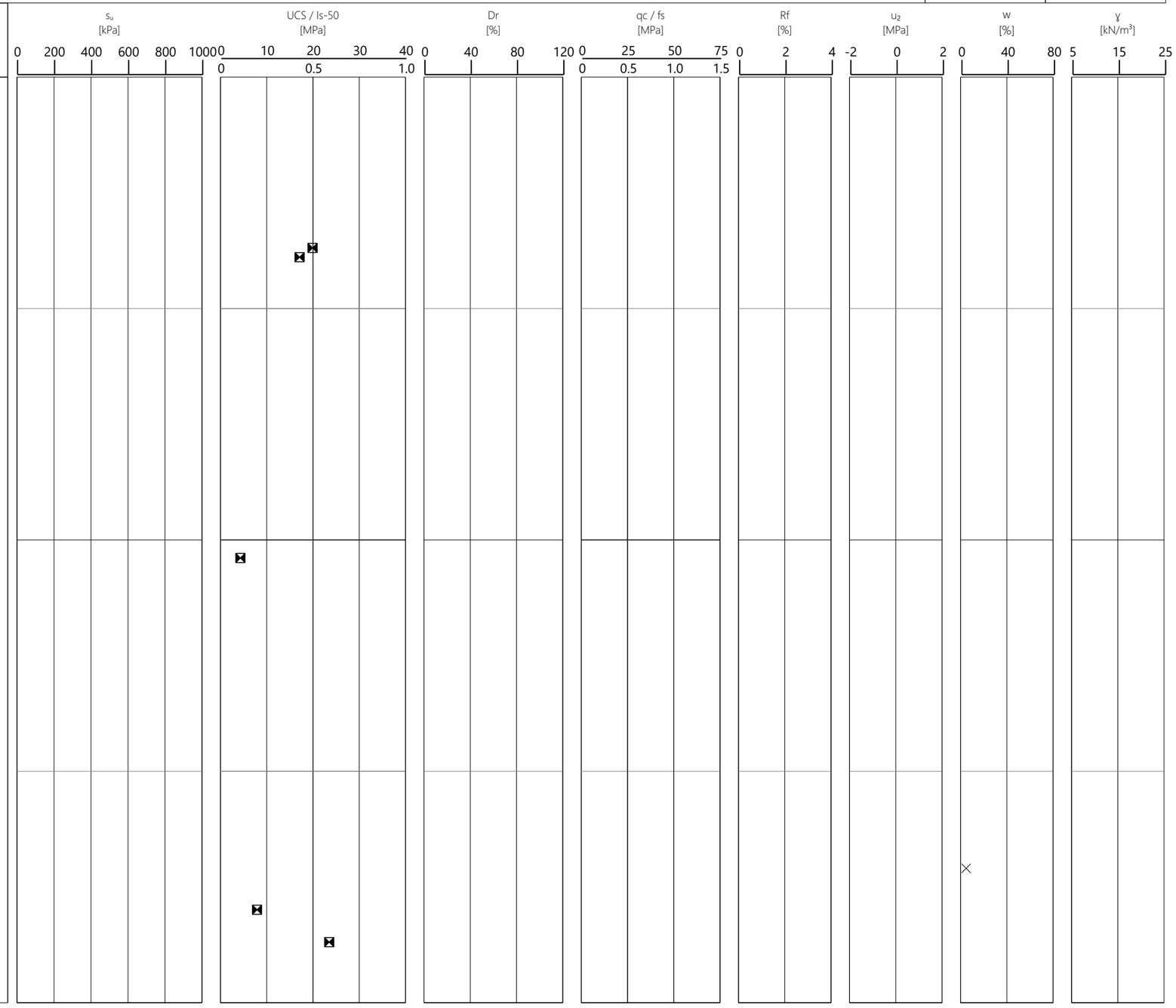
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.303

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum UTM Zone 30	Date	01 06 2022 to 04 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM Sheet 26 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-78.0	49.77 m to 51.71 m - Strong thinly laminated light blueish grey locally dark reddish grey fine grained SANDSTONE with medium spaced very thin to medium beds of dark reddish grey moderately weak siltstone locally with frequent calcite nodules (< 30mm x 18mm x 25mm). Partially weatherd. Fractures are 0 to 5 degrees closely and medium spaced planar rough locally smooth very tight and tight locally partially open clean locally with clay infill (< 1mm). 50.40m to 50.72m: medium bed of siltstone. 50.50m to 50.68m: frequent calcite nodules (< 30mm x 18mm x 25mm). 50.85m to 50.99m: frequent calcite nodules (< 28mm x 20mm x 20mm). 50.96m to 51.00m: very thin lenticular bed of siltstone. 51.20m to 51.71m: occasional banded calcite nodules (< 25mm x 5mm). 51.21m to 51.24m: very thin bed of siltstone. 51.60m to 51.61m: thick lamination of siltstone.		100	100	94	2	
51.0	-79.0	51.71 m to 56.68 m - Medium strong thinly laminated dark reddish grey SILTSTONE with rare very thin beds and lenses of strong dark grey fine grained sandstone and with rare calcite nodules (< 9mm x 4mm). Partially weathered. Fractures are 0 to 10 degrees very						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

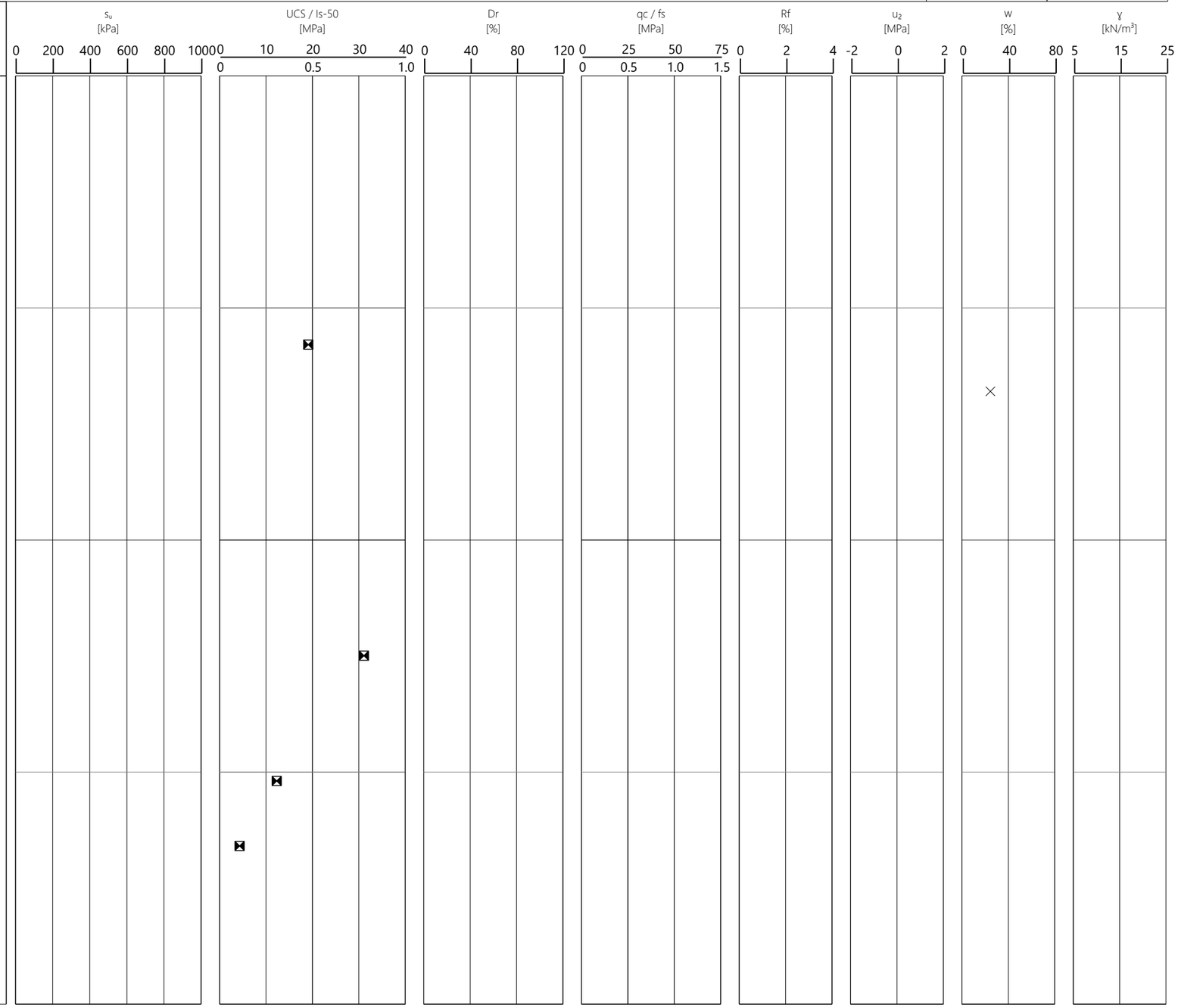
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 27 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-80.0	51.71 m to 56.68 m - Medium strong thinly laminated dark reddish grey SILTSTONE with rare very thin beds and lenses of strong dark grey fine grained sandstone and with rare calcite nodules (< 9mm x 4mm). Partially weathered. Fractures are 0 to 10 degrees very closely to medium spaced undulating locally planar smooth locally rough partially open locally very tight and tight with clay infill (< 2mm) locally clean. Fractures are inclined 45 degrees widely spaced undulating smooth partially open with clay infill (< 1mm). Fractures are inclined 70 degrees undulating rough partially open with clay infill (< 1mm).		100	99	87		
		51.94m to 52.00m: very thin bed of sandstone.						
		52.20m to 52.38m: extremely closely and very closely spaced sandstone lenses (< 70mm x 18mm).						
		52.45m to 52.62m: rare calcite nodules (< 9mm x 4mm).						
	-53.0							
	-81.0	53.30m to 53.36m: very thin bed of greenish grey siltstone.						
		53.42m to 53.47m: very thin bed of greenish grey siltstone.						
		53.52m to 54.80m: thin cross lamination predominant.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 28 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-82.0	51.71 m to 56.68 m - Medium strong thinly laminated dark reddish grey SILTSTONE with rare very thin beds and lenses of strong dark grey fine grained sandstone and with rare calcite nodules (< 9mm x 4mm). Partially weathered. Fractures are 0 to 10 degrees very closely to medium spaced undulating locally planar smooth locally rough partially open locally very tight and tight with clay infill (< 2mm) locally clean. Fractures are inclined 45 degrees widely spaced undulating smooth partially open with clay infill (< 1mm). Fractures are inclined 70 degrees undulating rough partially open with clay infill (< 1mm).		100	100	90	4	
		54.04m to 54.11m: thin bed of greenish grey siltstone.						
55.0	-83.0	55.39m to 55.43m: very thin bed of greenish grey siltstone.		100	100	99		

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 29 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-84.0	51.71 m to 56.68 m - Medium strong thinly laminated dark reddish grey SILTSTONE with rare very thin beds and lenses of strong dark grey fine grained sandstone and with rare calcite nodules (< 9mm x 4mm). Partially weathered. Fractures are 0 to 10 degrees very closely to medium spaced undulating locally planar smooth locally rough partially open locally very tight and tight with clay infill (< 2mm) locally clean. Fractures are inclined 45 degrees widely spaced undulating smooth partially open with clay infill (< 1mm). Fractures are inclined 70 degrees undulating rough partially open with clay infill (< 1mm).						
		56.68 m to 58.21 m - Strong thinly cross laminated blueish grey SANDSTONE locally with very thin and thin beds of moderately weak thinly laminated dark reddish grey siltstone. Partially weathered.						
		56.85m to 56.89m: very thin bed of siltstone.						
	-57.0							
		57.05m to 57.10m: very thin bed of siltstone.		100	100	94	2	
		57.12m to 57.37m: thin bed of siltstone.						
	-85.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	59.30	**BH26**
	Fugro Reference	F186642		Seabed Level [m LAT]	-27.80	
	Coordinates	297804.74 mE 5842066.43 mN	Coordinate Datum / UTM Zone 30	Date	01 06 2022 to 04 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 30 of 30

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	86.0	56.68 m to 58.21 m - Strong thinly cross laminated blueish grey SANDSTONE locally with very thin and thin beds of moderately weak thinly laminated dark reddish grey siltstone. Partially weathered.						
		58.21 m to 59.30 m - Medium strong thinly laminated dark reddish grey SILTSTONE with some calcite veining (< 10mm x 30mm). Slightly weathered. Fractures are 0 to 10 degrees closely and medium spaced planar smooth partially open and tight with clay infill (< 4mm) locally clean. Fractures are inclined 45 degrees widely spaced undulating smooth partially open with clay infill (< 1mm).		100	100	91	6	
59.0								
	87.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Plate 6.308

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 1 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Template: FGSL/HBSI/FGSL Discontinuity.hbt/Config Fugro Rev5/18/02/2019/TS | Print Date: 01 09 2022

Plate 6.309

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 2 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 3 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 4 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 5 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 6 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID
Client	Sure Partners Ltd			**BH26**
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 7 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									13		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 8 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 9 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 10 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 11 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 12 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 13 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 14 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 15 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 16 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									31		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 17 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 18 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									35		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH26**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum) -27.80	Sheet 19 of 30
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									37		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 20 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
39.76 - 39.77	BF	0		PO	Pl	Sm		Clay (<1mm).	39	0 °	
39.94 - 39.95	BF	5		PO	Pl	Sm		Clay (<1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 21 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
40.05 - 40.06	BF	5		PO	Pl	Sm		Clay (<1mm).		5 °	
40.06	BF	0		PO	Pl	Sm		Clay (<1mm).		0 °	
40.06 - 40.07	BF	5		PO	Pl	Sm		Clay (<1mm).		5 °	
40.17 - 40.18	BF	5		PO	Pl	Sm		Clay (<1mm).		5 °	
40.40	BF	0		PO	Pl	Sm		Clay (<1mm).		0 °	
40.76 - 40.77	BF	5		MW	Pl	Ro		Clay and claystone gravel.		5 °	
40.82	BF	0		PO	Pl	Sm		Clay (<1mm).		0 °	
									41		
41.67 - 41.68	BF	5		MW	Pl	Sm		Clay smear.		5 °	
41.80 - 42.71	J	75		MW	Un	Sm		Clay (<4mm).		75 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 22 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
42.33 - 42.34	BF	5		O	Pl	Sm		Clay smear.		5 °	
42.49 - 42.50	BF	5		O	Pl	Sm		Clay smear.		5 °	
42.71 - 42.73	BF	5		MW	Pl	Sm		Claystone gravel and clay.		5 °	
									43		
43.06 - 43.08	BF	0		PO	Pl	Sm		Clay infill (< 20mm). Infill showing rare grey reduction spots (< 4mm).		0 °	
43.42	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	
43.75 - 43.76	BF	5		PO	Un	Sm		Clay infill (< 1mm).		5 °	
43.88 - 43.90	BF	0		W	Pl	Sm		Clay infill (< 20mm).		0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 23 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
44.19 - 44.21	BF	10		T	Un	Sm				10 °	
44.60	BF	5		VT	Pl	Sm				5 °	
44.74	BF	10		O	Un	Sm		Clay (< 2mm).		10 °	
44.93 - 44.94	BF	5		VT	Un	Sm			45	5 °	
45.17 - 45.18	BF	5		PO	Un	Sm		Clay infill (< 4mm).		5 °	
45.40 - 45.41	BF	5		O	Pl	Sm		Clay infill (< 1mm).		5 °	
45.43	BF	0		O	Pl	Sm		Clay infill (< 1mm).		0 °	
45.70	BF	0		O	Un	Sm		Clay infill (< 1mm).		0 °	
45.90 - 45.98	NI							Distinctly weathered siltstone. Recovered as very stiff silt.			

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 24 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
46.05 - 46.06	BF	5		VT	Pl	Sm				5 °	
46.37 - 46.39	J	15		VT	Pl	Sm				15 °	
46.64 - 46.65	BF	5		W	Un	Sm		Clay infill (< 10mm).		5 °	
									47		
47.11 - 47.12	BF	0		MW	Pl	Sm		Clay infill (< 4mm).		0 °	
47.30 - 47.34	J	80			Un	Ro		Top side missing.		80 °	
47.51	BF	0		T	Pl	Sm				0 °	
47.56	BF	0		VT	Pl	Sm				0 °	
47.61 - 47.74	J	80		T	Un	Ro		Localised calcite and pyrite mineralisation (<1mm) on fracture surfaces.		80 °	
47.75 - 47.76	BF	5		VT	Un	Sm				5 °	
47.91 - 47.92	BF	5		PO	Pl	Sm		Clay infill (< 1mm).		5 °	
47.98 - 47.99	BF	5		PO	Pl	Sm		Clay infill (< 1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID	**BH26**
Client	Sure Partners Ltd				
Fugro Reference	F186642				
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 25 of 30	
Hole Type	Discontinuity Log			Status	Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
48.34	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
48.51	BF	0		PO	Pl	Sm		Clay infill (< 1mm).		0 °	
48.59	BF	0		PO	Pl	Sm		Clay infill (< 1mm).		0 °	
48.66 - 48.67	BF	5		PO	Pl	Sm		Clay infill (< 1mm). Potential fossilised dessiccation cracks on fracture surface.		5 °	
48.70 - 48.80	NR							Assumed zone of core loss.			
									49		
49.12	BF	0		PO	Pl	Sm		Clay infill (< 1mm).		0 °	
49.25	BF	0		PO	Un	Sm		Clay (< 1mm).		0 °	
49.54 - 49.56	J	15		T	Pl	Sm				15 °	
49.55 - 49.57	J	15		T	Pl	Sm				15 °	
49.94	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 26 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									51		
51.04	BF	0		VT	Pl	Ro				0 °	
51.20	BF	5		VT	Pl	Ro				5 °	
51.71 - 51.72	BF	5		T	Un	Ro				5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 27 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
52.58	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	
52.67 - 52.69	BF	10		W	Un	Sm		Clay infill (< 20mm).		10 °	
52.75 - 52.77	BF	10		T	Un	Sm				10 °	
									53		
53.04	BF	0		VT	Sp	Sm				0 °	
53.25	BF	0		O	Pl	Sm		Clay infill (< 2mm).		0 °	
53.52	BF	0		O	Pl	Sm		Clay infill (< 2mm).		0 °	
53.66	BF	5		PO	Pl	Sm		Clay infill (< 1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 28 of 30
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
54.07 - 54.22	J	70		PO	Pl	Ro		Clay infill (< 1mm).		70 °	
54.22	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	
54.33 - 54.38	J	45		PO	Un	Sm		Clay infill (< 1mm).		45 °	
54.40 - 54.42	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	
54.71	BF	0		O	Un	Ro		Clay infill (< 2mm).		0 °	
									55		
55.10	BF	0		VT	Pl	Sm				0 °	
55.43	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
55.75	BF	5		VT	Pl	Sm				5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 29 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
56.17	BF	0		PO	Un	Sm		Clay infill (< 1mm).		0 °	
56.28	BF	0		MW	Un	Ro		Clay infill (< 2mm).		0 °	
56.86	BF	0		MW	Un	Ro		Clay infill (< 2mm).		0 °	
									57		
57.27 - 57.29	J	15		O	Pl	Ro		Clay infill (< 1mm).		15 °	
57.49	BF	0		PO	Pl	Sm		Clay (< 1mm).		0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 30 of 30
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
58.47 - 58.48	BF	5		O	Pl	Sm				5 °	
58.52 - 58.53	BF	0		PO	Un	Sm				0 °	
58.63 - 58.64	BF	0		PO	Pl	Sm				0 °	
58.69 - 58.71	BF	5		PO	Pl	Sm				5 °	
58.88 - 58.90	BF	10		MW	Un	Sm				10 °	
									59		
59.19 - 59.21	BF	5		T	Pl	Sm				5 °	
59.25 - 59.27	BF	0		W	Pl	St				0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 1 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	1.00	DS	01 06 2022	01 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB,CH	TC/FS	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 46.60m; Cantilever to LAT = 18.80m; LAT to Mud = 27.80m 3. All depths refer to depth below seabed level.
1.00	39.50	RORC	01 06 2022	03 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB,CH,KH,JG	TC/FS	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
01 06 2022	07:00	0.00	0.00		
01 06 2022	19:00	0.00	1.00		
02 06 2022	08:00	6.50	5.50		
02 06 2022	19:00	18.50	18.50		
03 06 2022	07:46	27.00	25.50		
04 06 2022	07:25	47.30	45.80		
04 06 2022	16:25	59.30	59.30		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.00	178		
59.30	146		

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	1.00	W	0		00:07
1.00	2.00	PB	75	Grey	00:08
2.00	2.50	PB	75	Grey	00:22
2.50	3.50	PB	75	Grey	00:26
3.50	5.00	PB	75	Grey	00:35
5.00	6.50	PB	75	Grey	00:34
5.50	6.50	PB	100	Clear	00:36
6.50	7.00	PB	100	Clear	00:35
7.00	8.00	PB	100	Clear	00:25
8.00	9.50	PB	100	Clear	00:31
9.50	10.50	PB	100	Clear	00:25
10.50	11.00	PB	100	Clear	00:35
11.00	12.00	PB	100	Cream	00:38
12.00	13.50	PB	100	Cream	00:38
13.50	14.50	PB	100	Cream	00:29
14.50	16.00	PB	100	Cream	00:35
16.00	16.50	PB	100	Cream	
16.50	17.50	PB	0		
17.50	18.50	PB	0		
18.50	19.50	PB	0		
19.50	20.00	PB	0		
20.00	21.00	PB	0		
21.00	22.00	PB	0		
22.00	22.50	PB	0		
22.50	23.50	PB	0		
23.50	23.90	PB	0		
23.90	24.50	PB	0		
24.50	25.50	PB	0		
25.50	27.00	PB	0		
27.00	28.00	PB	0		
27.00	27.00	PB	0		
28.00	28.50	PB	0		
28.50	29.50	PB	0		
29.50	31.00	PB	0		
31.00	32.00	PB	0		
32.00	32.50	PB	0		
32.50	33.50	PB	0		
33.50	34.00	PB	0		
34.00	35.00	PB	0		
35.00	36.00	PB	0		
36.00	37.00	PB	0		
37.00	38.30	PB	0		
38.30	39.50	PB	0		
39.50	40.50	PB	0		
40.50	41.50	PB	0		
41.50	42.80	PB	0		
42.80	44.30	PB	0		
44.30	45.80	PB	0		
45.80	47.30	PB	0		
47.30	48.80	PB	0		
48.80	50.30	PB	0		
50.30	51.80	PB	0		
51.80	53.30	PB	0		
53.30	54.80	PB	0		
54.80	56.30	PB	0		
56.30	57.80	PB	0		
57.80	59.30	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
23.50	24.50	102
24.50	25.50	102
39.50	40.50	102
40.50	41.50	102
41.50	42.80	102
42.80	44.30	102
44.30	45.80	102
45.80	47.30	102
47.30	48.80	102
48.80	50.30	102
50.30	51.80	102
51.80	53.30	102
53.30	54.80	102
54.80	56.30	102
56.30	57.80	102
57.80	59.30	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	59.30	Arisings	05 06 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH26**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E297804.74 N5842066.43	Ground Elevation (m Datum)	-27.80	Sheet 2 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
39.50	59.30	RC	03 06 2022	04 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AB,CH,KH,JG	TC/FS	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

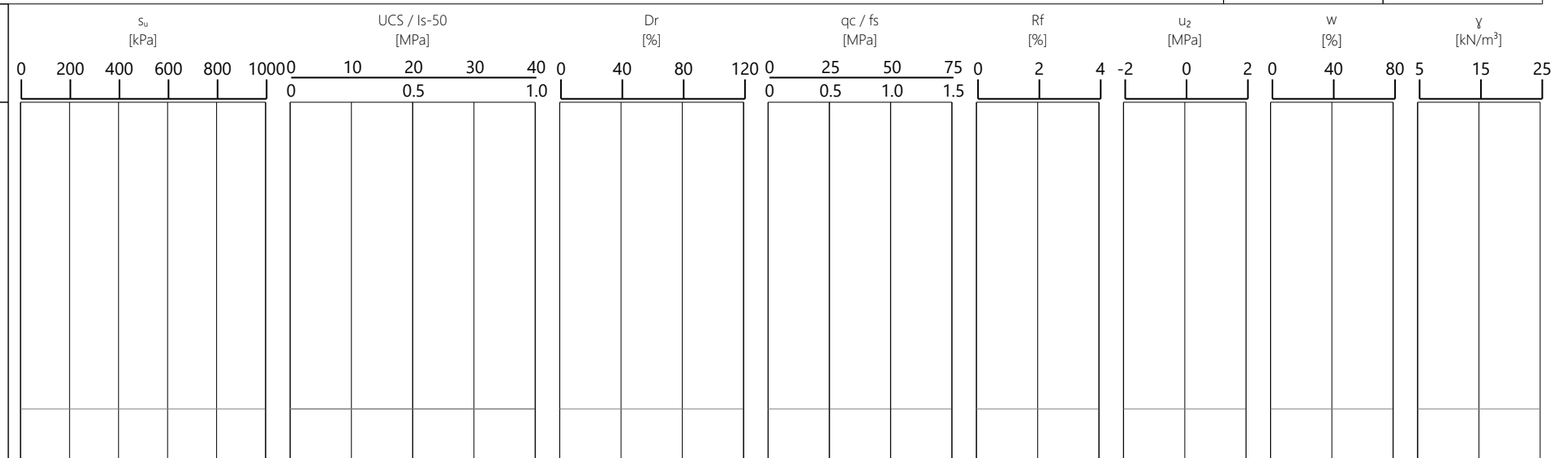
Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 1 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		0.00 m to 1.00 m - NO RECOVERY						
	-29.0							
1.0		1.00 m to 2.50 m - Light brown SAND with numerous shell fragments (<13mm). Slightly calcareous. Sand is fine to coarse predominantly coarse. [HOLOCENE DEPOSITS]						
		1.20m to 1.45m; no recovery.						
	-30.0							
		1.45m to 2.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

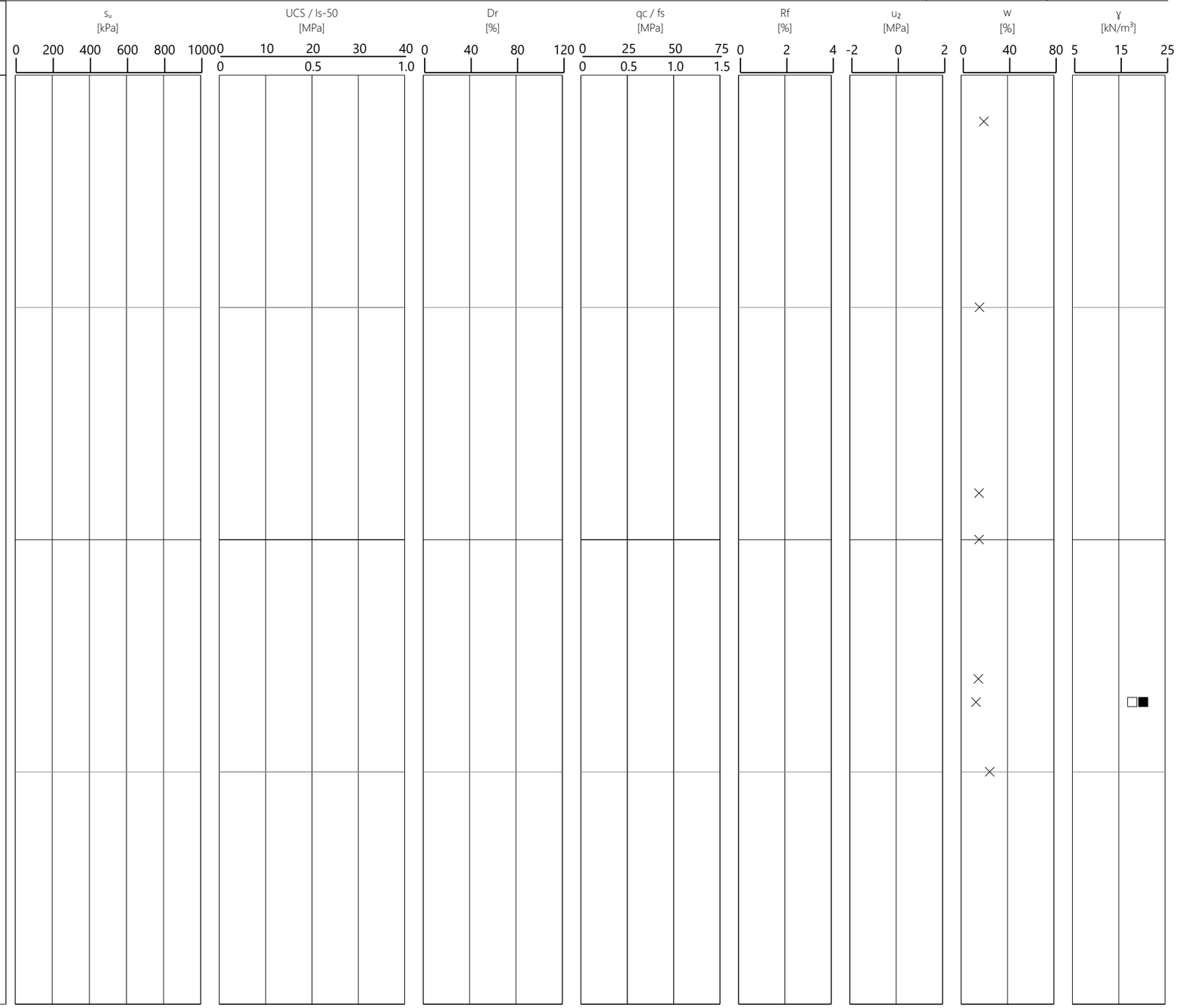
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 2 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-31.0	1.00 m to 2.50 m - Light brown SAND with numerous shell fragments (<13mm). Slightly calcareous. Sand is fine to coarse predominantly coarse. [HOLOCENE DEPOSITS] 2.25m to 2.45m; no recovery.						
3.0		2.50 m to 4.80 m - Light brown slightly gravelly slightly silty SAND with occasional shell fragments (<12mm). Slightly calcareous. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [HOLOCENE DEPOSITS] 2.90m to 3.00m; no recovery.						
	-32.0	3.40m to 3.50m; no recovery. From 3.50m; gravelly. 3.80m to 4.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

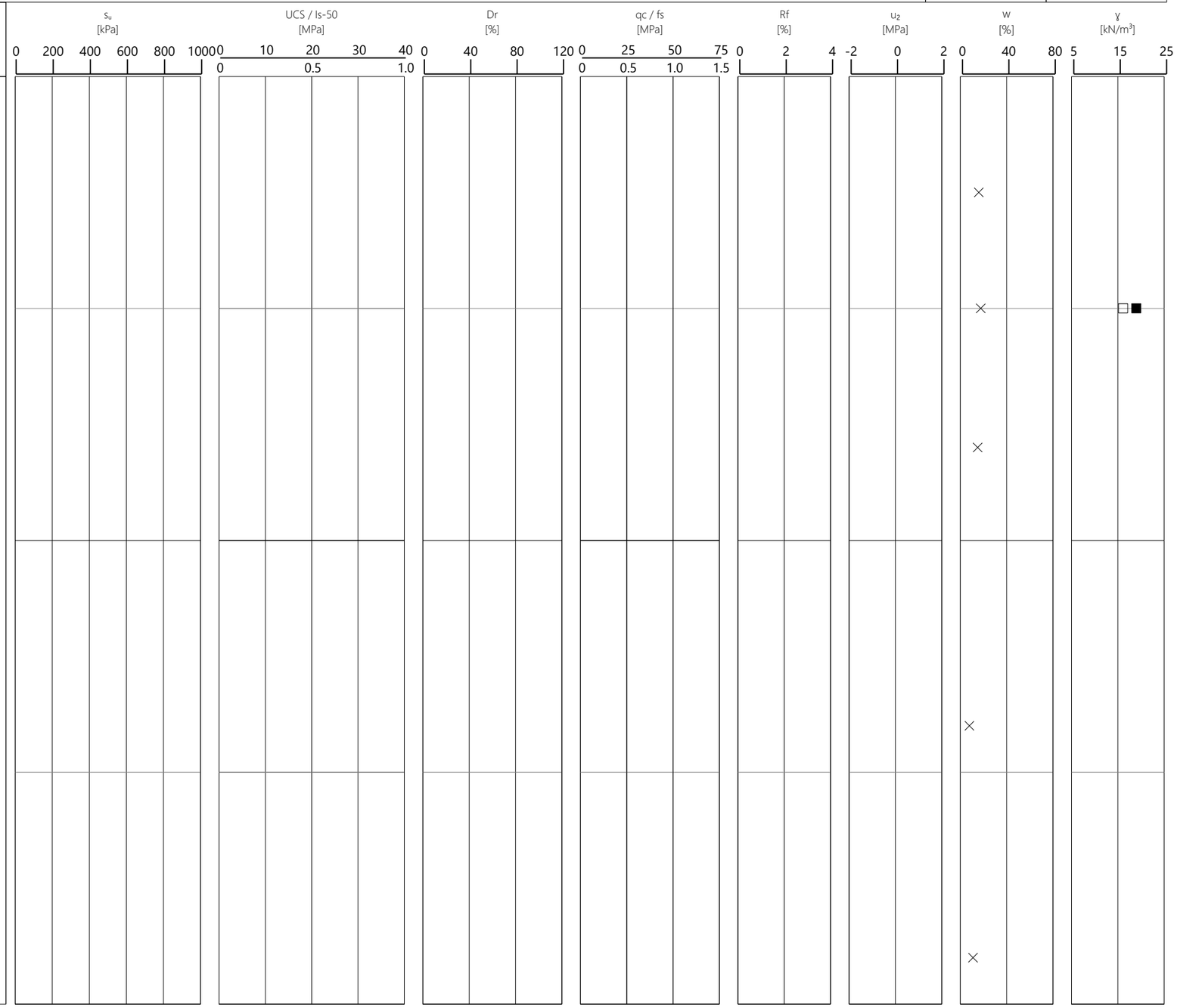
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.342

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 3 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		2.50 m to 4.80 m - Light brown slightly gravelly slightly silty SAND with occasional shell fragments (<12mm). Slightly calcareous. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [HOLOCENE DEPOSITS]						
	-33.0	4.00m to 4.25m; rare lenses (<30mm x 20mm) of silt.						
		From 4.50m; greyish brown.						
5.0		4.80 m to 5.90 m - Grey and dark grey slightly sandy subangular to rounded fine to coarse GRAVEL of quartz, sandstone and basalt. Sand is fine to coarse. [HOLOCENE DEPOSITS]						
	-34.0	5.70m to 5.90m; light brown slightly gravelly silty sand. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt.						
		5.90 m to 6.50 m - NO RECOVERY.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

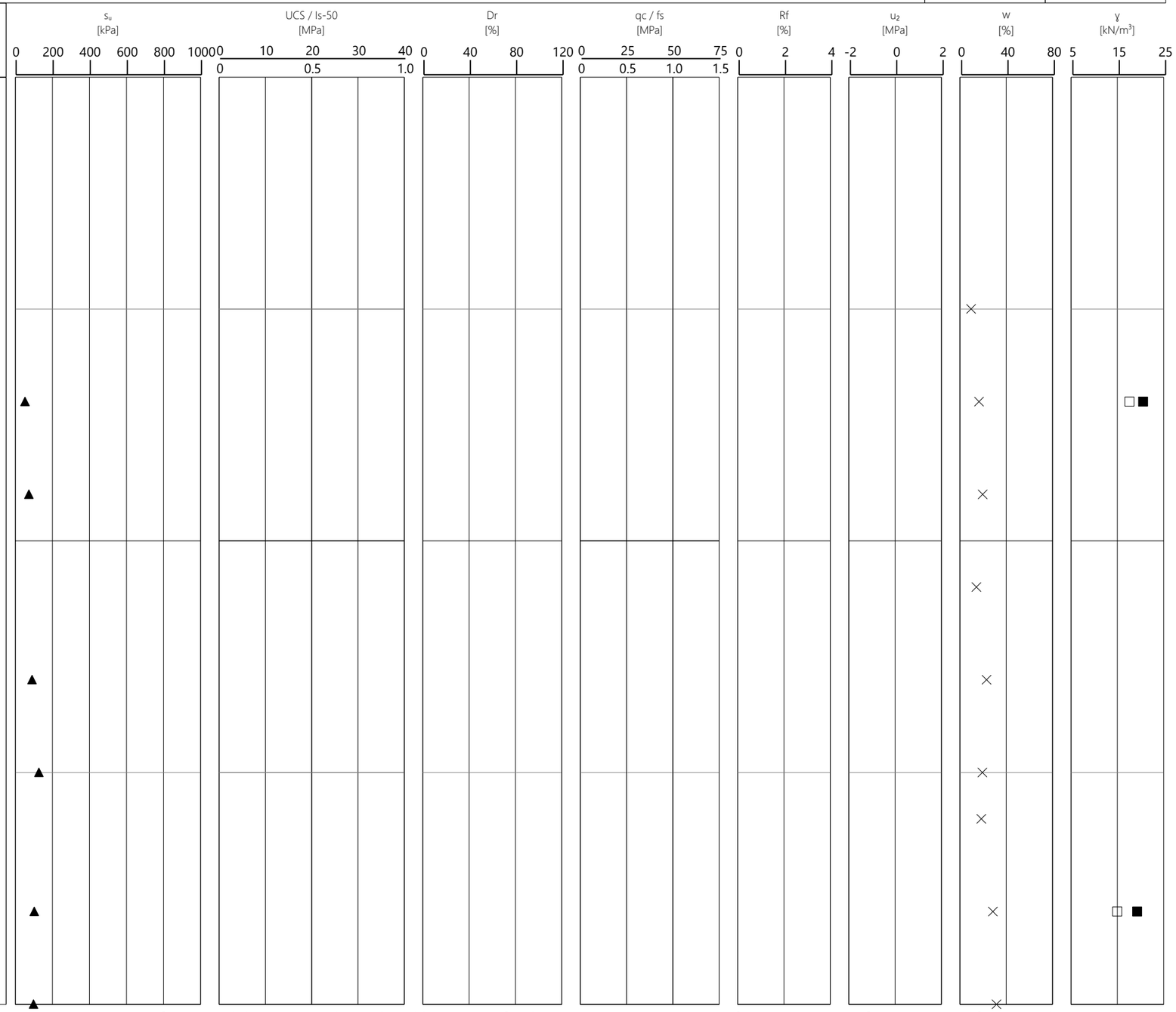
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.343

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 4 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		5.90 m to 6.50 m - NO RECOVERY.						
	-35.0							
7.0		6.50 m to 8.50 m - Firm dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION] 6.50m to 7.10m; with rare pockets of fine to coarse sand (<30mm x 50mm).						
	-36.0	7.60m to 8.10m; sand is predominantly fine and medium.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

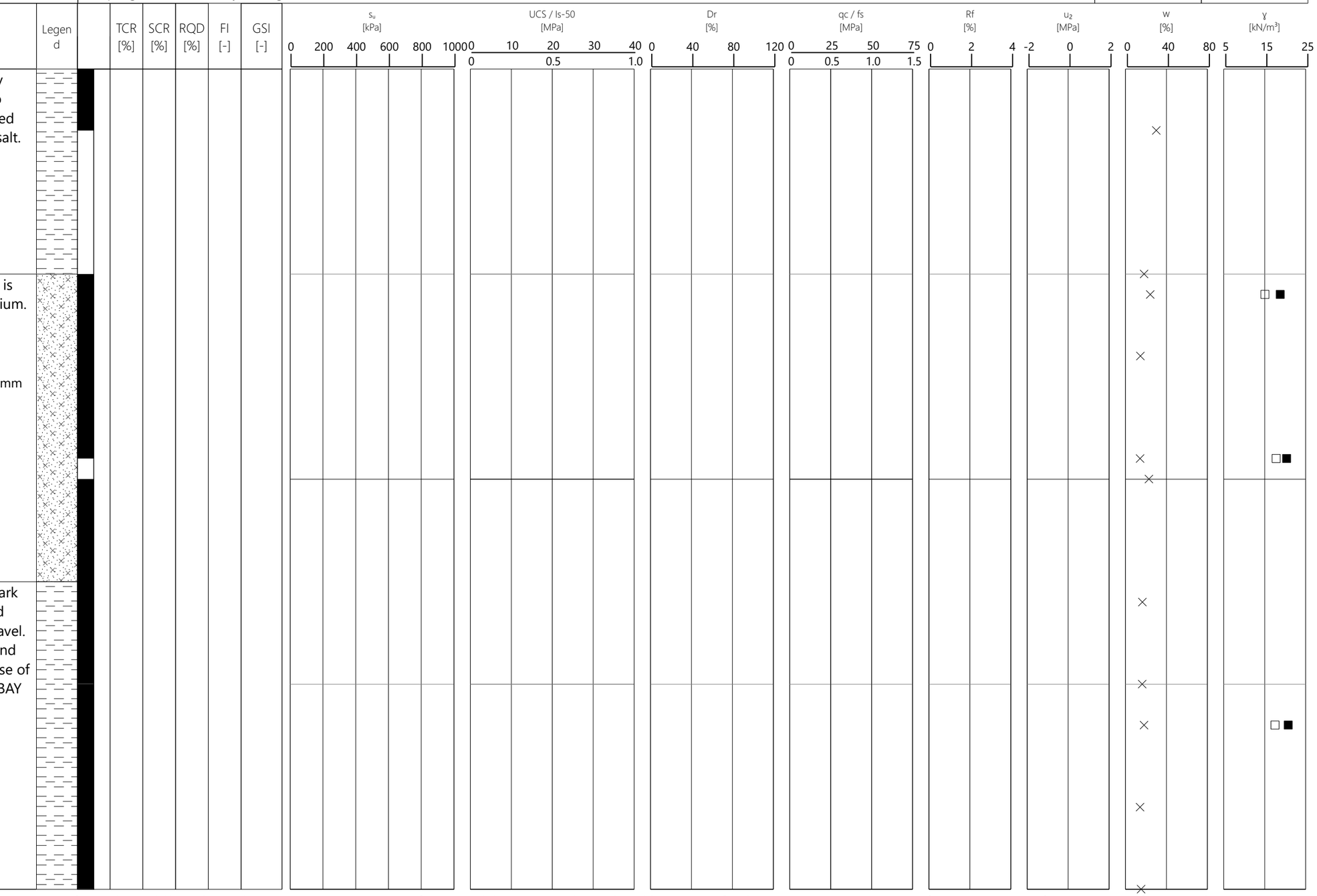
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 5 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-37.0	6.50 m to 8.50 m - Firm dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION] 8.25m to 8.50m; no recovery.						
9.0		8.50 m to 9.25 m - Brown silty SAND. Sand is fine to coarse predominantly fine and medium. [CARDIGAN BAY FORMATION] 8.70m to 8.85m; thin bed of firm dark brown slightly sandy clay with occasional lenses (<30mm x 10mm) of sand. Sand is fine and medium. 8.95m to 9.00m; no recovery. From 9.00m; dark brown and dark grey.						
	-38.0	9.25 m to 10.50 m - Stiff dark brown and dark grey slightly sandy CLAY thinly interbedded with brown slightly silty SAND with rare gravel. Sand is fine to coarse predominantly fine and medium. Gravel is subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION]						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

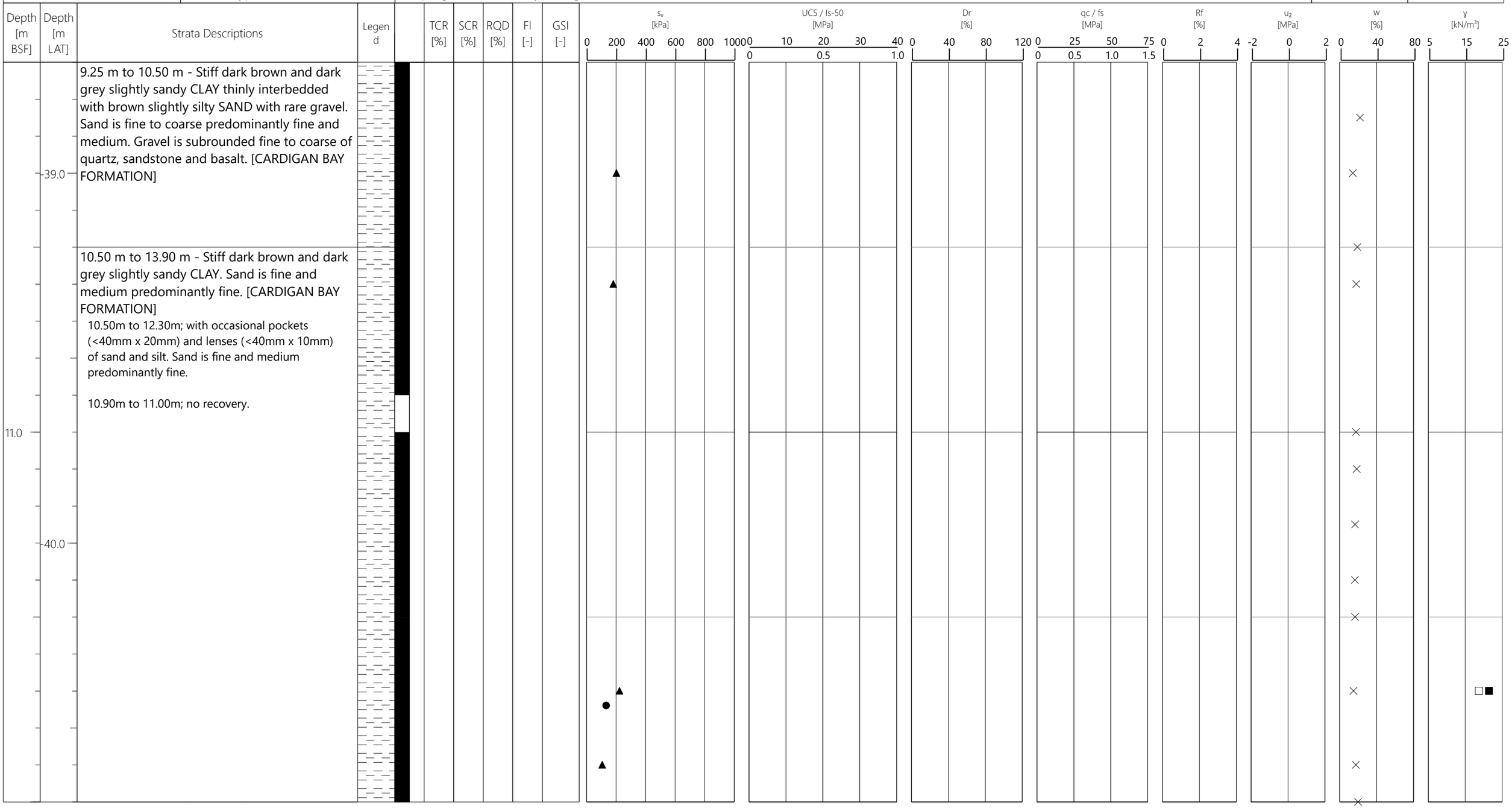
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 6 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-39.0	9.25 m to 10.50 m - Stiff dark brown and dark grey slightly sandy CLAY thinly interbedded with brown slightly silty SAND with rare gravel. Sand is fine to coarse predominantly fine and medium. Gravel is subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION]						
		10.50 m to 13.90 m - Stiff dark brown and dark grey slightly sandy CLAY. Sand is fine and medium predominantly fine. [CARDIGAN BAY FORMATION] 10.50m to 12.30m; with occasional pockets (<40mm x 20mm) and lenses (<40mm x 10mm) of sand and silt. Sand is fine and medium predominantly fine. 10.90m to 11.00m; no recovery.						
	-40.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

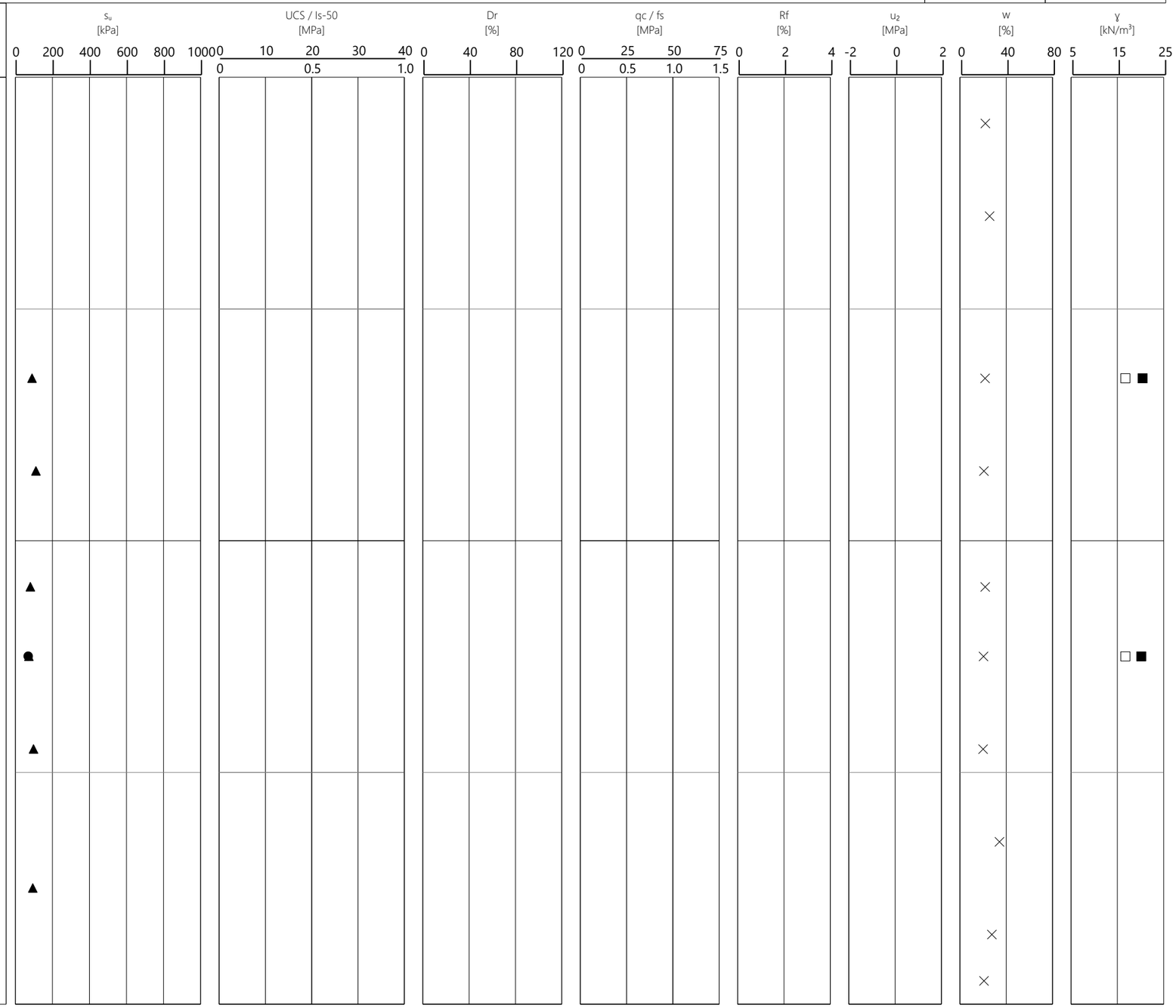
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 7 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		10.50 m to 13.90 m - Stiff dark brown and dark grey slightly sandy CLAY. Sand is fine and medium predominantly fine. [CARDIGAN BAY FORMATION]						
	-41.0	12.30m to 12.50m; recovered as very soft brown slightly sandy silt. Sand is fine and medium. (Drilling disturbed).						
13.0								
	-42.0	13.50m to 13.90m; thinly laminated with frequent silt dustings and partings and occasional lenses (<40mm x 6mm) of fine sand.						
		13.90 m to 16.00 m - Dark brown and grey very gravelly clayey SAND with rare pockets						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

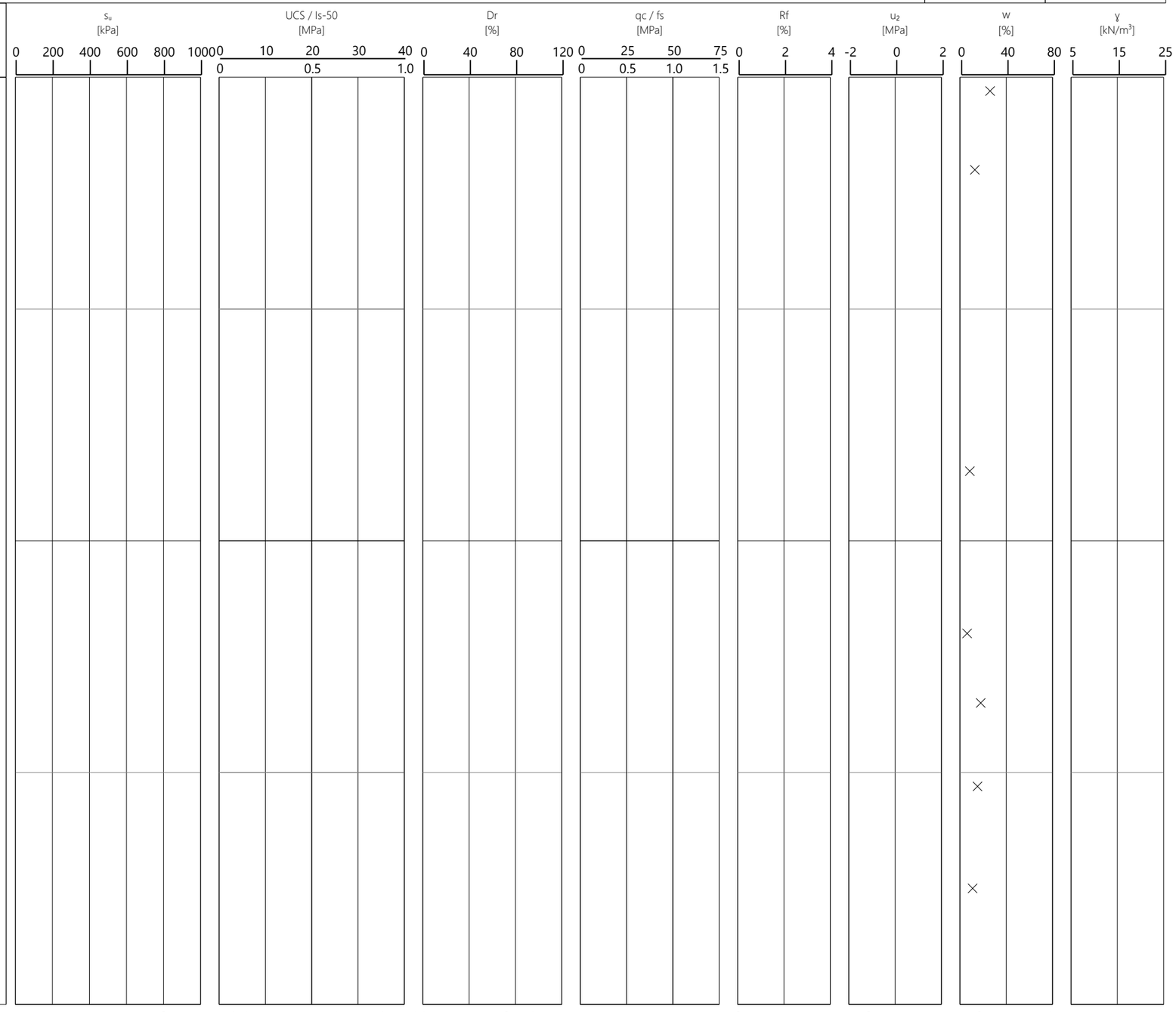
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.347

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 8 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-43.0	13.90 m to 16.00 m - Dark brown and grey very gravelly clayey SAND with rare pockets (<50mmx 30mm) of soft dark brown sandy clay. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of basalt, quartz, sandstone and psammite. [CARDIGAN BAY FORMATION]						
		14.27m to 14.50m; no recovery.						
15.0		14.90m to 15.00m; no recovery.						
	-44.0	15.40m to 15.50m; no recovery.						
		15.85m to 16.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

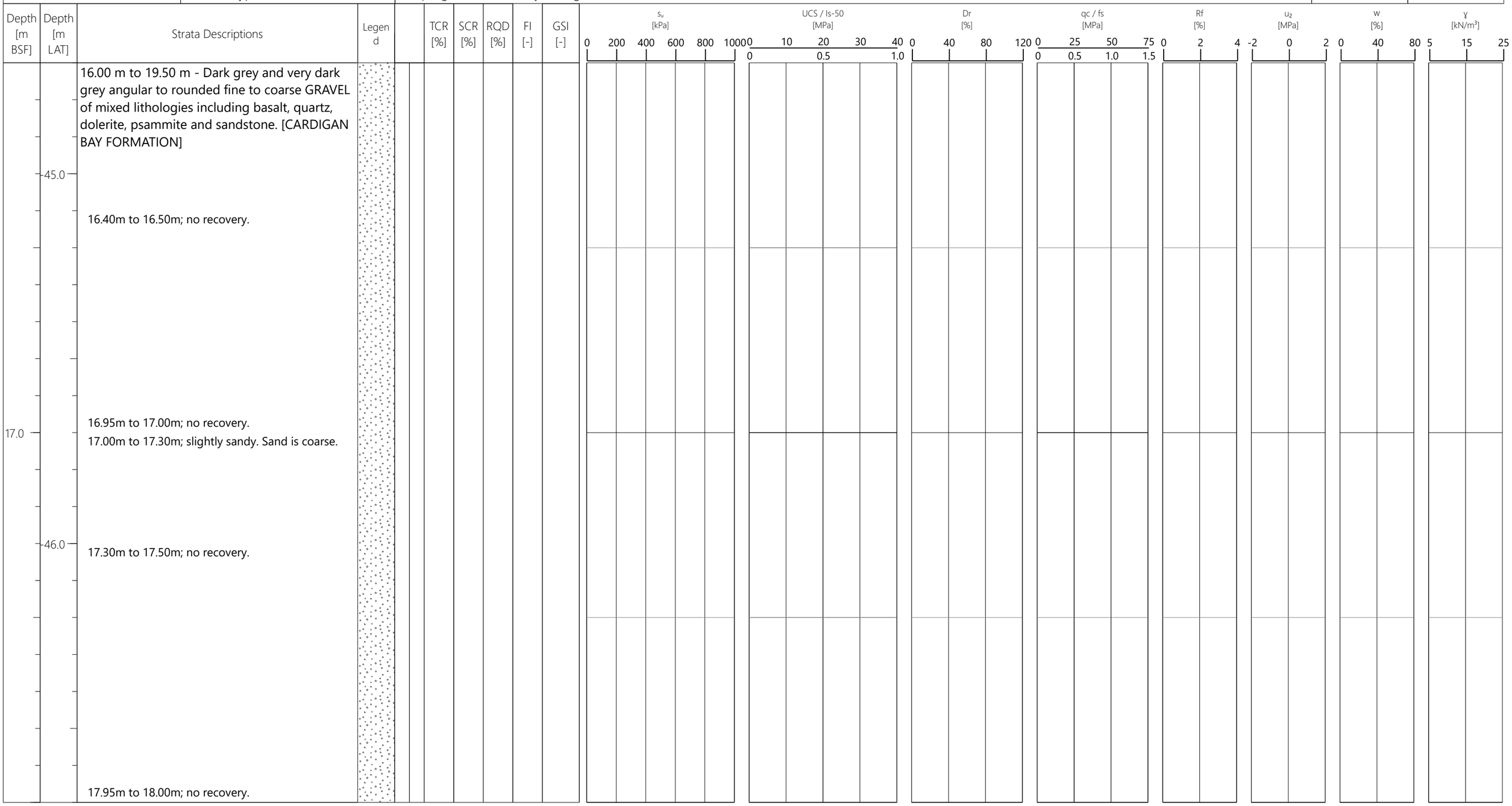
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 9 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		16.00 m to 19.50 m - Dark grey and very dark grey angular to rounded fine to coarse GRAVEL of mixed lithologies including basalt, quartz, dolerite, psammite and sandstone. [CARDIGAN BAY FORMATION]						
	-45.0							
		16.40m to 16.50m; no recovery.						
	17.0	16.95m to 17.00m; no recovery.						
		17.00m to 17.30m; slightly sandy. Sand is coarse.						
	-46.0	17.30m to 17.50m; no recovery.						
		17.95m to 18.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

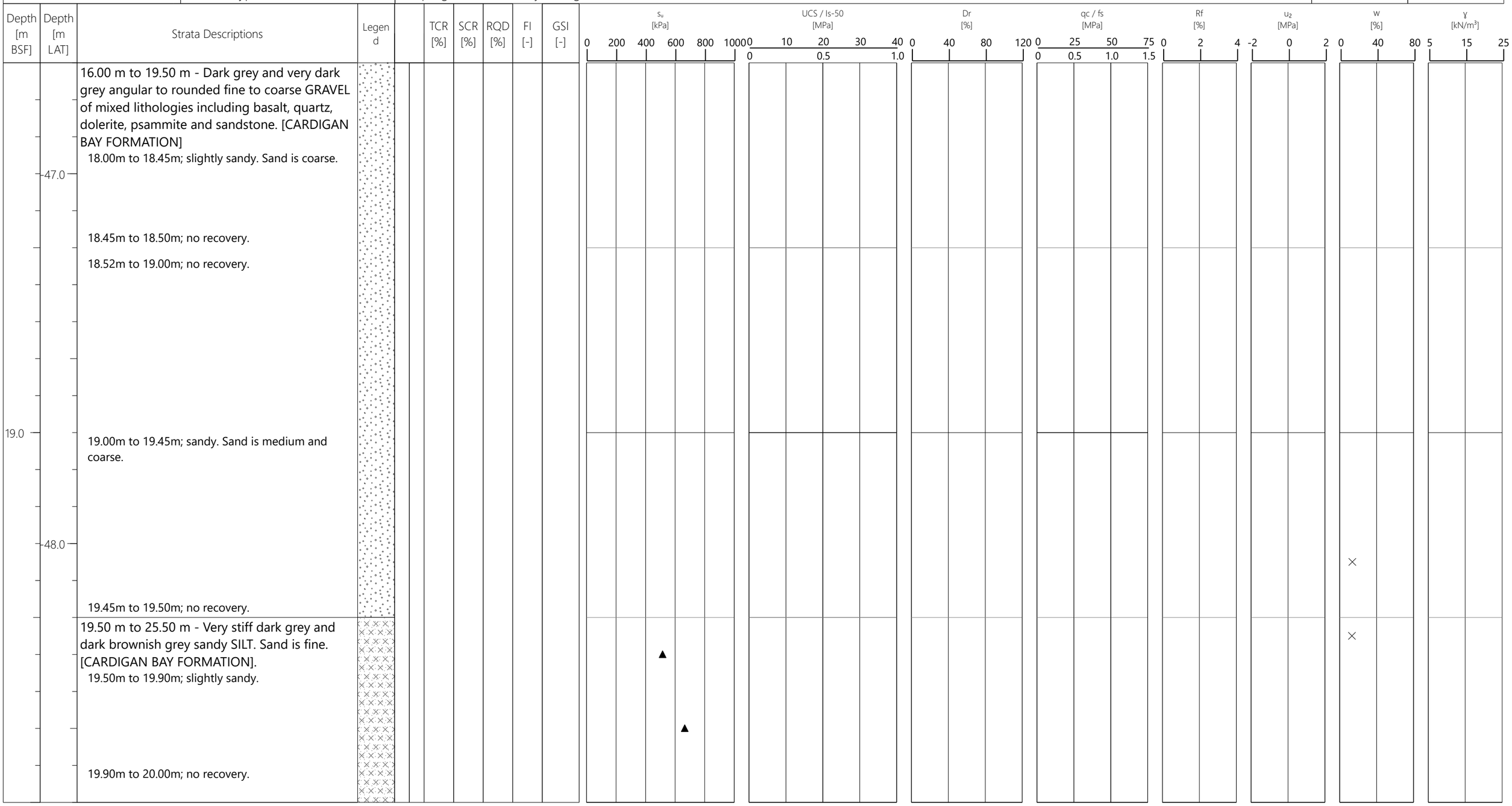
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 10 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		16.00 m to 19.50 m - Dark grey and very dark grey angular to rounded fine to coarse GRAVEL of mixed lithologies including basalt, quartz, dolerite, psammite and sandstone. [CARDIGAN BAY FORMATION]						
		18.00m to 18.45m; slightly sandy. Sand is coarse.						
	-47.0							
		18.45m to 18.50m; no recovery.						
		18.52m to 19.00m; no recovery.						
19.0		19.00m to 19.45m; sandy. Sand is medium and coarse.						
	-48.0							
		19.45m to 19.50m; no recovery.						
		19.50 m to 25.50 m - Very stiff dark grey and dark brownish grey sandy SILT. Sand is fine. [CARDIGAN BAY FORMATION].						
		19.50m to 19.90m; slightly sandy.						
		19.90m to 20.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

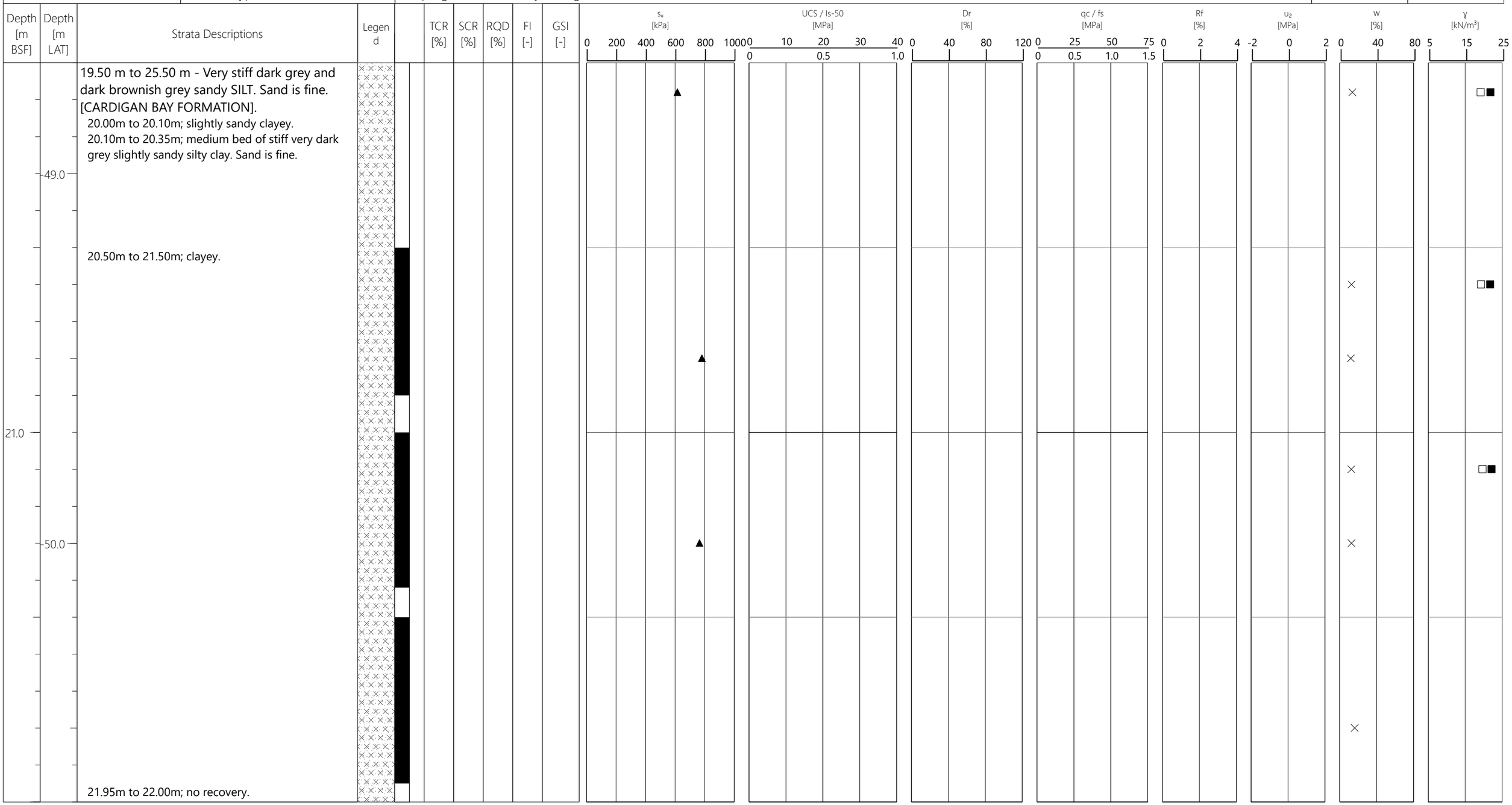
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 11 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		19.50 m to 25.50 m - Very stiff dark grey and dark brownish grey sandy SILT. Sand is fine. [CARDIGAN BAY FORMATION].						
		20.00m to 20.10m; slightly sandy clayey.						
		20.10m to 20.35m; medium bed of stiff very dark grey slightly sandy silty clay. Sand is fine.						
	-49.0							
		20.50m to 21.50m; clayey.						
	21.0							
	-50.0							
		21.95m to 22.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

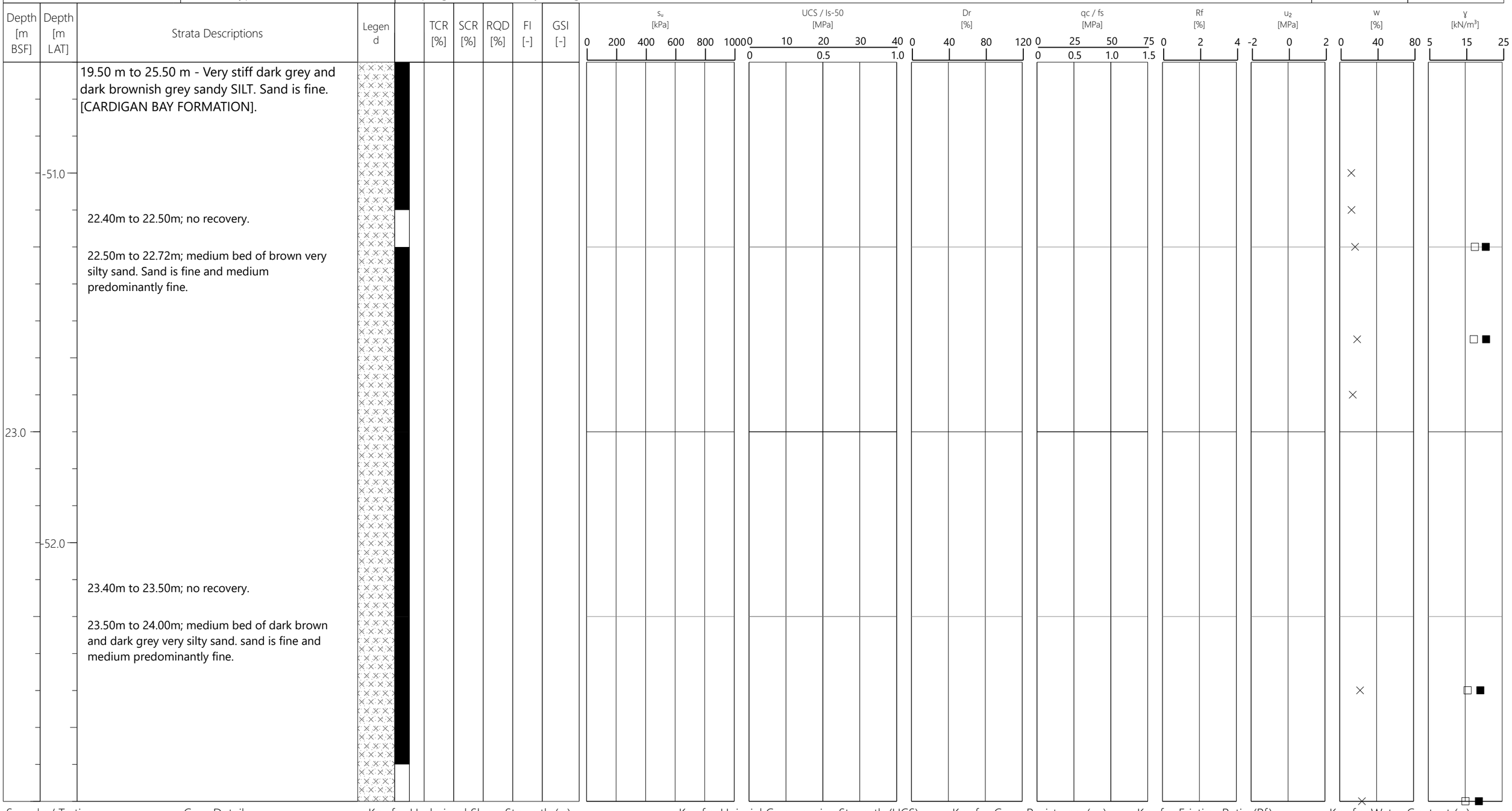
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 12 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-51.0	19.50 m to 25.50 m - Very stiff dark grey and dark brownish grey sandy SILT. Sand is fine. [CARDIGAN BAY FORMATION].						
		22.40m to 22.50m; no recovery.						
		22.50m to 22.72m; medium bed of brown very silty sand. Sand is fine and medium predominantly fine.						
23.0								
	-52.0	23.40m to 23.50m; no recovery.						
		23.50m to 24.00m; medium bed of dark brown and dark grey very silty sand. sand is fine and medium predominantly fine.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 13 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		19.50 m to 25.50 m - Very stiff dark grey and dark brownish grey sandy SILT. Sand is fine. [CARDIGAN BAY FORMATION].						
	-53.0							
25.0								
	-54.0							
		25.50 m to 33.50 m - Very stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION].						
		25.90m to 26.00m; no recovery.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

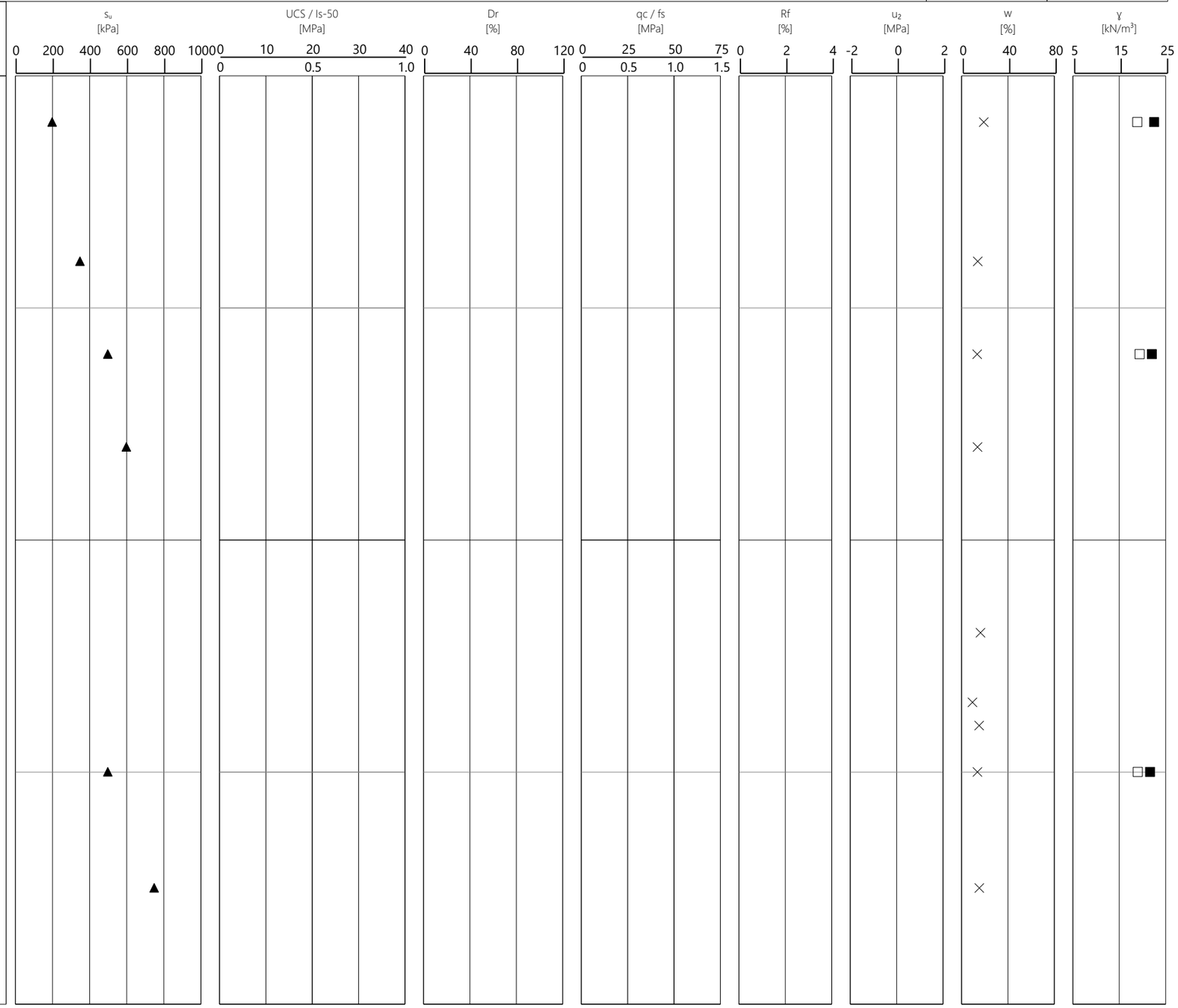
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 14 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		25.50 m to 33.50 m - Very stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION].						
	-55.0							
		26.90m to 27.00m; no recovery.						
27.0		27.00m to 27.35m; rare lenses (<50mm x 20mm) of sandy silt. Sand is fine and medium.						
	-56.0							
		27.35m to 27.40m; no recovery.						
		27.75m to 28.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 15 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-57.0	25.50 m to 33.50 m - Very stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION]. 28.35m to 28.50m; no recovery.						
	-58.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

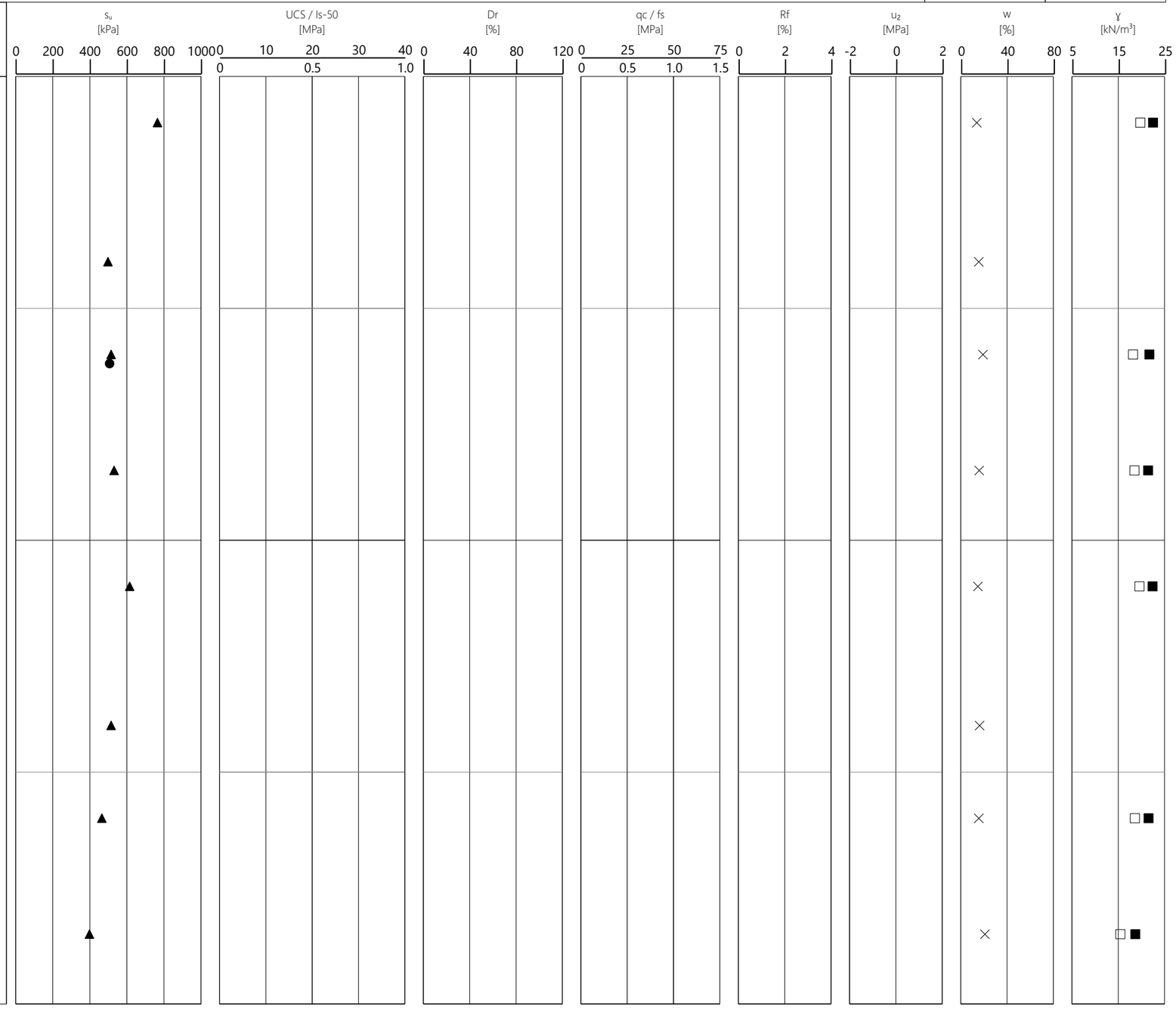
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 16 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-59.0	25.50 m to 33.50 m - Very stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION].		100				
31.0				100				
	-60.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

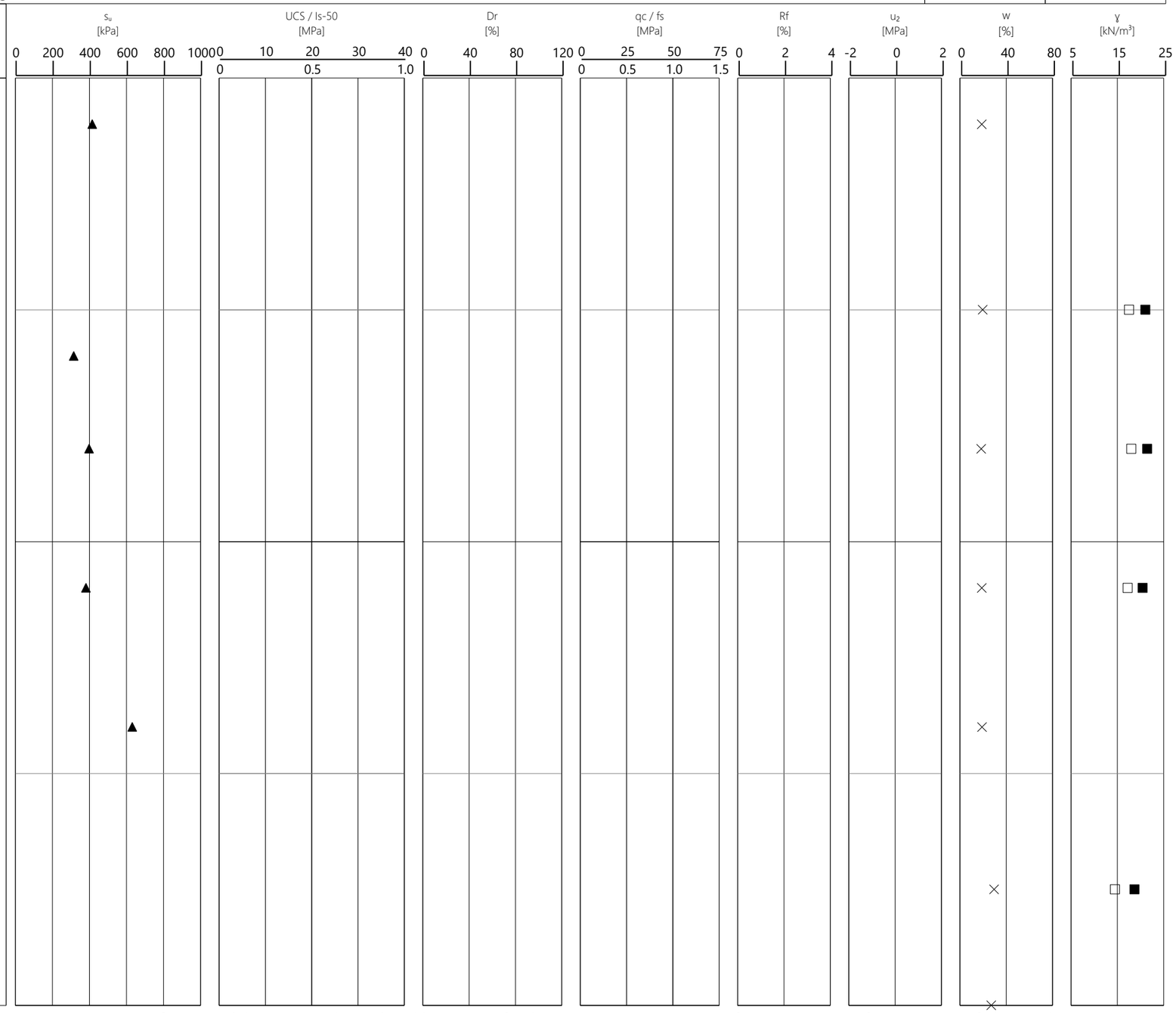
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 17 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		25.50 m to 33.50 m - Very stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse predominantly fine and medium. Gravel is subangular to rounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION].		80				
	-61.0							
33.0				100				
	-62.0	33.50 m to 40.70 m - Brown slightly silty SAND. Sand is fine and medium [CARDIGAN BAY FORMATION]. 33.50m to 34.50m; with rare gravel. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

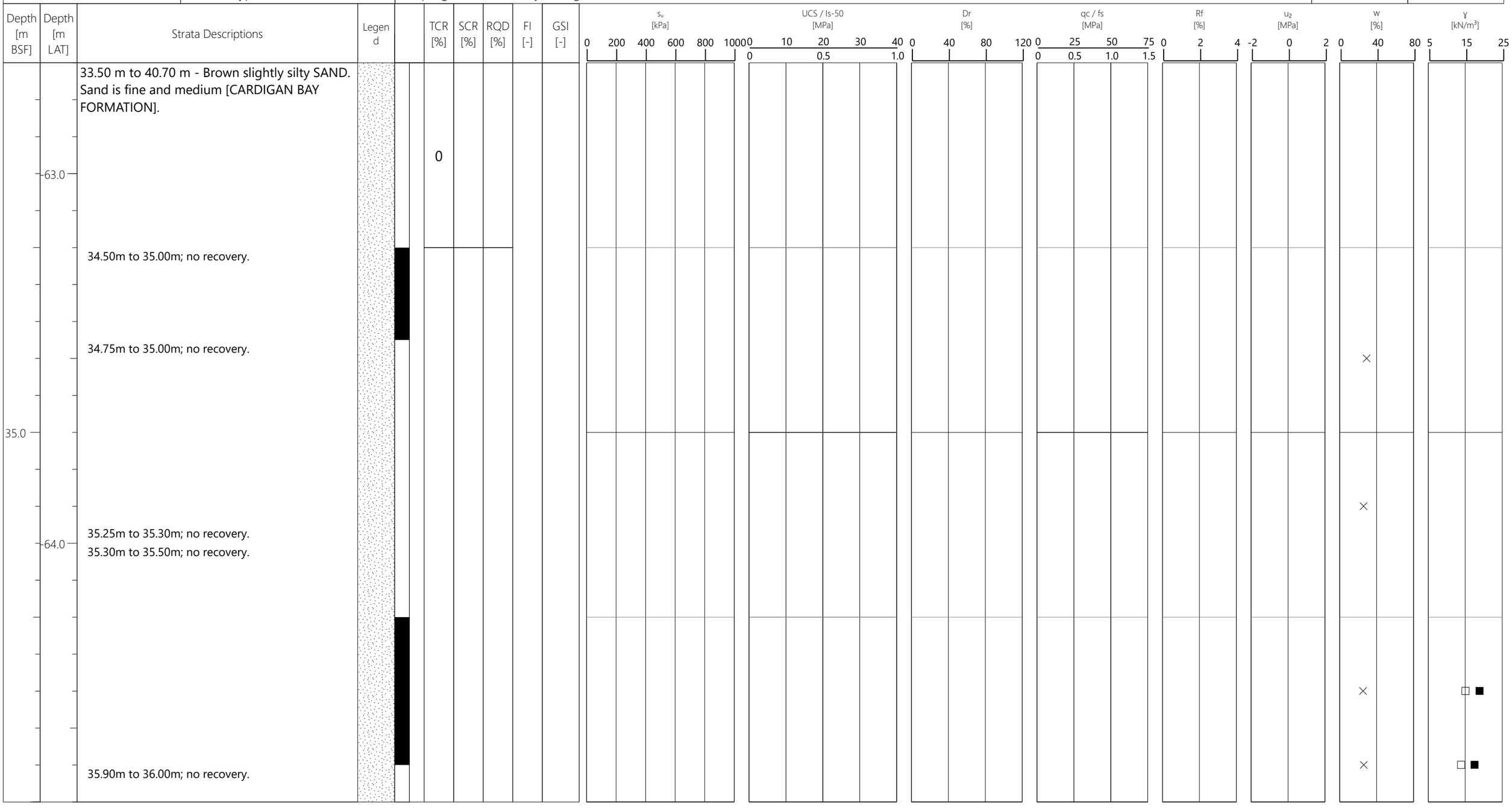
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 18 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		33.50 m to 40.70 m - Brown slightly silty SAND. Sand is fine and medium [CARDIGAN BAY FORMATION].		0				
	-63.0							
		34.50m to 35.00m; no recovery.						
		34.75m to 35.00m; no recovery.						
35.0								
	-64.0	35.25m to 35.30m; no recovery. 35.30m to 35.50m; no recovery.						
		35.90m to 36.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

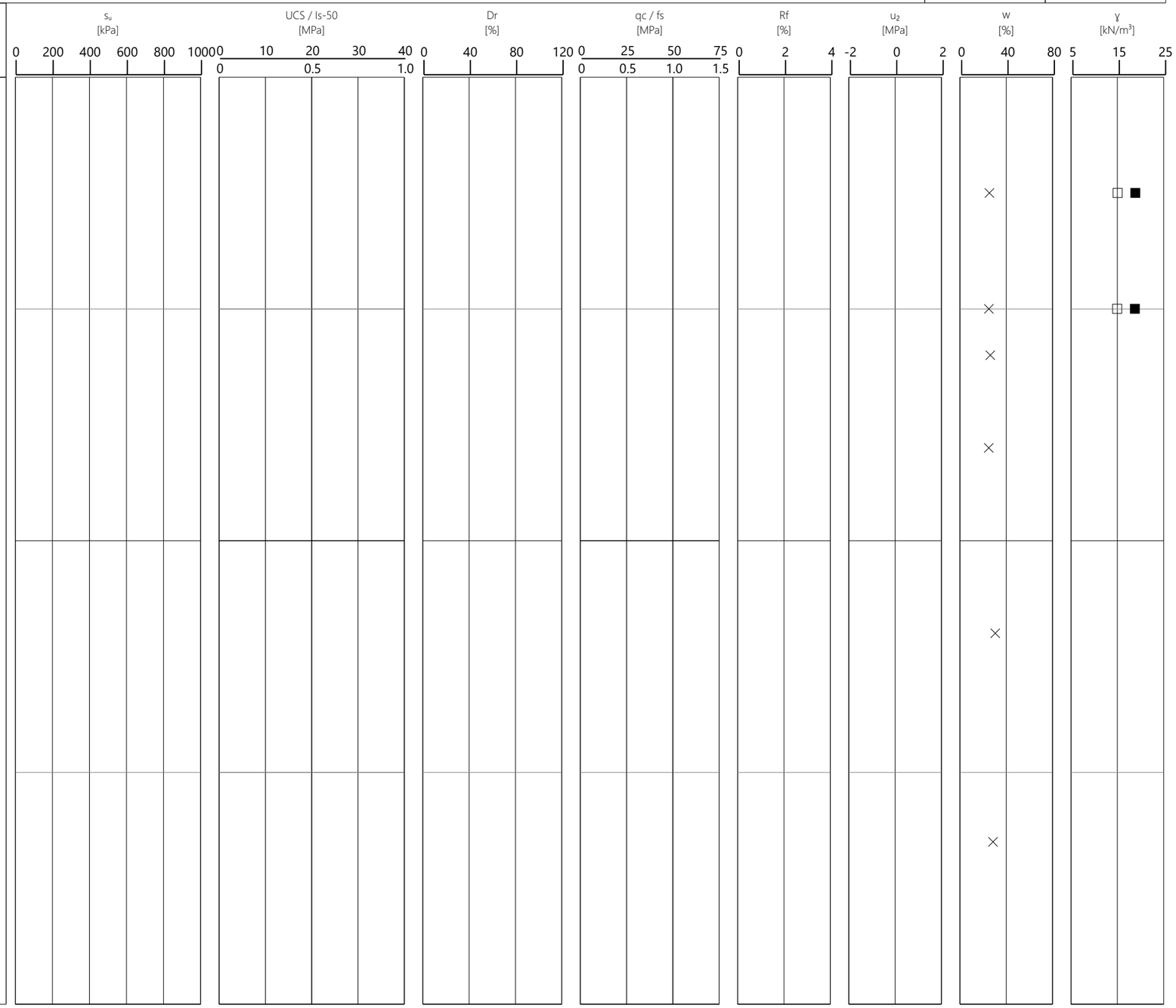
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 19 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		33.50 m to 40.70 m - Brown slightly silty SAND. Sand is fine and medium [CARDIGAN BAY FORMATION].						
37.0	65.0							
	66.0	37.35m to 37.50m; no recovery.						
		37.85m to 38.00m; no recovery.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

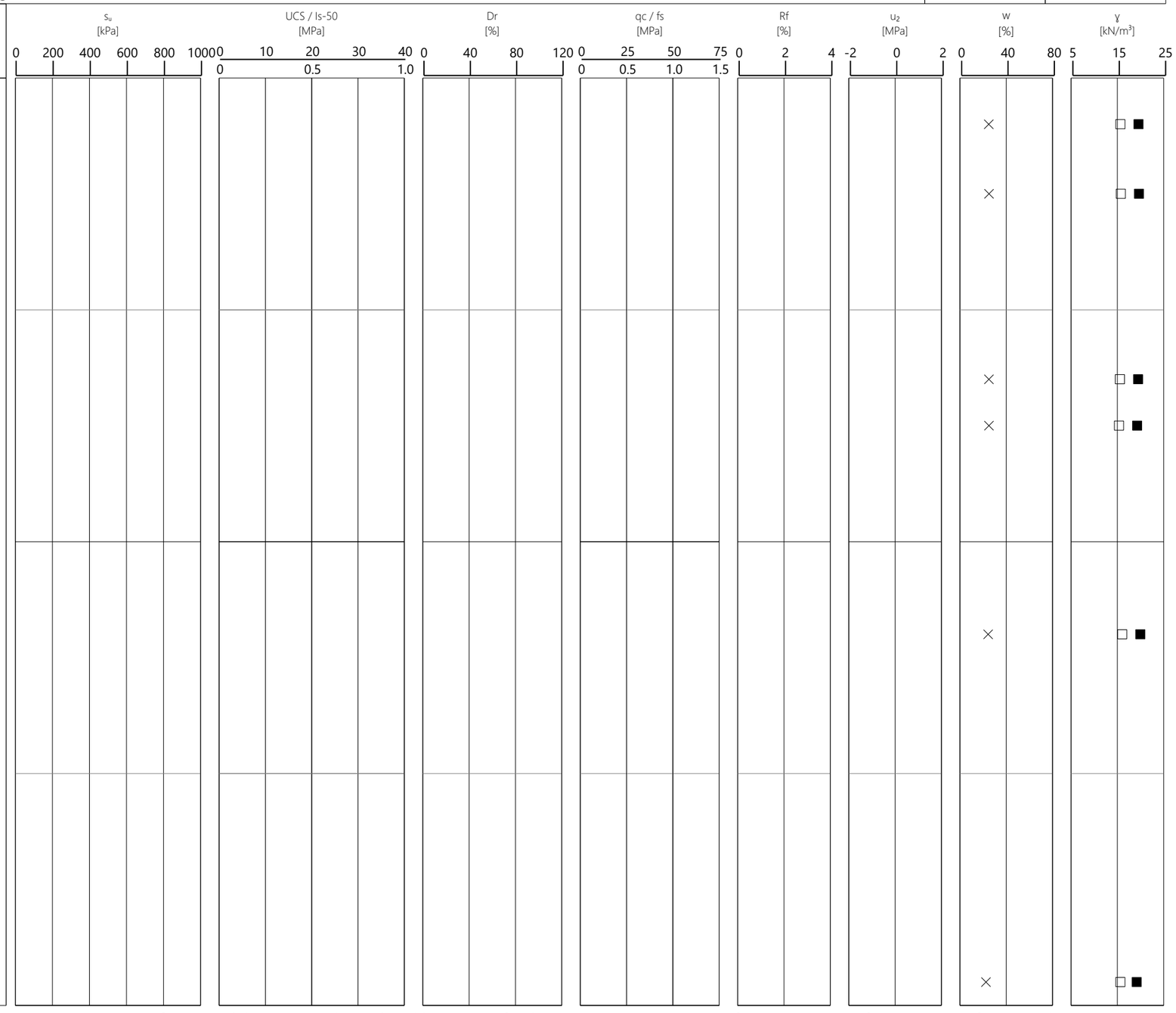
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 20 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		33.50 m to 40.70 m - Brown slightly silty SAND. Sand is fine and medium [CARDIGAN BAY FORMATION].						
	-67.0							
39.0								
	-68.0							
		39.50m to 39.80m; sand is fine.						
		39.80m to 40.43m; with frequent extremely closely to very closely spaced lenses (<50mm x 2mm) of silt.						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic			Status: PRELIM	Sheet 21 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		33.50 m to 40.70 m - Brown slightly silty SAND. Sand is fine and medium [CARDIGAN BAY FORMATION].						
	-69.0	40.43m to 40.45m; very thin bed of soft thinly laminated dark brownish grey clay with frequent silt dustings between laminae.						
		40.70 m to 43.50 m - Firm becoming stiff thinly laminated dark brownish grey CLAY with frequent becoming rare silt dustings between laminae. [CARDIGAN BAY FORMATION]. 40.70m to 41.00m; sandy silty clay. Sand is fine.						
41.0								
	-70.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

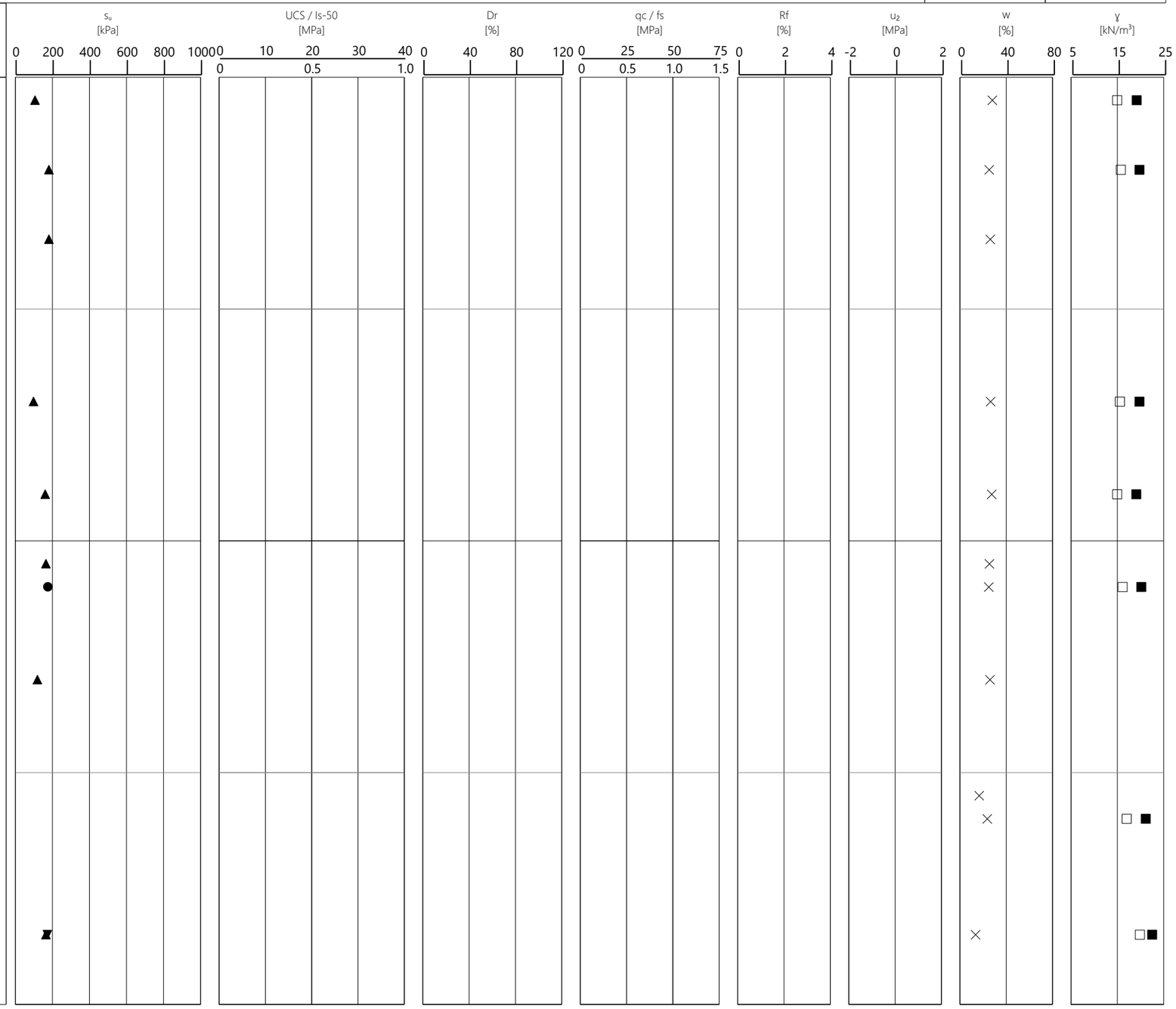
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 22 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-71.0	40.70 m to 43.50 m - Firm becoming stiff thinly laminated dark brownish grey CLAY with frequent becoming rare silt dustings between laminae. [CARDIGAN BAY FORMATION]. 42.00m to 42.50m; occasional silt dustings. 42.50m to 43.50m; rare silt dustings.						
43.0	-72.0	43.22m to 43.50m; sandy. Sand is fine rarely medium and coarse.						
		43.50 m to 47.90 m - Stiff very dark grey slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine. Gravel is angular to rounded fine to coarse of mixed lithologies including basalt, dolerite, psammite and quartz. Cobbles are (<75mm x 65mm x 50mm) subangular of psammite and dolerite. [CARDIGAN BAY FORMATION].						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

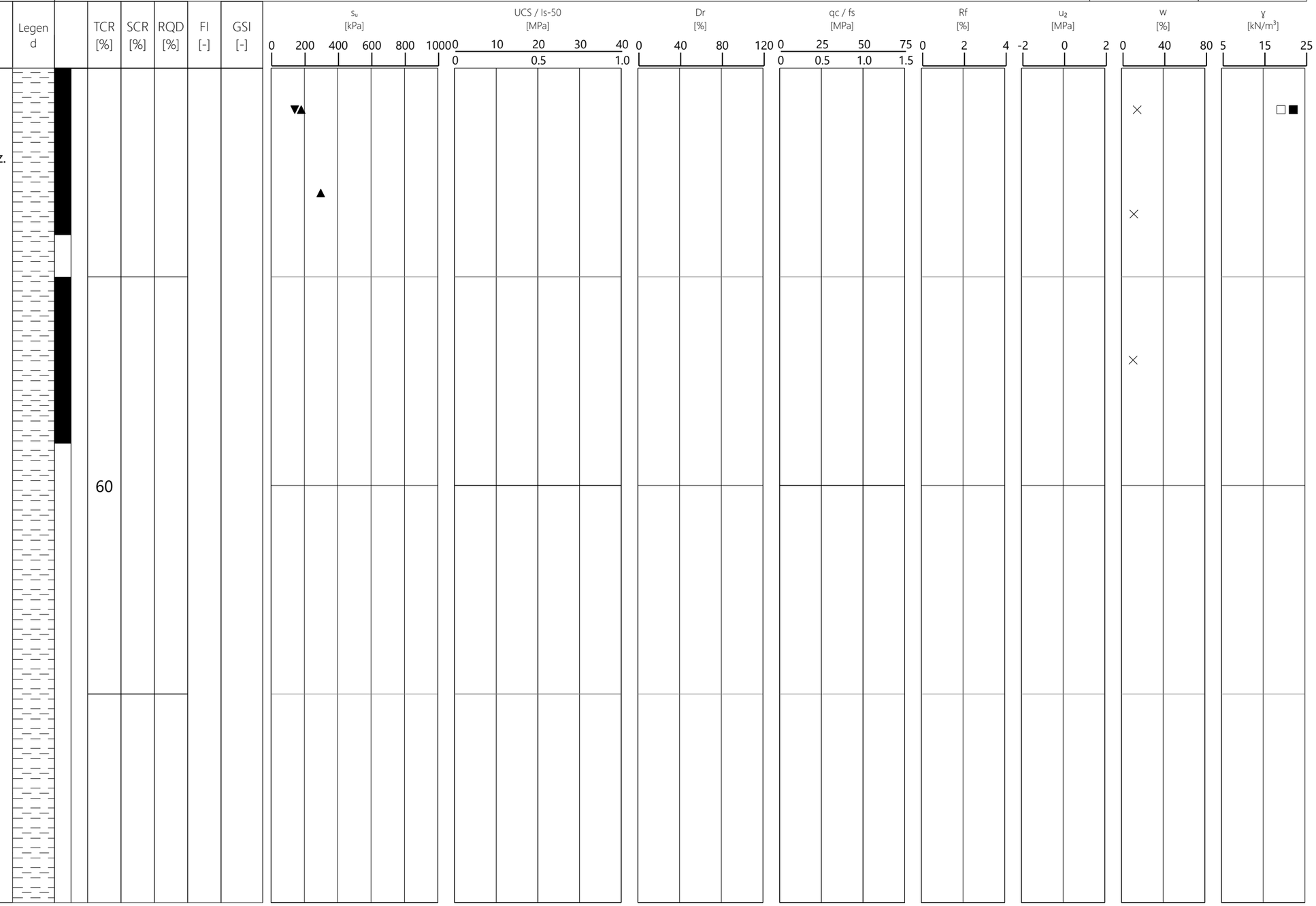
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 23 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
45.0	-73.0	43.50 m to 47.90 m - Stiff very dark grey slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine. Gravel is angular to rounded fine to coarse of mixed lithologies including basalt, dolerite, psammite and quartz. Cobbles are (<75mm x 65mm x 50mm) subangular of psammite and dolerite. [CARDIGAN BAY FORMATION].						
	-74.0	45.50m to 46.00m; assumed zone of core loss.		60				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

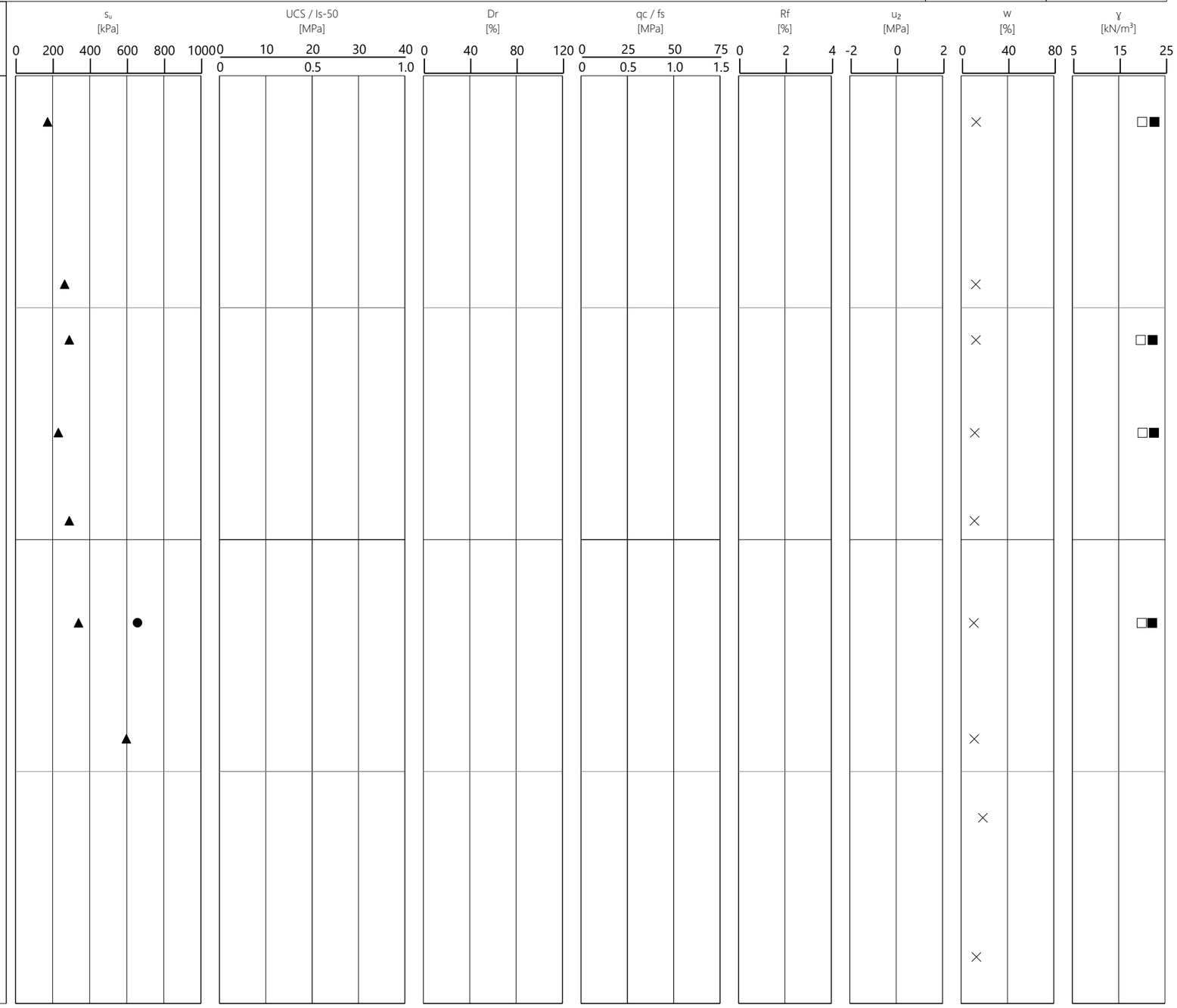
Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.363

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 24 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-75.0	43.50 m to 47.90 m - Stiff very dark grey slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine. Gravel is angular to rounded fine to coarse of mixed lithologies including basalt, dolerite, psammite and quartz. Cobbles are (<75mm x 65mm x 50mm) subangular of psammite and dolerite. [CARDIGAN BAY FORMATION].		50				
47.0				100				
	-76.0	47.80m to 47.90m; sandy.						
		47.90 m to 48.50 m - ASSUMED ZONE OF CORE LOSS						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 25 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		47.90 m to 48.50 m - ASSUMED ZONE OF CORE LOSS		40				
	-77.0							
49.0		48.50 m to 49.50 m - Brown and grey gravelly silty SAND. Sand is fine to coarse predominantly fine and medium. Gravel is subangular and subrounded fine to coarse of quartz, sandstone and basalt. [CARDIGAN BAY FORMATION].		80				
	-78.0	49.25m to 49.30m; 1 no. subangular cobble of psammite (<70mm x 60mm x 50mm). 49.30m to 49.50m; assumed zone of core loss.						
		49.50 m to 55.11 m - Very stiff dark brown slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, sandstone, basalt, and granite. Cobbles are (<70mm x 60mm x 40mm) of psammite and dolerite. [CARDIGAN BAY FORMATION].						

s_u [kPa]: 0 200 400 600 800 1000
UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0
Dr [%]: 0 40 80 120
qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5
Rf [%]: 0 2 4
u_2 [MPa]: -2 0 2
w [%]: 0 40 80
γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

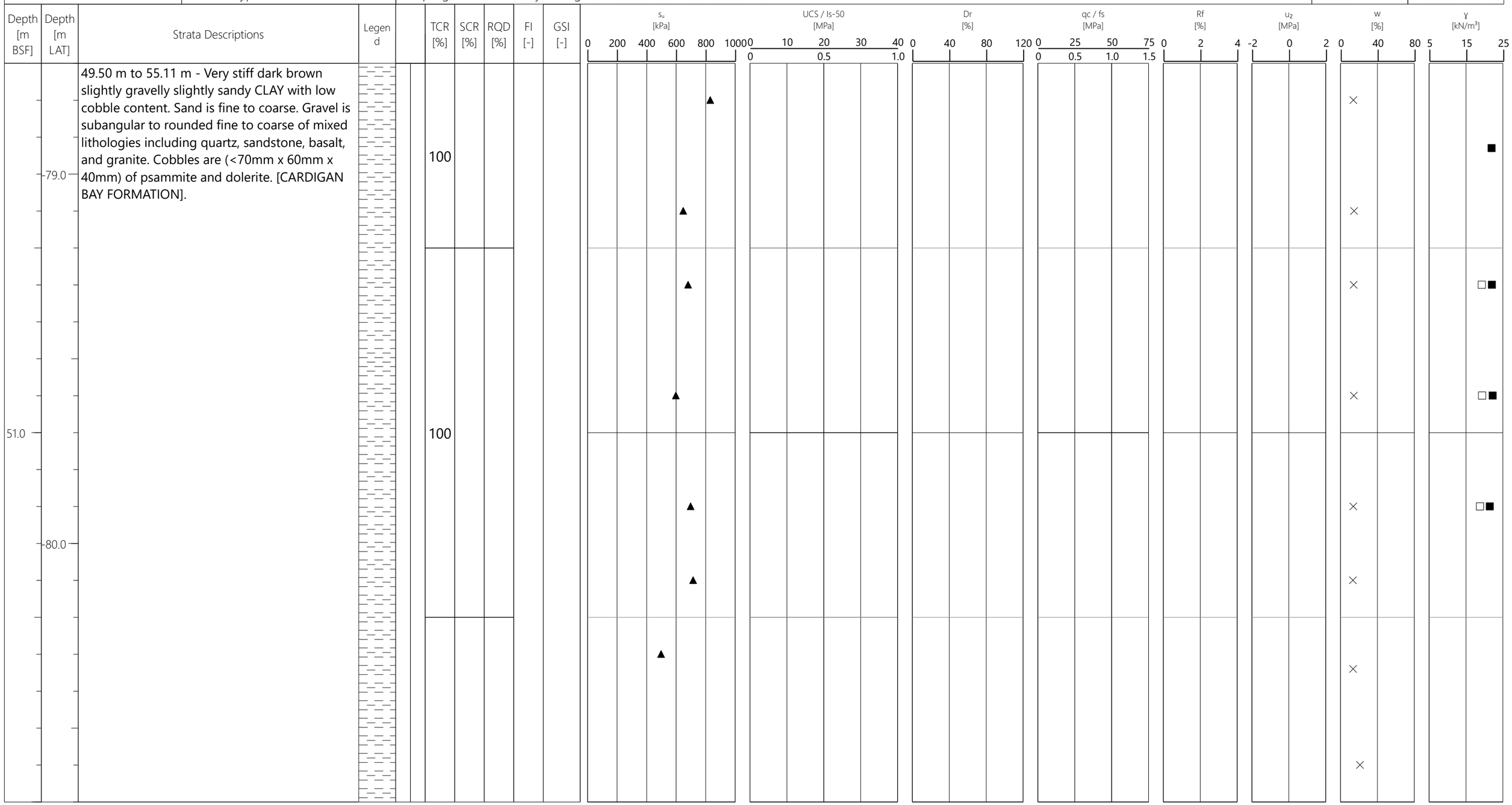
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 26 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-79.0	49.50 m to 55.11 m - Very stiff dark brown slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, sandstone, basalt, and granite. Cobbles are (<70mm x 60mm x 40mm) of psammite and dolerite. [CARDIGAN BAY FORMATION].		100				
51.0				100				
	-80.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

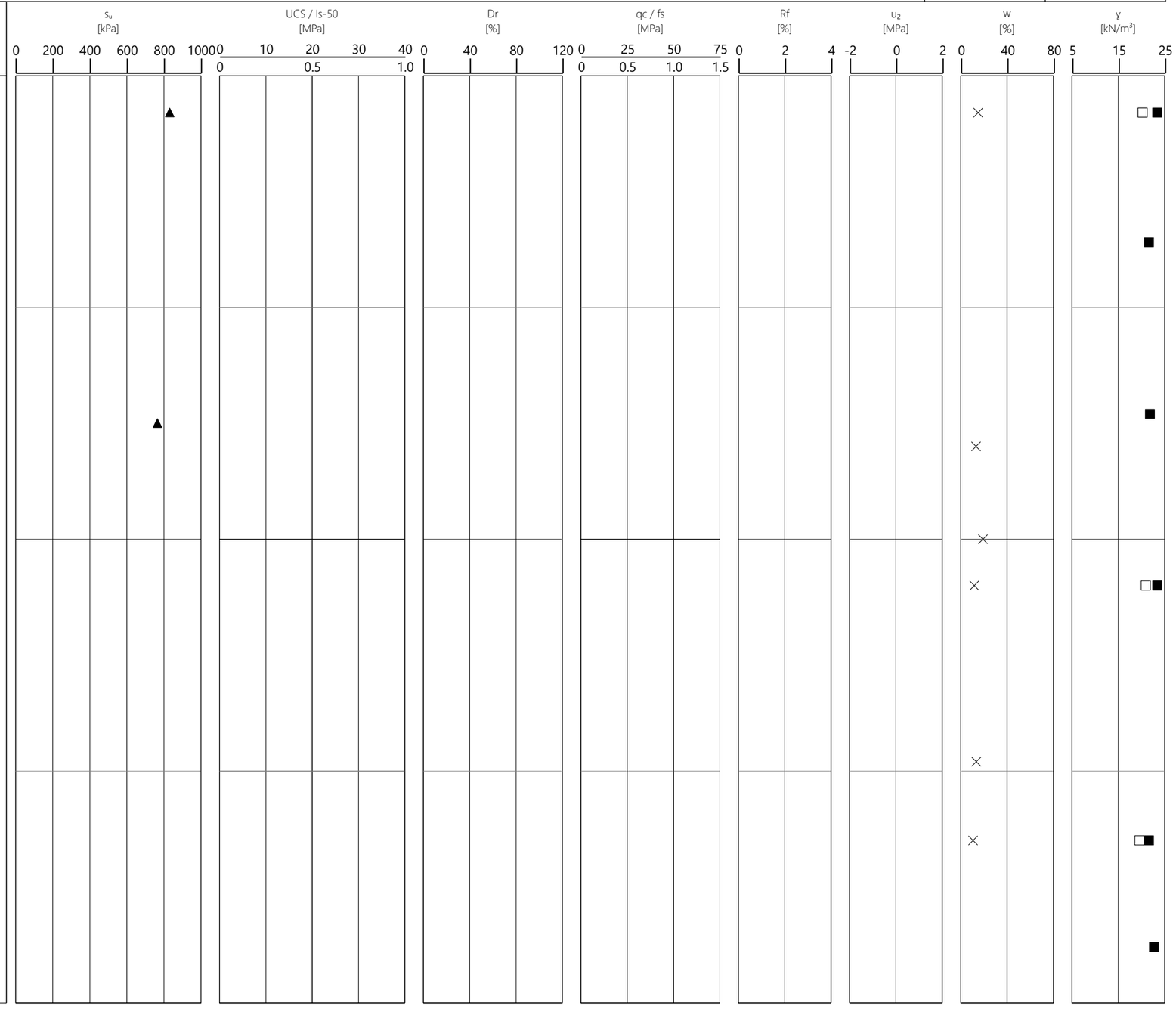
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
	Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 27 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-81.0	49.50 m to 55.11 m - Very stiff dark brown slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, sandstone, basalt, and granite. Cobbles are (<70mm x 60mm x 40mm) of psammite and dolerite. [CARDIGAN BAY FORMATION].		100				
53.0								
	-82.0			100				



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 28 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-83.0	49.50 m to 55.11 m - Very stiff dark brown slightly gravelly slightly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of mixed lithologies including quartz, sandstone, basalt, and granite. Cobbles are (<70mm x 60mm x 40mm) of psammite and dolerite. [CARDIGAN BAY FORMATION].						
55.0								
	-84.0	55.11 m to 55.38 m - Weak orangish brown TILLITE with occasional subangular and subrounded fine and medium gravel sized clasts of mixed lithologies including quartz, sandstone and basalt. Indurated till. [CARDIGAN BAY FORMATION].		73	18	18		NA
		55.38 m to 55.48 m - Recovered as soft dark grey slightly sandy CLAY. Sand is fine and medium. Residual soil of weathered mudstone. [LOWER PALAEOZOIC]						
		55.48 m to 56.39 m - Reddish brown silty fine to coarse predominantly fine and medium SAND with numerous extremely weak to weak sandstone lithorelicts (<60mm x 60mm x 40mm). Destructured sandstone. GSI = 0. [LOWER PALAEOZOIC]						
		55.60m to 56.00m; assumed zone of core loss.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- ▲ Pocket Penetrometer
- ▼ Torvane
- ● Undrained Triaxial (UU)
- ⊠ Fall Cone
- ⊗ CU Triaxial
- ■ Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- ■ Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- ⊠ Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- × Water Content

Key for Unit Weight (γ)
- ■ Wet Unit Weight
- □ Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 29 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
		55.48 m to 56.39 m - Reddish brown silty fine to coarse predominantly fine and medium SAND with numerous extremely weak to weak sandstone lithorelicts (<60mm x 60mm x 40mm). Destructured sandstone. GSI = 0. [LOWER PALAEOZOIC]						
	-85.0							
		56.39 m to 58.26 m - Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees medium to widely spaced planar rough tight to open with sand infill (<2mm). Joints are 85 degrees undulating rough open clean. GSI = 25-30. [LOWER PALAEOZOIC]		75	36	30		
		56.75m to 57.00m; assumed zone of core loss.						
	57.0							
				95	95	84	3	25-30
	-86.0							
		57.95m to 58.00m; assumed zone of core loss.						

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Plate 6.369

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID	
	Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM	Sheet 30 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-87.0	56.39 m to 58.26 m - Extremely weak thinly and medium bedded reddish brown medium grained SANDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees medium to widely spaced planar rough tight to open with sand infill (<2mm). Joints are 85 degrees undulating rough open clean. GSI = 25-30. [LOWER PALAEOZOIC] 58.00m to 58.04m; non-intact. Recovered as reddish brown angular fragments of sandstone (<50mm x 50mm x 30mm).		100	22	22		
		58.26 m to 58.88 m - Reddish brown silty SAND with frequent extremely weak sandstone lithorelicts (<60mm x 50mm x 50mm). Sand is fine to coarse predominantly fine and medium. Destructured sandstone. [LOWER PALAEOZOIC] 58.68m to 58.88m; medium bed of very stiff reddish brown sandy clay with frequent extremely weak and very weak sandstone lithorelicts (<60mm x 50mm x 50mm). Destructured sandstone.						NA
59.0		58.88 m to 60.72 m - Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees medium to widely spaced planar rough tight to open with sand infill (<2mm). GSI = 30-35. [LOWER PALAEOZOIC]		100	92	92	3	30.35
	-88.0	58.88m to 59.12m; non-intact. Recovered as fragments of extremly weak and weak reddish brown sandstone (<100mm x 70mm x 50mm) with sand. Sand is fine to coarse predominantly fine and medium.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 31 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-89.0	58.88 m to 60.72 m - Extremely weak and very weak thinly and medium bedded reddish brown medium grained SANDSTONE. Distinctly weathered. Bedding fractures are 0 to 5 degrees medium to widely spaced planar rough tight to open with sand infill (<2mm). GSI = 30-35. [LOWER PALAEOZOIC]						
61.0		60.72 m to 61.89 m - Very weak and weak thinly bedded reddish brown MUDSTONE. Partially weathered with occasional greenish grey reduction zones (<70mm x 30mm) and with rare calcite veining (<2mm x 10mm). Bedding fractures are 0 to 5 degrees closely and medium spaced planar smooth partly open to moderately wide with clay and mudstone fragments infill. Joints are 80 degrees undulating smooth partly open infilled with clay. GSI = 30-35. [LOWER PALAEOZOIC]		100	100	91	3	30-35
	-90.0	60.72m to 60.90m; extremely weak. Distinctly weathered. 60.88m to 60.90m; non intact recoverd as firm reddish brown clay.						
		61.89 m to 65.00 m - Moderately weak and medium strong thinly and medium bedded						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50):
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w):
- Water Content

Key for Unit Weight (γ):
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 32 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-91.0	61.89 m to 65.00 m - Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE. Partially weathered with rare greenish grey reduction zones. Bedding fractures are 0 to 5 degrees medium and widely spaced planar smooth and rough open to moderately wide with clay (<3mm) infill occasionally clean. Joints are 85 and 90 degrees undulating smooth and rough partly open and open infilled with clay and clay smear (<2mm). GSI = 30-35. [LOWER PALAEOZOIC]		100	100	100		
		62.20m to 62.24m; soft greenish grey clay fracture infill.						
63.0							4	30-35
	-92.0							

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40; 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75; 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

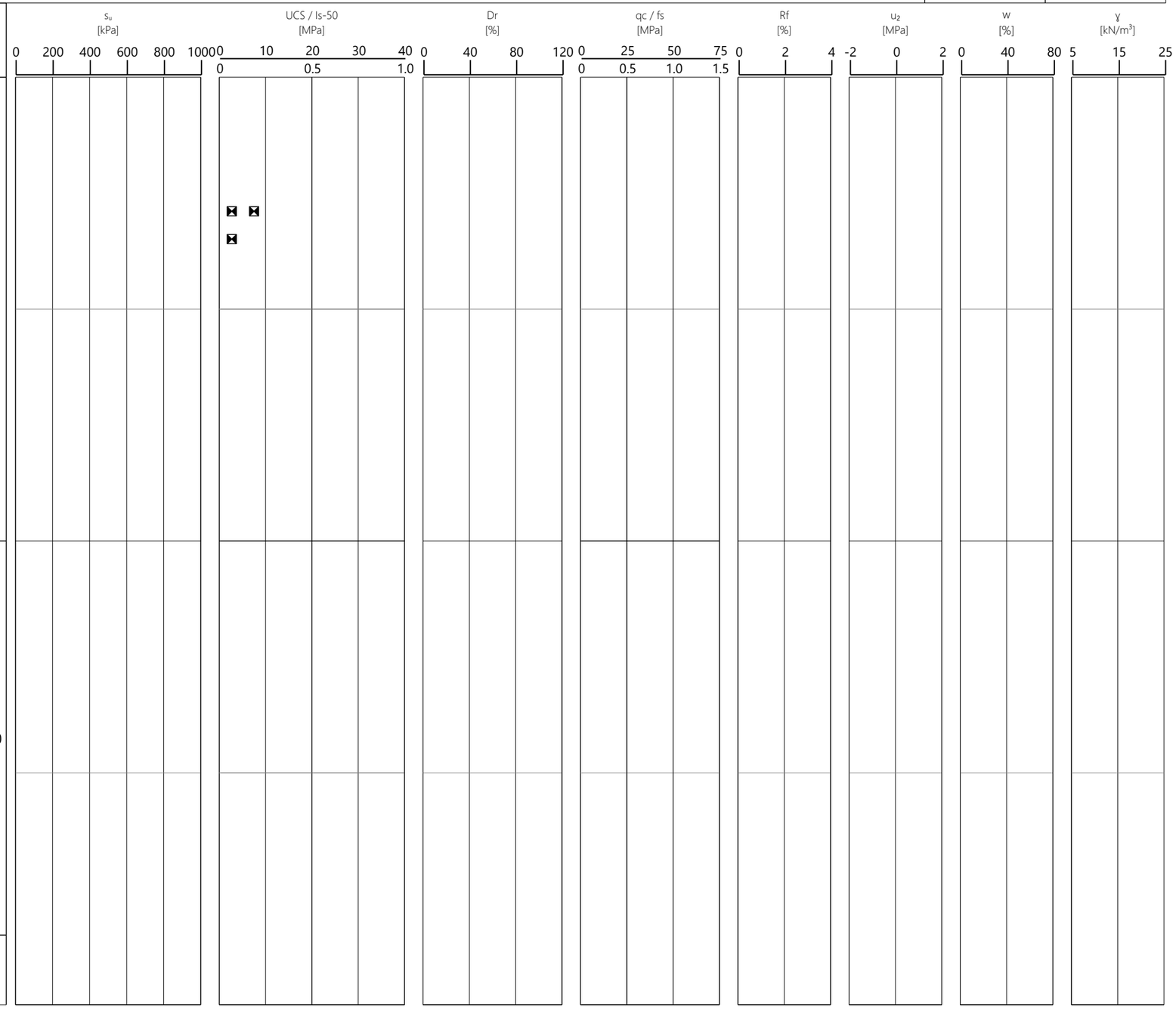
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022					Location ID
Client	Sure Partners Ltd			Final Depth [m BSL]	69.50	**BH28**
Fugro Reference	F186642			Seabed Level [m LAT]	-28.70	
Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum	UTM Zone 30	Date	12 06 2022 to 15 06 2022	
Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic					Status: PRELIM / Sheet 33 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-93.0	61.89 m to 65.00 m - Moderately weak and medium strong thinly and medium bedded dark reddish brown medium grained SANDSTONE. Partially weathered with rare greenish grey reduction zones. Bedding fractures are 0 to 5 degrees medium and widely spaced planar smooth and rough open to moderately wide with clay (<3mm) infill occasionally clean. Joints are 85 and 90 degrees undulating smooth and rough partly open and open infilled with clay and clay smear (<2mm). GSI = 30-35. [LOWER PALAEOZOIC]		100	100	97		
65.0	-94.0	65.00 m to 65.85 m - Very weak brecciated brownish red medium grained SANDSTONE. Distinctly weathered. Fractures are randomly oriented extremely closely to very closely spaced planar and undulating smooth partly open to wide infilled with slightly sandy clay (<20mm), forming a framework of angular polyhedral sandstone fragments (<100mm x 90mm x 70mm) within a clay lattice. GSI = 15-20. [LOWER PALAEOZOIC]		100	50			15-20
		65.72m to 65.93m; inclined 70 degree contact between brecciated sandstone and possible fault gouge material.				0		
		65.85 m to 66.55 m - Recovered as very soft brownish red slightly sandy gravelly CLAY with moderate cobble content. Sand is fine and						



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

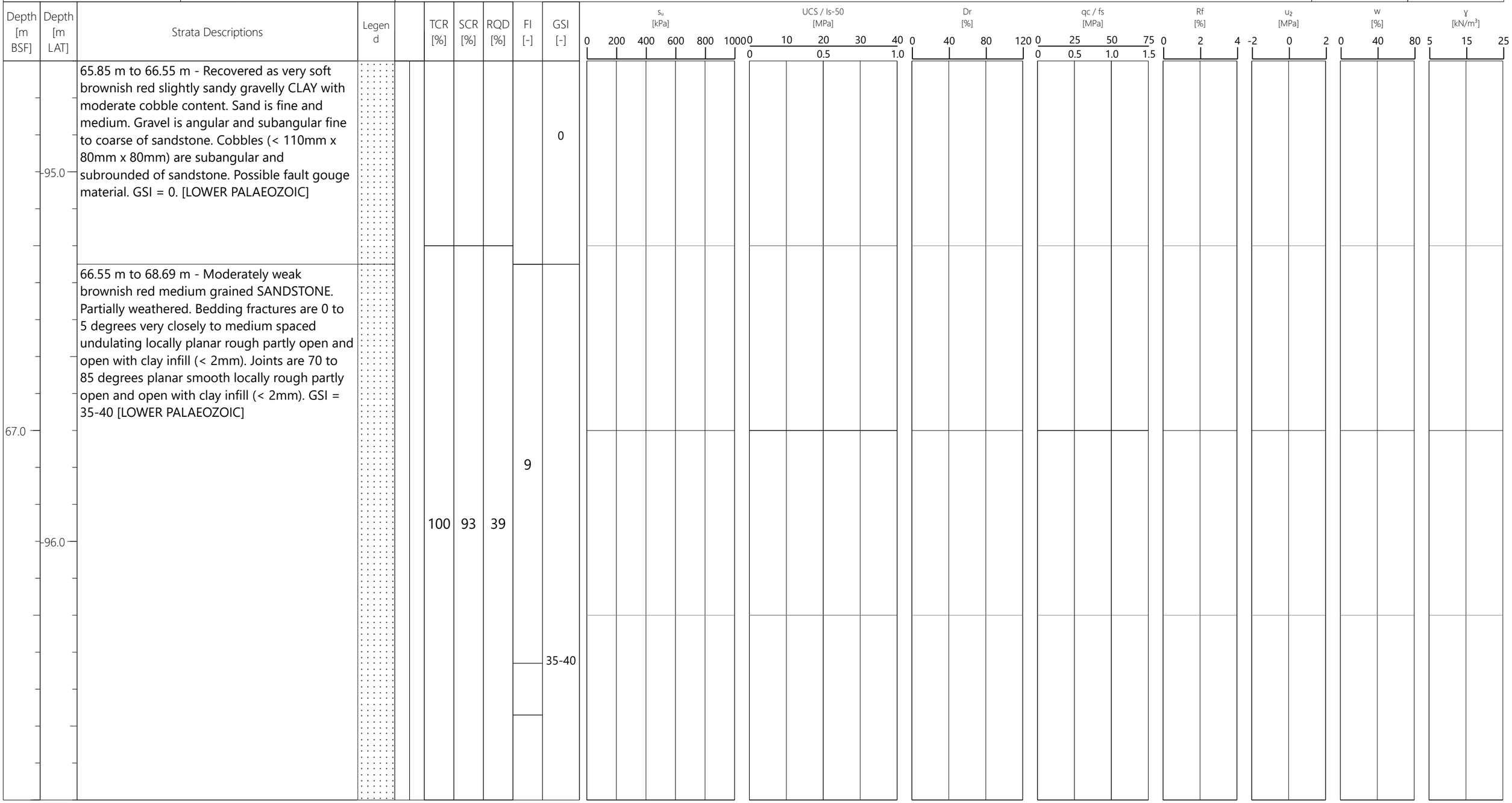
Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 34 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-95.0	65.85 m to 66.55 m - Recovered as very soft brownish red slightly sandy gravelly CLAY with moderate cobble content. Sand is fine and medium. Gravel is angular and subangular fine to coarse of sandstone. Cobbles (< 110mm x 80mm x 80mm) are subangular and subrounded of sandstone. Possible fault gouge material. GSI = 0. [LOWER PALAEOZOIC]						0
67.0		66.55 m to 68.69 m - Moderately weak brownish red medium grained SANDSTONE. Partially weathered. Bedding fractures are 0 to 5 degrees very closely to medium spaced undulating locally planar rough partly open and open with clay infill (< 2mm). Joints are 70 to 85 degrees planar smooth locally rough partly open and open with clay infill (< 2mm). GSI = 35-40 [LOWER PALAEOZOIC]		100	93	39	9	35-40
	-96.0							



Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022				Location ID
	Client	Sure Partners Ltd		Final Depth [m BSL]	69.50	**BH28**
	Fugro Reference	F186642		Seabed Level [m LAT]	-28.70	
	Coordinates	302479.91 mE 5863159.00 mN	Coordinate Datum / UTM Zone 30	Date	12 06 2022 to 15 06 2022	
	Location Type	Sampling, CPT and Rotary Coring with Natural Gamma and Seismic				Status: PRELIM / Sheet 35 of 35

Depth [m BSF]	Depth [m LAT]	Strata Descriptions	Legend	TCR [%]	SCR [%]	RQD [%]	FI [-]	GSI [-]
	-97.0	66.55 m to 68.69 m - Moderately weak brownish red medium grained SANDSTONE. Partially weathered. Bedding fractures are 0 to 5 degrees very closely to medium spaced undulating locally planar rough partly open and open with clay infill (< 2mm). Joints are 70 to 85 degrees planar smooth locally rough partly open and open with clay infill (< 2mm). GSI = 35-40 [LOWER PALAEOZOIC]					11	
69.0		68.69 m to 69.50 m - Moderately weak thinly cross laminated dark reddish grey medium grained SANDSTONE. Partially weathered. Bedding fractures are 5 to 10 degrees very closely to medium spaced undulating locally planar rough partly open with clay infill (< 1mm). Joints are 30 to 45 degrees very closely to medium spaced undulating smooth partly open and open with clay infill (< 2mm). Joints are 50 to 60 degrees closely and medium spaced undulating locally planar smooth open and moderately wide with clay locally clay and fine sand infill (< 5mm). GSI = 35-40. [LOWER PALAEOZOIC]					12	
	-98.0	69.29m to 69.46m; Annealed highly fractured zone. Fractured are randomly oriented extremely closely and closely spaced.						

s_u [kPa]: 0 200 400 600 800 1000

UCS / Is-50 [MPa]: 0 10 20 30 40 / 0 0.5 1.0

Dr [%]: 0 40 80 120

qc / fs [MPa]: 0 25 50 75 / 0 0.5 1.0 1.5

Rf [%]: 0 2 4

u_2 [MPa]: -2 0 2

w [%]: 0 40 80

γ [kN/m³]: 5 15 25

Sample / Testing:
- Push sample recovery
- Cone penetration test

Core Details:
- TCR Total Core Recovery
- SCR Solid Core Recovery
- RQD Rock Quality Designation
- FI Fracture Index
- GSI Geological Strength Index

Key for Undrained Shear Strength (s_u):
- Pocket Penetrometer
- Torvane
- Undrained Triaxial (UU)
- Fall Cone
- CU Triaxial
- Direct Simple Shear

Note: Empty symbols refer to tests perfomred on remoulded samples.

Key for Uniaxial Compressive Strength (UCS):
- Unconfimed Compressive Strength

Key for Point Load Index Strength (Is50)
- Point Load Index

Key for Cone Resistance (qc):
- Cone Resistance

Key for Sleeve Friction (fs):
- Sleeve Friction

Key for Friction Ratio (Rf):

Key for Pore Water Pressure (u2):
- Pore Water Pressure

Key for Water Content (w)
- Water Content

Key for Unit Weight (γ)
- Wet Unit Weight
- Dry Unit Weight

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 1 of 35
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									1		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 2 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									3		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 3 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									5		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 4 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									7		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 5 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									9		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 6 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									11		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 7 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 8 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									15		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 9 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									17		

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 10 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									19		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 11 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									21		

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 12 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									23		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 13 of 35
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									25		

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 14 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									27		

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 15 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									29		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 16 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									31		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 17 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									33		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 18 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									35		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 19 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									37		

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
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	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 20 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									39		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 21 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									41		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
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	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 22 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									43		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 23 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									45		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 24 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									47		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022		Location ID **BH28**
	Client	Sure Partners Ltd		
	Fugro Reference	F186642		
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum) -28.70	Sheet 25 of 35
	Hole Type	Discontinuity Log		Status Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									49		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 26 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
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Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 27 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									53		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 28 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									55		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 29 of 35
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
56.69 - 56.70	BF	0		O	Pl	Ro		Sand infill (<2mm).		0 °	
57.00 - 57.10	J	85		O	Un	Ro			57	85 °	
57.10 - 57.11	BF	0		O	Pl	Ro		Sand infill (<2mm).		0 °	
57.41 - 57.43	BF	5		T	Pl	Ro				5 °	
57.78 - 57.79	BF	0		O	Pl	Ro		Sand infill (<2mm).		0 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 30 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
									59		
59.22 - 59.24	FR	0								0 °	
59.38 - 59.39	BF	0		PO	Pl	Ro		Sand infill (<1mm).		0 °	
59.50 - 59.52	FR	0								0 °	
59.67 - 59.68	BF	5		O	Pl	Ro		Sand infill (<2mm).		5 °	

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
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Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 31 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
60.62 - 60.63	BF	5		T	Pl	Ro				5 °	
60.87 - 60.88	BF	0		O	Pl	Sm		Clay infill (< 2mm).		0 °	
60.90 - 60.98	J	80		PO	Un	Sm		Clay infill (<1mm).		80 °	
									61		
61.27 - 61.31	BF	5		MW	Pl	Sm		Mudstone fragments (<40 x 30 x 30mm).		5 °	
61.89 - 61.91	BF	5		PO	Pl	Sm		Clay infill (<1mm).		5 °	
61.89 - 62.00	J	90		O	Pl	Sm		Clay infill (<1mm).		90 °	
61.90 - 61.94	BF	5		O	Pl	Sm		Clay infill (<1mm).		5 °	

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
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	Fugro Reference	F186642			
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 32 of 35
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
62.20 - 62.24	BF	5		MW	Pl	Sm		Greenish grey clay infill (<3mm).		5 °	
62.51 - 62.53	BF	5		PO	Pl	Ro				5 °	
									63		
63.11 - 63.12	BF	0		O	Pl	Sm		Clay infill (<1mm).		0 °	
63.84 - 63.85	BF	0		O	Pl	Ro		Clay infill (< 2mm).		0 °	

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- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

FUGRO	Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
	Client	Sure Partners Ltd			
	Fugro Reference	F186642			
	Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 33 of 35
	Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
64.07 - 64.09	BF	5		O	Pl	Sm		Clay infill (<1mm).		5 °	
64.27 - 64.29	BF	5		MW	Pl	Sm				5 °	
64.44 - 64.46	BF	5		PO	Pl	Sm				5 °	
64.44 - 64.48	J	85		O	Un	Sm		Clay infill (< 2mm).		85 °	
64.74 - 64.82	J	90		PO	Un	Sm		Clay smear.		90 °	
64.86 - 64.90	J	90		O	Un	Ro		Clay infill (< 2mm).		90 °	
65.00 - 65.85	FR		20	W	Un	Sm		Highly fractured zone. Extremely closely to very closely spaced randomly oriented fractures. Possible fault-adjacent disturbed zone.	65		

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID
Client	Sure Partners Ltd			**BH28**
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 34 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
66.63 - 66.70	J	60		O	Pl	Sm		Clay infill (< 2mm). Terminating against bedding fracture.		60 °	
66.70	BF	0		PO	Pl	Sm		Clay infill (< 1mm).		0 °	
66.70 - 66.78	J	70		O	Pl	Sm		Clay infill (< 2mm).		70 °	
66.78	BF	5		O	Un	Sm		Clay infill (< 2mm).		5 °	
66.85	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
66.86 - 66.96	J	70		O	Sp	Sm		Clay infill (< 2mm).		70 °	
									67		
67.17	BF	0		PO	Un	Ro		Clay infill (< 1mm).		0 °	
67.20 - 67.21	BF	5		PO	Pl	Ro		Clay infill (< 1mm).		5 °	
67.43 - 67.44	BF	5		PO	Un	Ro		Clay infill (< 1mm).		5 °	
67.55	BF	0		PO	Un	Ro		Clay infill (< 1mm).		0 °	
67.63 - 67.77	FR							Highly fractured zone. Fractures are subhorizontal 0 to 5 degrees extremely to very closely spaced partially open undulating rough with clay infill (<1mm). Fractures are inclined 60 degrees open planar smooth with clay infill (< 2mm).			
67.90	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
67.90 - 68.00	J	85		W	Pl	Sm		Top side missing.		85 °	
67.94 - 67.95	BF	5		PO	Pl	Ro		Clay infill (< 1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 35 of 35
Hole Type	Discontinuity Log			Status: Preliminary

Discontinuity Details									Discontinuity Information		
Depth (m)	Type	Dip (°)	Aperture (mm)	Aperture Observation	Medium Scale Roughness	Small Scale Roughness	Set Reference	Remarks	Depth (m)	Discontinuity Log	Legend
68.12	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
68.17	BF	0		PO	Un	Ro		Clay infill (< 1mm).		0 °	
68.25	BF	0		PO	Pl	Ro		Clay infill (< 1mm).		0 °	
68.27	BF	5		PO	Un	Ro		Clay (<1mm).		5 °	
68.29 - 68.34	BF	5		PO	Un	Ro		Clay (<1mm).		5 °	
68.51 - 68.69	FR							Highly fractured zone. Fractures are subhorizontal 0 to 5 degrees extrtremely and very closely spaced open to wide undulating rough with clay infill (< 20mm). Fractures are inclined 40 degrees very closely spaced partially open planar rough with clay infill (< 1mm). Fractures are inclined 60 to 75 degrees partly open and open undulating smooth with clay infill (< 2mm).			
68.69 - 68.73	J	60		O	Pl	Sm		Clay infill (< 2mm).		60 °	
68.72 - 68.78	J	45		PO	Pl	Sm		Clay infill (< 1mm).		45 °	
68.75 - 68.78	J	30		PO	Pl	Sm		Clay infill (< 1mm).		30 °	
68.76 - 68.90	J	30		PO	Pl	Ro		Clay (< 1mm).		30 °	
68.98	BF	10		O	Un	Ro		Clay infill (< 2mm).		10 °	
69.00	BF	10		PO	Un	Ro		Clay infill (< 1mm).	69	10 °	
69.06 - 69.13	J	60		MW	Un	Sm		Clay and fine sand infill (< 5mm).		60 °	
69.19 - 69.28	J	50		MW	Un	Sm		Clay infill (< 5mm).		50 °	
69.28 - 69.29	BF	5		PO	Sp	Ro		Clay infill (< 1mm).		5 °	
69.46 - 69.47	BF	5		PO	Sp	Ro		Clay infill (1mm).		5 °	

Notes

- Abbreviations and results data defined on 'Notes on Exploratory Position Records'

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID
Client	Sure Partners Ltd			**BH28**
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 1 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks
0.00	48.50	RORC	12 06 2022	14 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	AC, CH, KH, JG	TC/FS	1. Borehole was carried out overwater from the DEME Neptune jack-up platform. 2. Cantilever to Mud 43.60m; Cantilever to LAT = 15.80m; LAT to Mud = 27.80m 3. All depths refer to depth below seabed level.
48.50	69.50	RC	14 06 2022	15 06 2022	Comacchio MCS1200 : 1814	Geobor-S	PCD	KH, JG	TC/FS	

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather
12 06 2022	12:45	0.00			
12 06 2022	19:00	2.95	2.95		
12 06 2022	20:25	3.00	3.00		
13 06 2022	06:45	13.50	13.50		
13 06 2022	19:00	21.50	21.00		
14 06 2022	07:00	36.50	36.50		
14 06 2022	19:00	48.50	48.50		
15 06 2022	07:00	69.50	69.50		

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)
2.95	178	2.00	178
69.50	146	69.50	146

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
0.00	1.00	W	0		00:11
1.00	2.00	W	0		00:12
2.00	2.95	W	0		00:13
2.50	3.00	PB	100	Grey	00:12
3.00	3.50	PB	100	Grey	00:02
3.50	4.00	PB	100	Grey	00:09
4.00	4.50	PB	100	Grey	00:08
4.50	5.00	PB	100	Grey	00:09
5.00	5.50	PB	100	Grey	00:12
5.50	6.00	PB	100	Grey	00:12
6.00	6.50	PB	100	Grey	00:10
6.50	7.50	PB	100	Grey	00:10
7.50	8.50	PB	0		00:11
8.50	9.50	PB	0		00:09
9.50	10.50	PB	0		00:14
10.50	11.50	PB	0		00:15
11.50	12.50	PB	0		00:18
12.50	13.50	PB	0		00:16
13.50	14.00	PB	0		00:15
14.00	14.50	PB	0		00:14
14.50	15.00	PB	0		00:14
15.00	15.50	PB	0		
15.50	16.00	PB	0		
16.00	16.50	PB	0		
16.50	17.00	PB	0		
17.00	17.50	PB	0		
17.50	18.00	PB	0		
18.00	18.50	PB	0		
18.50	19.00	PB	0		
19.00	19.50	PB	0		
19.50	20.00	PB	0		
20.00	20.50	PB	0		
20.50	21.00	PB	0		
21.00	21.50	PB	0		
21.50	22.50	PB	0		
22.50	23.50	PB	0		
23.50	24.50	PB	0		
24.50	25.50	PB	0		
25.50	26.50	PB	0		
26.50	27.50	PB	0		
27.50	28.50	PB	0		
28.50	29.50	PB	0		
29.50	30.50	PB	0		
30.50	31.50	PB	0		
31.50	32.50	PB	0		
32.50	33.50	PB	0		
33.50	34.50	PB	0		
34.50	35.00	PB	0		
35.00	35.50	PB	0		
35.50	36.00	PB	0		
36.00	36.50	PB	0		
36.50	37.00	PB	0		
37.00	37.50	PB	0		
37.50	38.00	PB	0		
38.00	38.50	PB	0		
38.50	39.00	PB	0		
39.00	39.50	PB	0		
39.50	40.00	PB	0		
40.00	40.50	PB	0		
40.50	41.00	PB	0		
41.00	41.50	PB	0		
41.50	42.00	PB	0		
42.00	42.50	PB	0		
42.50	43.50	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)
29.50	30.50	102
30.50	31.50	102
31.50	32.50	102
32.50	33.50	102
33.50	34.50	102
34.00	34.50	
44.50	45.50	
45.50	46.50	
46.50	47.50	
47.50	48.50	
48.50	49.50	102
49.50	50.50	102
50.50	51.50	102
51.50	53.00	102
53.00	54.50	102
54.50	56.00	102
56.00	57.00	102
57.00	58.00	102
58.00	59.00	102
59.00	60.50	102
60.50	62.00	102
62.00	63.50	102
63.50	65.00	102
65.00	66.50	102
66.50	68.00	102
68.00	69.50	102

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date
0.00	69.50	Arisings	15 06 2022

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

Contract Name	Arklow Bank Wind Park Geotechnical Borehole Survey 2022			Location ID **BH28**
Client	Sure Partners Ltd			
Fugro Reference	F186642			
Coordinates (m)	E302479.91 N5863159.00	Ground Elevation (m Datum)	-28.70	Sheet 2 of 2
Hole Type	Rotary Coring			Status: Preliminary

Equipment

Depth From (m)	Depth To (m)	Hole Type	Date From	Date To	Equipment	Core Barrel	Core Bit	Drilling Crew	Logged By	Remarks

Progress

Date (dd/mm/yyyy)	Time (hh:mm)	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Weather

Hole and Casing

Depth To (m)	Hole Diameter (mm)	Depth To (m)	Casing Diameter (mm)

Chiselling / Slow Progress

Depth From (m)	Depth To (m)	Duration (hh:mm)	Tool / Remark

Water Strike

Strike At (m)	Rise To (m)	Time Elapsed (mins)	Casing Depth (m)	Depth Sealed (m)

Water Added

Depth From (m)	Depth To (m)

Rotary Details

Depth From (m)	Depth To (m)	Flush Type	Flush Return (%)	Flush Colour	Run Time (hh:mm)
43.50	44.50	PB	0		
44.50	45.50	PB	0		
45.50	46.50	PB	0		
46.50	47.50	PB	0		
47.50	48.50	PB	0		
48.50	49.50	PB	0		
49.50	50.50	PB	0		
50.50	51.50	PB	0		
51.50	53.00	PB	0		
53.00	54.50	PB	0		
54.50	56.00	PB	0		
56.00	57.00	PB	0		
57.00	58.00	PB	0		
58.00	59.00	PB	0		
59.00	60.50	PB	0		
60.50	62.00	PB	0		
62.00	63.50	PB	0		
63.50	65.00	PB	0		
65.00	66.50	PB	0		
66.50	68.00	PB	0		
68.00	69.50	PB	0		

Core Details

Depth From (m)	Depth To (m)	Diameter (mm)

Water Strike Remarks

Water level is maintained at or above seabed level so water strikes cannot be recorded.

General Remarks

Installation

Type	Tip Depth / Distance (m)	Response Zone Top (m)	Response Zone Base (m)	Installation Date

Pipe

ID	Top Depth (m)	Base Depth (m)	Diameter (mm)	Type

Backfill

Depth From (m)	Depth To (m)	Backfill Material	Date

Notes

- Abbreviations and results data defined in 'Exploratory Location Records Keysheets'

Checked By	JD	Elevation Datum	LAT	Grid Coordinate System	UTM Zone 30
Template: FGSL/HBSI/FGSL BH Summary.hbt/Config Fugro Rev5/26/06/2019/TS+AW				Print Date	01 09 2022

7. Digital Data Deliverables and Previous Reports

Title	Plate No.
NO PLATES – INTENTIONALLY LEFT BLANK	

8. Log of Activities

Title	Plate No.
Signed Daily Progress Reports – Referenced by date	8.1 to 8.278

DAILY PROGRESS REPORT

SSE Ireland Arklow Bank Nearshore SI

Aran 250

Project No.:	186642	**Report No.:**	1	**Date:**	20/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	1
Environmental Incident	0	/	0
Shift Handover Talk	1	/	1
Permit to Work	0	/	0
Mob Induction	13	/	13
HOC Cards	1	/	1
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	0
Daily Safety Sweep	0	/	0
Shift Task Briefing	1	/	1
Vessel Induction	10	/	10
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

No incidents
Completion of site inductions for all Fugro crew
Sign onto LP001 and MS001
COVID Self Declarations completed
Completion of barge inductions for all ON-signers

Activities performed these 24 hours

Arrival of Neptune alongside Northern Arm berth
Bunkering of Neptune from fuel barge during preload/jacking operations
Delivery of equipment on quayside - offload via port forklift
Access to Neptune for Fugro crew from approx 1730
Barge induction for vessel ON-signers
Offloading of cantilever and vibrohammer equipment using crane

Planned Work for Next 24 Hours

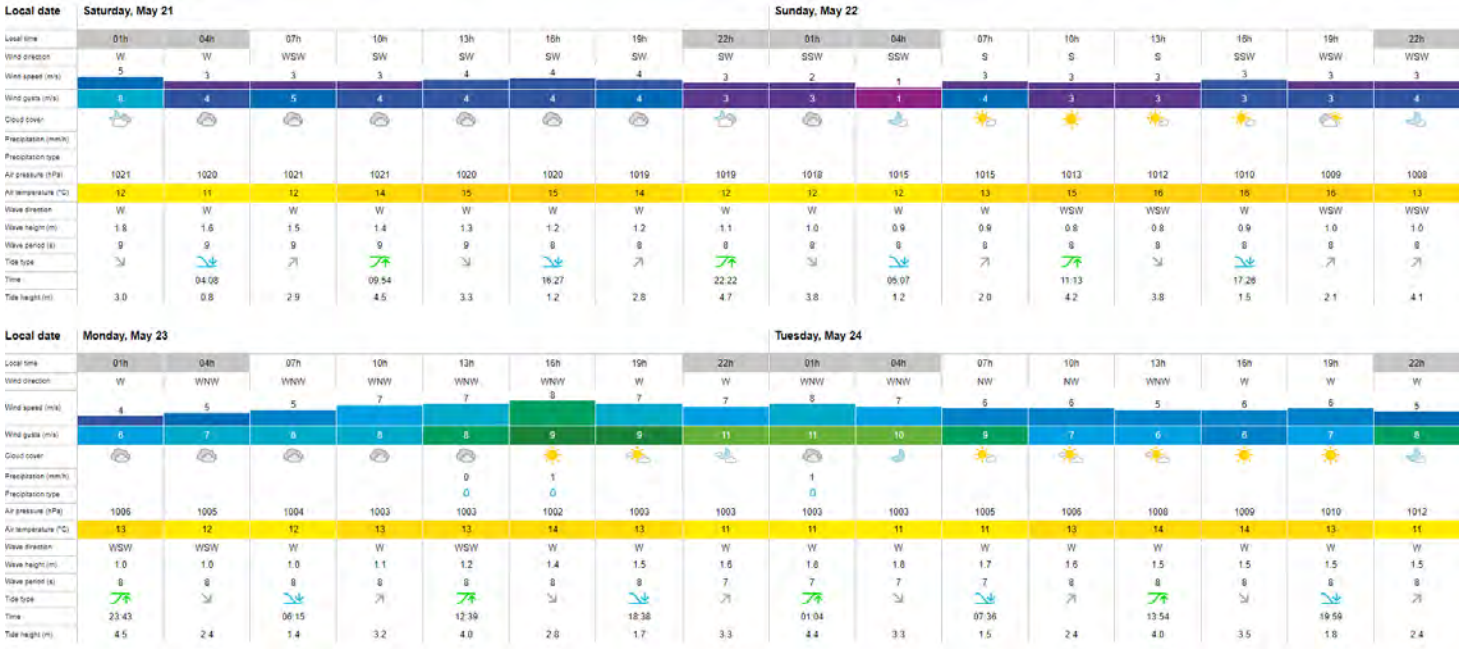
Hot works permit application 0830 from port
ON-hire survey with Neville Jayant
Commencement of seafastening installation
Deliveries of further equipment to port
Onloading of equipment to Neptune

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments

48 Hours Forecast

Forecast for Pendennis, Falmouth



Summary of Events

Begin	End	Duration	Type	Description
00:00	08:00	08:00	Neptune arrival to Falmouth	No operations - awaiting arrival of Neptune in Falmouth, UK
08:00	10:25	02:25	Neptune arrival to Falmouth	Mobilisation crew on site at Norther Arm mob site / Acceptance and offload of project equipment to quay
10:25	13:00	02:35	Neptune arrival to Falmouth	Neptune berthed at Northern Arm / Commence preload operations / Shoreside crew continue offload of wagons
13:00	16:45	03:45	Neptune arrival to Falmouth	Bunkering of fuel from Whitstar fuel vessel / Continue with deliveries to shoreside site
16:45	17:35	00:50	Neptune arrival to Falmouth	Completion of bunkering operations / Neptune jacks up / Release of crane from crutch / Installation of gangway to quay
17:35	19:00	01:25	Mobilisation	Fugro ON-signers crew board Neptune / ISPS and COVID checks (verification of negative PCR result and LFT taken) / Barge induction for ON-signers / TBT on lifting operations / Unload vibrohammer, vibrohammer HPU and cantilever frame to quay
19:00	20:00	01:00	Mobilisation	ON-signers allocated cabins and meal time
20:00	20:30	00:30	Mobilisation	General briefing in mess with ON-signers and vessel Officers
20:30	24:00	03:30	Mobilisation	Limited nightshift operations due to most crew working dayshift

Activity Summary

Activity	Today	/	To Date	Progress
Neptune arrival to Falmouth	17:35	/	17:35	73.26%
Mobilisation	6:25	/	6:25	26.74%
Total	24:00	/	24:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	0.27	0.27	Days	3.86%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.10 - Crew change standby	DR	0.00	0.00	0.00	Days	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	Days	0.00%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Nights)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduijn	Client Rep (days)	6
Liam Whittles	SPL Representative	6
Tomasz Michalowski	Surveyor	6
Ryan Patterson	Surveyor	6
James Winters	Metocean Engineer	6
Max Adu-Boafo	Metocean Engineer	6
Richard Kirby	HSE Manager (Mob days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	5
Jack Green	Assistant Driller (Nights)	5
Nick McDonnell	Client Rep (nights)	5

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	3	17	/	17
Fugro	14	130	/	130
Total	17	147	/	147

Lost & Damaged

No equipment lost or damaged

Deliverables

No deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Mobilisation commencement once Fugro had access to Neptune

Client Representative Comments

Fugro Representative	Client Representative
	Mike Collins
Rob Fraser Project Manager 21/05/2022	Mike Collins - Survey Manager 20/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Aran 250

Project No.:	186642	**Report No.:**	2	**Date:**	21/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	2
Environmental Incident	0	/	0
Shift Handover Talk	2	/	3
Permit to Work	3	/	3
Mob Induction	8	/	21
HOC Cards	3	/	4
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	1	/	1
Daily Safety Sweep	0	/	0
Shift Task Briefing	2	/	3
Vessel Induction	3	/	13
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

1no "Audit/Inspection" - on-hire survey by SPL-supplied surveyor
Further barge inductions for 3no persons
3no HOCS: Proximity of crew to FLT / Fabrication container shows signs of rust so not lifted / Positive card for DEME crane operator

Activities performed these 24 hours

Marking out of deck for fabrication work / Loading of supplies to containers / Construction of cantilever on quayside / Welding of container lock castings on deck / Metocean equipment installation / Moving of DEME containers to alternative locations on deck and to quay for storage

Planned Work for Next 24 Hours

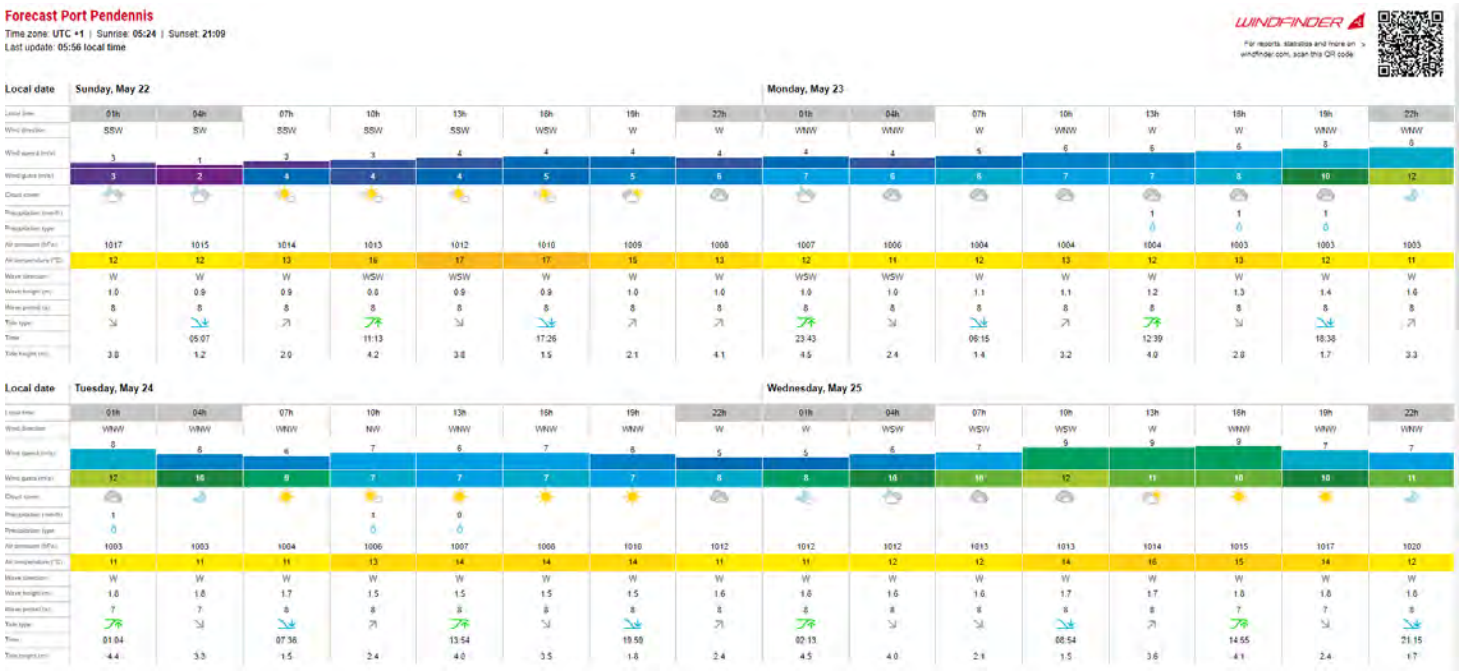
Continue installation of seafastenings on deck / Revise location of PM office and CR2 derrick locations due to 2no 10' DEME reefer containers / Construct CR2 on quay / Further delivery of equipment to quay / 1no ON-signer to arrive

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	n/a	n/a	n/a	Current meter not yet installed
Wave height (Hs)	m	0	0	0	0	In port - calm
Wind direction	Degrees	W	SW	SW	SW	Estimated until metocean spread installed
Wind speed (m/s)	m/s	4	4	4	3	

48 Hours Forecast

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Limited nightshift / Preparation of kit on quay
06:45	07:00	00:15	Mobilisation	On-boarding of further NON-PROJECT crew / Shift handover talk / Sign onto PtW / Mob inductions for new NON-PROJECT crew
07:00	18:45	11:45	Mobilisation	Transfer fabrication equipment to barge deck / Commence marking out of deck seafastenings / Transfer 20' containers to quay lifting area to allow lifting to barge / Move cantilever frame and commence construction on quay
18:45	19:00	00:15	Mobilisation	Shift handover talk / Nightshift sign onto PtW / Pre-task briefing
19:00	24:00	05:00	Mobilisation	Commence welding of container lock castings for 4no central 20' containers / Preparation of cantilever beams and profiles / Complete construction of remaining cantilever sections

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	36.63%
Mobilisation	24:00	168:00	30:25	63.37%
Total	24:00	168:00	48:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	1.27	Days	18.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Nights)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Liam Whittles	SPL Representative	12
Tomasz Michalowski	Surveyor	12
Ryan Patterson	Surveyor	12
James Winters	Metocean Engineer	12
Max Adu-Boafo	Metocean Engineer	12
Richard Kirby	HSE Manager (Mob days)	12
Andy Rowe	Drill Supervisor (Days)	12
Lloyd Symons	Fabricator (Mob days)	12
James Bosestow	Fabricator (Mob days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Nick McDonnell	Client Rep (nights)	12
James Lawson	Drill Supervisor (Nights)	5
Ryan Reeve	Assistant Driller (Nights)	5
Rowan Cornish	Fabricator (Mob nights)	5
David Matthews	Fabricator (Mob nights)	5

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	3	36	/	53
Fugro	21	224	/	354
Total	24	260	/	407

Lost & Damaged

No lost or damaged equipment

Deliverables

No deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Reference to "Aran 250" to be replaced with "Neptune" by DPR technical team from Monday / Activities within "Activity Summary" will appear once their values >0.

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager — 22/05/2022

Client Representative



Liam Whittles - SPL Representative — 21/05/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	3	**Date:**	22/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	3	/	5
Environmental Incident	0	/	0
Shift Handover Talk	2	/	5
Permit to Work	3	/	6
Mob Induction	1	/	22
HOC Cards	5	/	9
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	1
Daily Safety Sweep	0	/	0
Shift Task Briefing	0	/	3
Vessel Induction	0	/	13
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

4no HOCS: Use of magnetic blocks for routing cables on the vessels superstructure / Broken Pallet on the jetty / Welding screens not secured/ High oil level in the onboard generator.

Open DEME Permits for the 24hr period: Hot Works / Lifting Operations / General Permit to Work (0700 to 1900 then extended to 0700)

1no ON-signer arrived for Fugro - mob induction completion. barge induction scheduled for 1700 23/5/22 with other ON-signers

Activities performed these 24 hours

Continuation of deck fabrication work / Installation of the cantilever beams onto the deck / Welding of container lock castings onto the deck / Installation of containers on to the deck / Cantilever moved onboard / Metocean equipment installation

Planned Work for Next 24 Hours

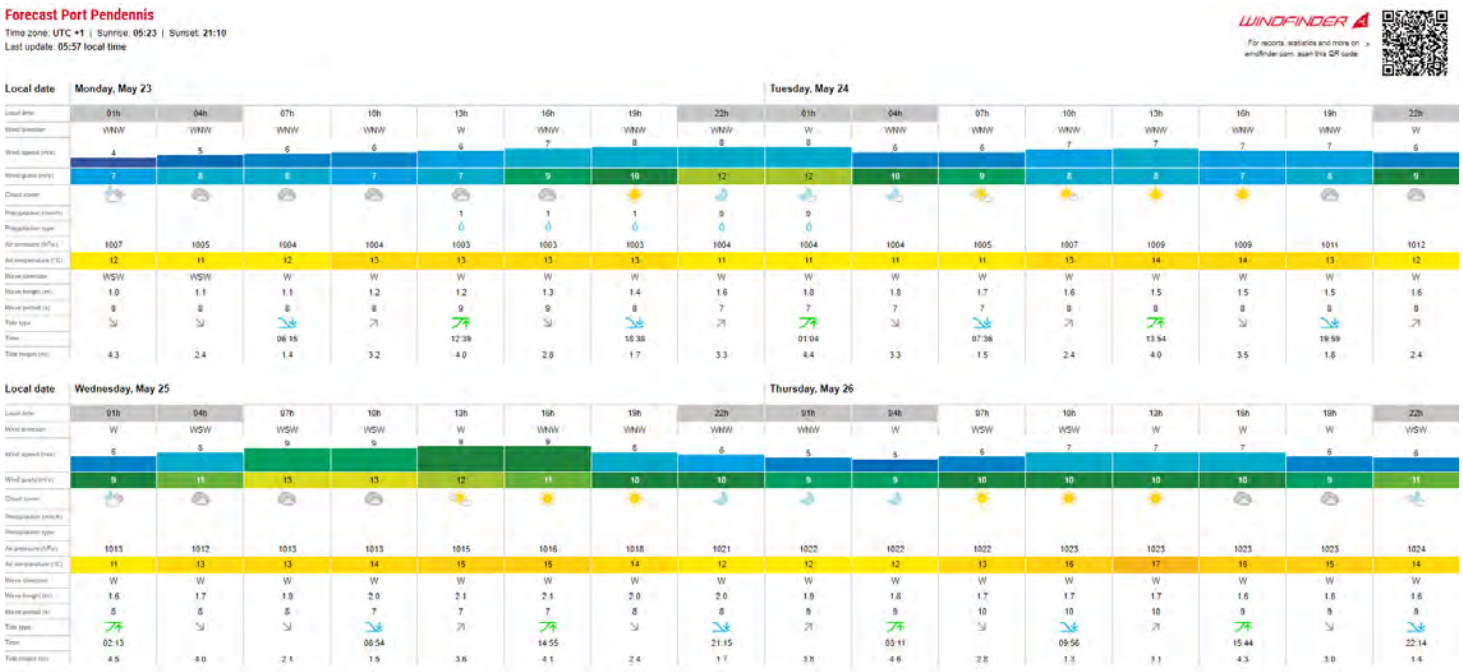
Continue with deck fabrication work / Further delivery's to the quay / Receive 2no On-signers to arrive / Construct CR2 on the quay

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	n/a	n/a	n/a	Current meter not yet installed
Wave height (Hs)	m	0	0	0	0	In port - calm
Wind direction	Degrees	SSW	S	SW	WNW	Estimated until metocean spread installed

48 Hours Forecast

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of deck fabrication work for the sea fastenings on deck/ Construction of the cantilever on the quay. Containers onboard.
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign onto PTW / Pre-task briefing
07:00	18:45	11:45	Mobilisation	Cantilever platform lifted off cantilever frame and placed on top of workshop container / Lift on cantilever frame and confirm alignment with beams / Continue with seafastening installations / Delivery of 20' lab container / Further shoreside deliveries of equipment from yard
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night shift sign onto PTW / Pre - task briefing
19:00	24:00	05:00	Mobilisation	Continuation of fabrication work on the cantilever beams on deck / Stores container and workshop container arranged and prepared for sea

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	24.42%
Mobilisation	24:00	168:00	54:25	75.58%
Total	24:00	168:00	72:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	2.27	Days	32.43%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Nights)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Liam Whittles	SPL Representative	12
Tomasz Michalowski	Surveyor	12
Ryan Patterson	Surveyor	12
James Winters	Metocean Engineer	12
Max Adu-Boafo	Metocean Engineer	12
Richard Kirby	HSE Manager (Mob days)	12
Andy Rowe	Drill Supervisor (Days)	12
Lloyd Symons	Fabricator (Mob days)	12
James Bosestow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	6

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Nick McDonnell	Client Rep (nights)	12
James Lawson	Drill Supervisor (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Rowan Cornish	Fabricator (Mob nights)	12
David Matthews	Fabricator (Mob nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	3	36	/	89
Fugro	22	258	/	612
Total	25	294	/	701

Lost & Damaged

No equipment lost or damaged

Deliverables

No Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative	Client Representative
	Mike Collins
Rob Fraser Senior Project Manager 22/05/2022	Mike Collins - Survey Manager 22/05/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	4	**Date:**	23/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	7
Environmental Incident	0	/	0
Shift Handover Talk	2	/	7
Permit to Work	3	/	9
Mob Induction	0	/	22
HOC Cards	2	/	11
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	1
Daily Safety Sweep	0	/	0
Shift Task Briefing	0	/	3
Vessel Induction	1	/	15
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Hot Works / Lifting Operations / General Permit to Work (Issued by DEME)
Pre task tool-box talk - CR2 Assembly / Lifting plans and works for the night shift

Activities performed these 24 hours

Continuation of deck fabrication works and seafastening installations / Further shoreside deliveries of equipment / Drill unit lifted on deck / Removal of a guard rail on the ports side midships to install the wave radar frame / Continuation of works on the cantilever / Installation of power to containers

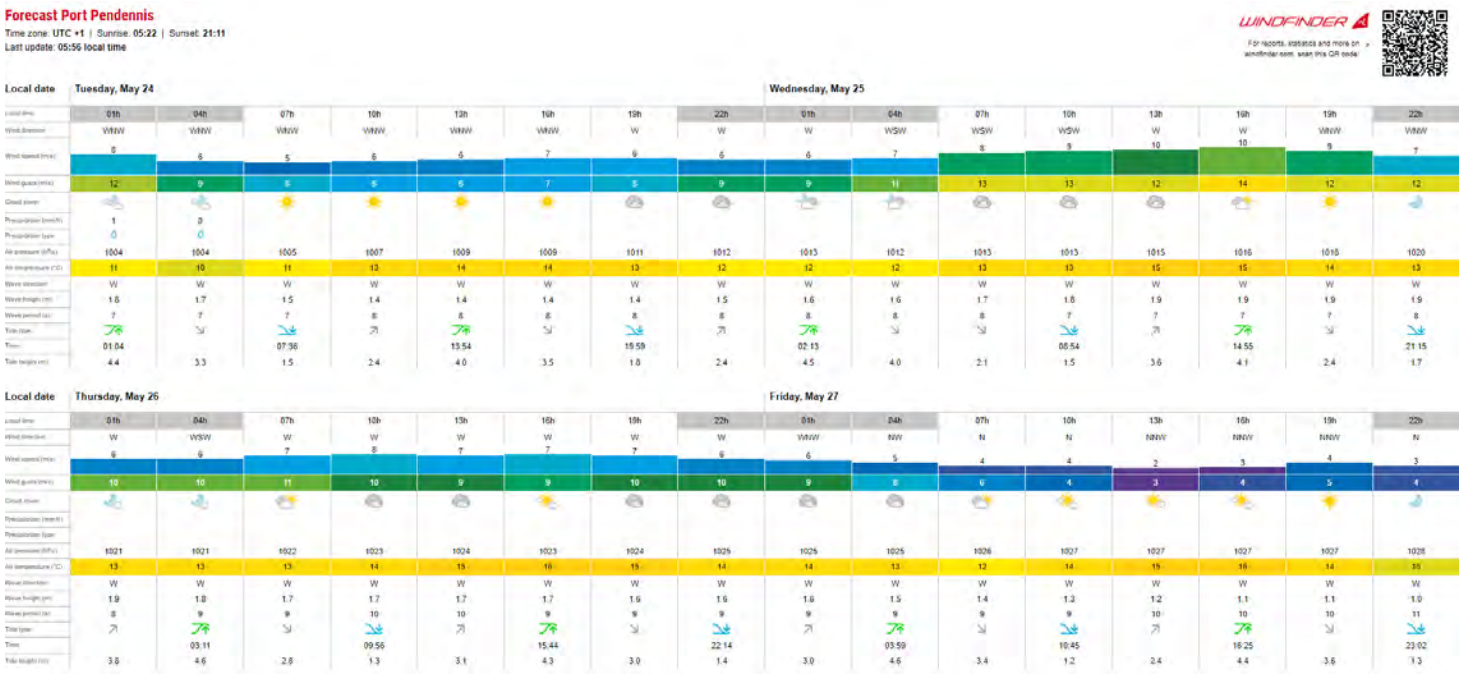
Planned Work for Next 24 Hours

Continuation of mobilisation works / Seafastening installation / Securing of containers on the deck / install drill on cantilever / install CR2 derrick / Bolt on wings on the cantilever and install access stairs / Lift on holding tank and cat pump / Install casing tippers

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Current meter not yet installed
Wave height (Hs)	m	0	0	0	0	In Port - calm
Wind direction	Degrees	WNW	WNW	WNW	WNW	Estimated until metocean spread insatlled
Wind speed (m/s)	m/s	8	7	9	12	Estimates - awaiting install of project anemometer

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of deck fabrication work on the beams of the cantilever / Commenced preparation work on CR2 derrick on the quay
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign onto PTW / Pre-task briefing
07:00	18:45	11:45	Mobilisation	Continuation of deck fabrication works, sea fastening installations/ Further shoreside deliveries of equipment/ Comacchio drill lifted on deck.
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night shift sign onto PTW / Pre-task briefing
19:00	24:00	05:00	Mobilisation	Continuation of deck fabrication work on the welding of container lock castings / Removal of a guard rail on the ports side midships to install the wave radar frame / Continuation of works on the cantilever / Installation of electrics to Fugro containers

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	18.32%
Mobilisation	24:00	168:00	78:25	81.68%
Total	24:00	168:00	96:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	3.27	Days	46.71%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Mike Collins	SPL Representative	2
Hamish Spence	Wireline Geophys Operator (days)	12
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduifn	Client Rep (days)	12
Liam Whittles	SPL Representative	6
Tomasz Michalowski	Surveyor	12
Ryan Patterson	Surveyor	12
James Winters	Metocean Engineer	12
Max Adu-Boafo	Metocean Engineer	12
Richard Kirby	HSE Manager (Mob days)	12
Andy Rowe	Drill Supervisor (Days)	12
Lloyd Symons	Fabricator (Mob days)	12
James Bosestow	Fabricator (Mob days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Nick McDonnell	Client Rep (nights)	12
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
David Matthews	Fabricator (Mob nights)	12
Rowan Cornish	Fabricator (Mob nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	32	/	121
Fugro	22	264	/	876
Total	26	296	/	997

Lost & Damaged

No equipment lost or damaged

Deliverables

No deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Visit from Falmouth Office Hub Manager Jon Fenton
SPL rep changeout: Liam Whittles departs / Mike Collins arrives

Client Representative Comments

Fugro Representative	Client Representative
	Mike Collins
Rob Fraser Senior Project Manager 24/05/2022	Mike Collins - Survey Manager 23/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	5	**Date:**	24/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	8
Environmental Incident	0	/	0
Shift Handover Talk	2	/	9
Permit to Work	3	/	12
Mob Induction	1	/	23
HOC Cards	2	/	13
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	1	/	2
Daily Safety Sweep	2	/	2
Shift Task Briefing	0	/	3
Vessel Induction	1	/	16
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot Works / Lifting Operations / General Permit to Work (Issued by DEME),

HOC raised, part of the guard rail removed, no longer load bearing. (Ships team will fit a new stanchion) / No warning or safety fencing around the rear of the Comacchio until remaining equipment installed - handrail placed temporarily (Raised by DEME).

Visit from SPL SHE Manager Joe Walsh - audit report to be issued following visit

Daily Sweep initiated - 1no crew member per shift to inspect a work area and record findings and/or raise a HOC if relevant

Activities performed these 24 hours

Continuation of deck fabrication works and seafastenings/ Further shoreside deliveries of equipment/Comacchio drill lifted and secured on the cantilever/ CR2 derrick installed/ Further lifting Reefer containers onboard and secured to the deck / wave radar installed on it's frame

Lifted further equipment during a 4 hour window, continuation of fabrication works. Preparation work of the CPT container.

Planned Work for Next 24 Hours

Continuation of deck fabrication works and sea fastenings / Fill reefers with cable ramps and barrel stands and trestles / Sheave up CR2 winches /
/ Delivery of remaining conductor casing / delivery of deck welfare container / Delivery of remaining drill kit / Install of vibrohammer and HPU seafastenings and install on to them / Installation of Fugro 4G connection for metocean and PM office

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments

DOME

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Current meter not yet installed
Wave height (Hs)	m	0	0	0	0	In Port - calm
Wind direction	Degrees	WNW	WNW	WNW	W	Estimated until metocean spread insatlled
Wind speed (m/s)	m/s	8	11	11	11	Estimates - awaiting install of project anemometer

48 Hours Forecast

Local date	Wednesday, May 25														
Local time	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
Wind direction															
Wind speed (kts)	16	15	15	15	14	14	18	16	16	15	18	17	15	14	14
Wind gusts (max kts)	24	23	24	24	24	26	22	22	22	25	27	28	26	24	25
Cloud cover															
Precipitation type															
Precipitation (mm / h)	0.3	0.3		0.1	0.1	0.1									
Air temperature (°C)	12	13	13	13	13	14	15	15	14	14	15	14	14	13	13
Feels like (°C)	12	13	13	13	13	14	15	15	14	14	15	14	14	13	13
Relative humidity (%)	92	91	91	91	92	90	79	80	82	86	80	81	84	85	87
Air pressure (hPa)	1009	1010	1010	1010	1011	1011	1012	1012	1013	1013	1014	1014	1015	1016	1016
Wave direction															
Wave height (m)	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Wave period (s)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8
Tide type															
Time			08:54						14:55						21:15
Tide height (m)	2.1	1.6	1.5	1.7	2.3	3	3.6	4	4.1	4	3.6	3	2.4	1.9	1.7

Local date	Thursday, May 26														
Local time	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
Wind direction															
Wind speed (kts)	11	12	12	12	12	12	12	13	12	13	13	12	11	11	11
Wind gusts (max kts)	21	21	20	20	19	20	19	18	19	20	21	21	20	20	19
Cloud cover															
Precipitation type															
Precipitation (mm / h)															
Air temperature (°C)	12	13	12	13	13	13	14	14	14	15	15	14	14	14	14
Feels like (°C)	12	13	12	13	13	13	14	14	14	15	15	14	14	14	14
Relative humidity (%)	93	91	90	90	90	88	86	86	85	82	83	88	90	92	94
Air pressure (hPa)	1018	1019	1020	1020	1020	1020	1020	1020	1020	1020	1020	1021	1021	1021	1021
Wave direction															
Wave height (m)	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8
Wave period (s)	9	10	10	10	10	10	9	9	9	9	9	9	9	9	9
Tide type															
Time				09:56						15:44					
Tide height (m)	2.8	2.1	1.5	1.3	1.6	2.2	3.1	3.8	4.2	4.3	4.1	3.6	3	2.4	1.8

Summary of Events

Begin	End	Duration	Type	Description

DOME

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of mobilisation works / deck fabrication / Securing of containers on the deck / Electrician installing power to the containers/ Lifted on holding tank and cat pump
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign onto PTW / Pre-task tool box talk
07:00	18:45	11:45	Mobilisation	Continuation of deck fabrication works and seafastenings/ Further shoreside deliveries of equipment/Comacchio drill lifted and secured on the cantilever/ CR2 derrick installed / Wave radar, anemometer and current sensor connected and tested
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night Shift sign onto PTW / Pre tasking tool box talk
19:00	24:00	05:00	Mobilisation	Lifted all the remaining reefer containers onboard, alongside further equipment lifted onboard/ Electrician carried on with remaining electrical work/ Further deck fabrication works carried out

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	14.65%
Mobilisation	24:00	168:00	102:25	85.35%
Total	24:00	168:00	120:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	4.27	Days	61.00%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

Day Shift

Employee Name	Job Title	Hours Worked
Hannah Keogh	MMO (days)	12
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduifn	Client Rep (days)	12
Tomasz Michalowski	Surveyor	12
Ryan Patterson	Surveyor	12
James Winters	Metocean Engineer	12
Max Adu-Boafo	Metocean Engineer	12
Richard Kirby	HSE Manager (Mob days)	12
Andy Rowe	Drill Supervisor (Days)	12
Lloyd Symons	Fabricator (Mob days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Clare Echlin	MMO (nights)	12
Ian Milward	Project Engineer (Nights)	12
Nick McDonnell	Client Rep (nights)	12
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
David Matthews	Fabricator (Mob nights)	12
Rowan Cornish	Fabricator (Mob nights)	12
Tomasz Lesniak	CPT Operator (nights)	5
Jose Fernandez	Wireline Geophys Operator (nights)	6

Day Shift

Employee Name	Job Title	Hours Worked
James Bosestow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Mike Collins	SPL Representative	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	181
Fugro	24	275	/	1151
Total	29	335	/	1332

Lost & Damaged

No equipment lost or damaged

Deliverables

Metocean spread webpage: https://www.fugroweather.com/WeatherMonitor.Net/Displays/FugroGeoservices/207302/Jackup_Waves.aspx

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Visit from Paul Roach (Fugro Nearshore Manager)

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

25/05/2022

Client Representative



24/05/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	6	**Date:**	25/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	9
Environmental Incident	0	/	0
Shift Handover Talk	2	/	11
Permit to Work	0	/	12
Mob Induction	0	/	23
HOC Cards	2	/	15
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	2
Daily Safety Sweep	0	/	2
Shift Task Briefing	0	/	3
Vessel Induction	4	/	20
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Hot works / Lifting Operations / General Permit to Work (Issued by DEME)

HOC's : Container lock not unlatched before lift commenced / Supervisor and mob crew fully aware of wind speed and limiting conditions for crane ops

Activities performed these 24 hours

Continuation of deck fabrication works / Lifting operations / Reefer units prepared with contents and all required electrical work carried out / Further equipment arriving on the quay

Crane operations suspended due wind gusting over 12m/s.

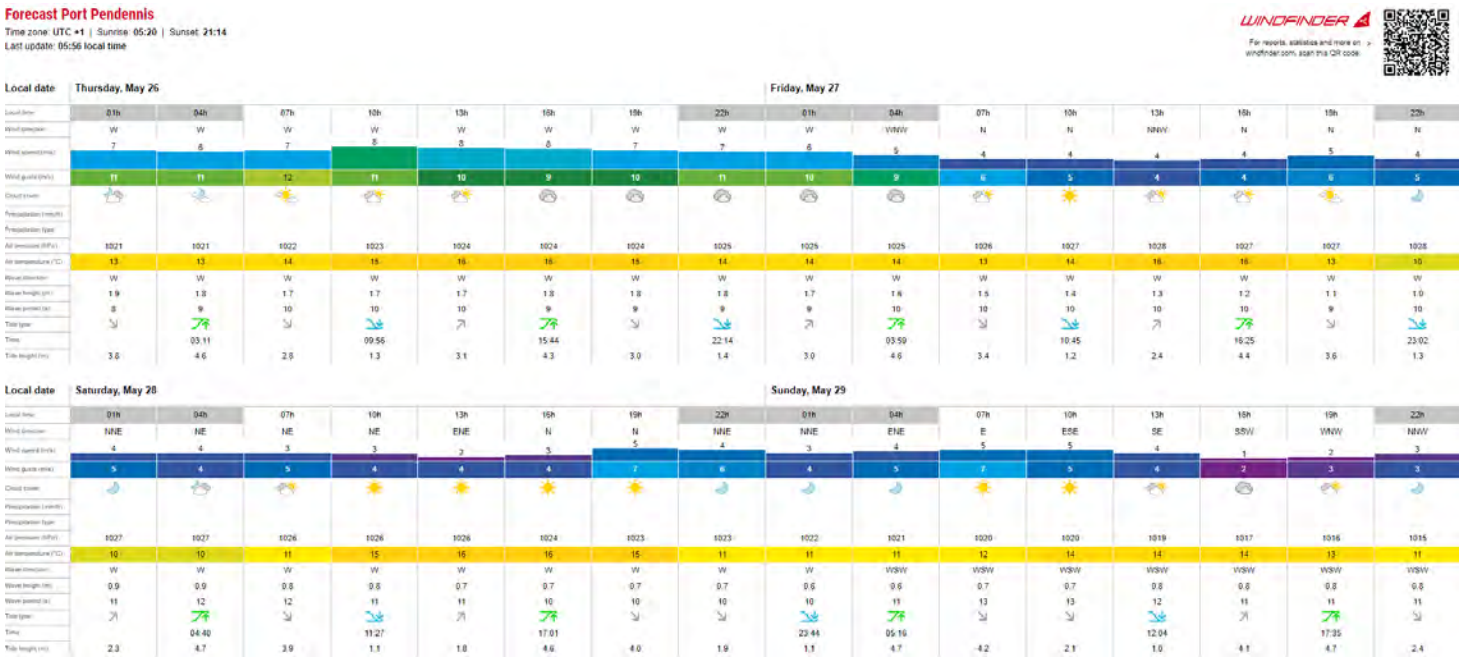
Planned Work for Next 24 Hours

Commencing crane operations once the wind drops below 12 m/s / Continuation of deck fabrication works / Install Fugro internet in deck containers and link metocean system

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Current meter not deployed in port
Wave height (Hs)	m	0	0	0	0	In port - calm
Wind direction	Degrees	W	W	WNW	W	
Wind speed (m/s)	m/s	8	12	14	7	

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of deck fabrication works and sea fastenings/ Fill reefers with cable ramps and barrel stands and trestles/ Sheave up CR2 winches
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign to PTW / Pre - task tool box talk
07:00	18:45	11:45	Mobilisation	Continuation of deck fabrication works / Continuation of visit/audit by SPL SHE Manager / Preparation of drill rig / 4no ON-signers arrive / Crane operations suspended approx 1500 due to strong winds >12m/s
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night shift sign PTW / Pre-task tool box talk
19:00	24:00	05:00	Mobilisation	Limited crane operations due to wind gusting over 12 m/s / Preparation of Drill supervisors office and Project Mangers office / Limited equipment brought onboard by hand / Continuation of deck fabrication works / CPT test and calibration of equipment

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	12.21%
Mobilisation	24:00	168:00	126:25	87.79%
Total	24:00	168:00	144:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	5.27	Days	75.29%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV	DR	45.00	0.00	0.00	N°	0.00%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress

operations / Sample transfers etc)

Day Shift

Employee Name	Job Title	Hours Worked
Frank Scotti	Geotechnical Engineer (days)	3
Lucas Huysinga	Lab Technician (Days)	3
Karl Routledge	Lead Geotechnical Engineer	12
Robert Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Andy Rowe	Drill Supervisor (Days)	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Driller (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Matt Tierney	Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Richard Kirby	HSE Manager (Mob days)	12
Lloyd Symons	Fabricator (Mob days)	12
James Bosestow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Mike Collins	SPL Representative	12
Hannah Keogh	MMO (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Tom Cookson	Geotechnical Engineer (Nights)	3
Aaron Brown	Lab Technician (Nights)	8
Ian Milward	Project Engineer (Nights)	12
Nick McDonnell	Client Rep (nights)	12
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
David Matthews	Fabricator (Mob nights)	12
Rowan Cornish	Fabricator (Mob nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	241
Fugro	26	281	/	1432
Total	31	341	/	1673

Lost & Damaged

No equipment lost or damaged

Deliverables

Metocean spread webpage: https://www.fugroweather.com/WeatherMonitor.Net/Displays/FugroGeoservices/207302/Jackup_Waves.aspx

Mob calibration certs being collated

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Operations hampered by strong winds from approx 1500 through to approx 2100
Dry conditions fore remainder of week should allow remaining welding operations to continue unhindered

Client Representative Comments

Fugro Representative	Client Representative
	
Rob Fraser Senior Project Manager	
26/05/2022	25/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	7	**Date:**	26/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks, UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	10
Environmental Incident	0	/	0
Shift Handover Talk	2	/	13
Permit to Work	3	/	15
Mob Induction	3	/	26
HOC Cards	4	/	19
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	2
Daily Safety Sweep	2	/	4
Shift Task Briefing	2	/	5
Vessel Induction	0	/	20
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Hot works / Lifting Operations / General Permit to Work (Issued by DEME)

HOC: Vessels AB's always there to help /Rubbish around the deck / Short length of wire rope left on the cantilever / Good cable routing /

Activities performed these 24 hours

Continued lifting operations / Continuation of deck fabrication works / Preparation of all works containers / Welfare unit secured on deck / Conductor casing loaded onboard / All electrical installs tested

Planned Work for Next 24 Hours

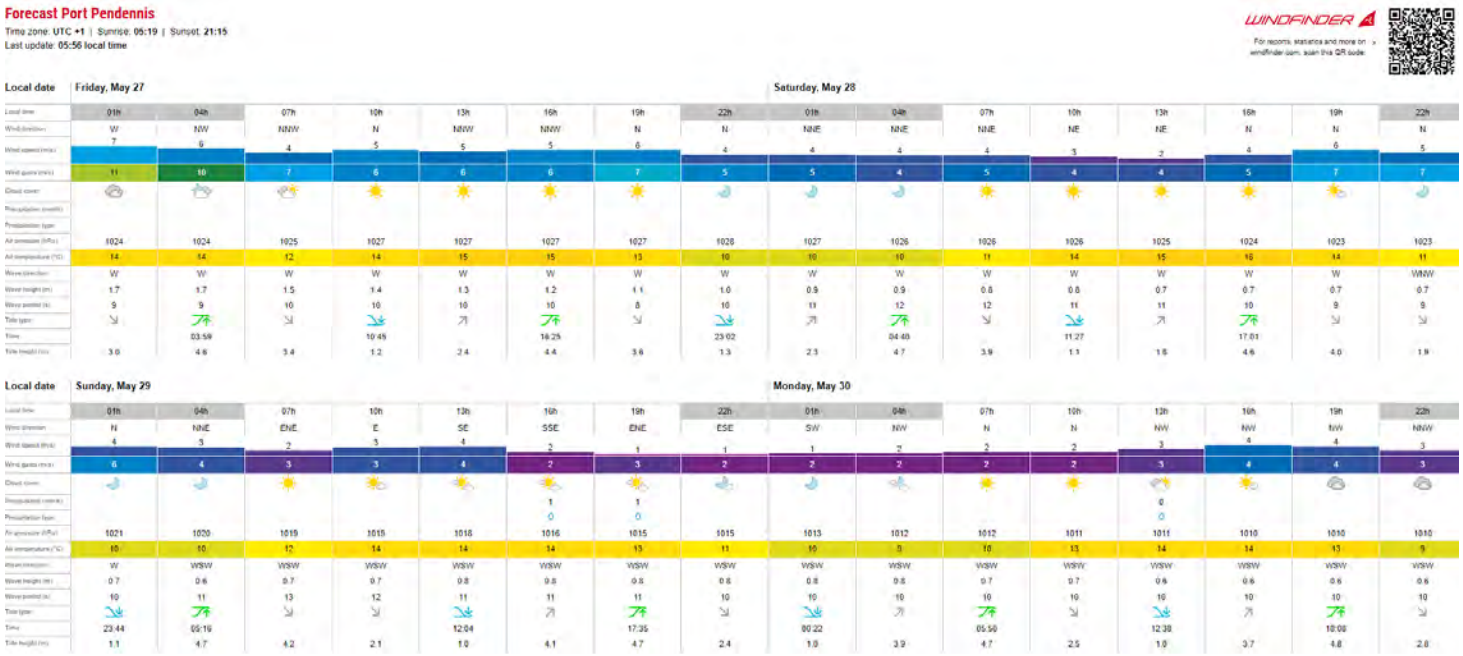
Finishing off final deck fabrication works / Loading of remaining casing onboard / Load test the drill unit / Complete mobilisation

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Current meter not deployed in port
Wave height (Hs)	m	0	0	0	0	In port - calm
Wind direction	Degrees	W	W	W	W	
Wind speed (m/s)	m/s	7	7	9	6	

48 Hours Forecast

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Commenced Lifting Operations / Continuation of deck fabrication works / Testing electrical systems
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign PTW / Pre-task tool box talk
07:00	18:45	11:45	Mobilisation	Continuation of lifting operations and deck fabrication works
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night shift sign PTW / Pre-task tool box talk
19:00	24:00	05:00	Mobilisation	Securing and storing of equipment off the deck and into the storage containers / Electrical work in the welfare unit

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	10.47%
Mobilisation	24:00	168:00	150:25	89.53%
Total	24:00	168:00	168:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	6.27	Days	89.57%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Rob Fraser	Project Manager (Days)	12
Nick Powney	HSE Advisor	12
Andy Rowe	Drill Supervisor (Days)	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Days)	12
Andrew Barnett	Drill Supervisor (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Richard Kirby	HSE Manager (Mob days)	12
Lloyd Symons	Fabricator (Mob days)	12
James Bosestow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
James Brennan	Design Engineer (Mob days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick McDonnell	Client Rep (nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
David Matthews	Fabricator (Mob nights)	12
Rowan Cornish	Fabricator (Mob nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Clare Echlin	MMO (nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	301
Fugro	26	312	/	1756
Total	31	372	/	2057

Lost & Damaged

No equipment lost or damaged

Deliverables

Mob calibration certs being collated

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Visits from Matt Chappell, Simon Brobson and Zac Smart

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

27/05/2022

Client Representative



26/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	8	**Date:**	27/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	12
Environmental Incident	0	/	0
Shift Handover Talk	2	/	15
Permit to Work	3	/	18
Mob Induction	0	/	26
HOC Cards	2	/	21
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	0	/	0
Audits / Inspections	0	/	2
Daily Safety Sweep	2	/	6
Shift Task Briefing	2	/	7
Vessel Induction	0	/	20
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Hot works / Lifting Operations / General Permit to work (Issued by DEME)

HOC: Good communication maintained with crane op when lifting on the casing onboard at night / No smoke alarms within the workshop, office containers / Good communication with everyone working on deck

Activities performed these 24 hours

Continuation of deck fabrication works / Securing equipment in containers / Removal of surplus equipment of deck onto the quay / Head of operations (Fugro) signs off drill spread / Final deck seafastenings / Conductor casing set up on the tippers / Continuation of clearing the deck / Modifications to vibrohammer seafastenings / Commencement of Fugro and StormGeo site spot forecasts

Planned Work for Next 24 Hours

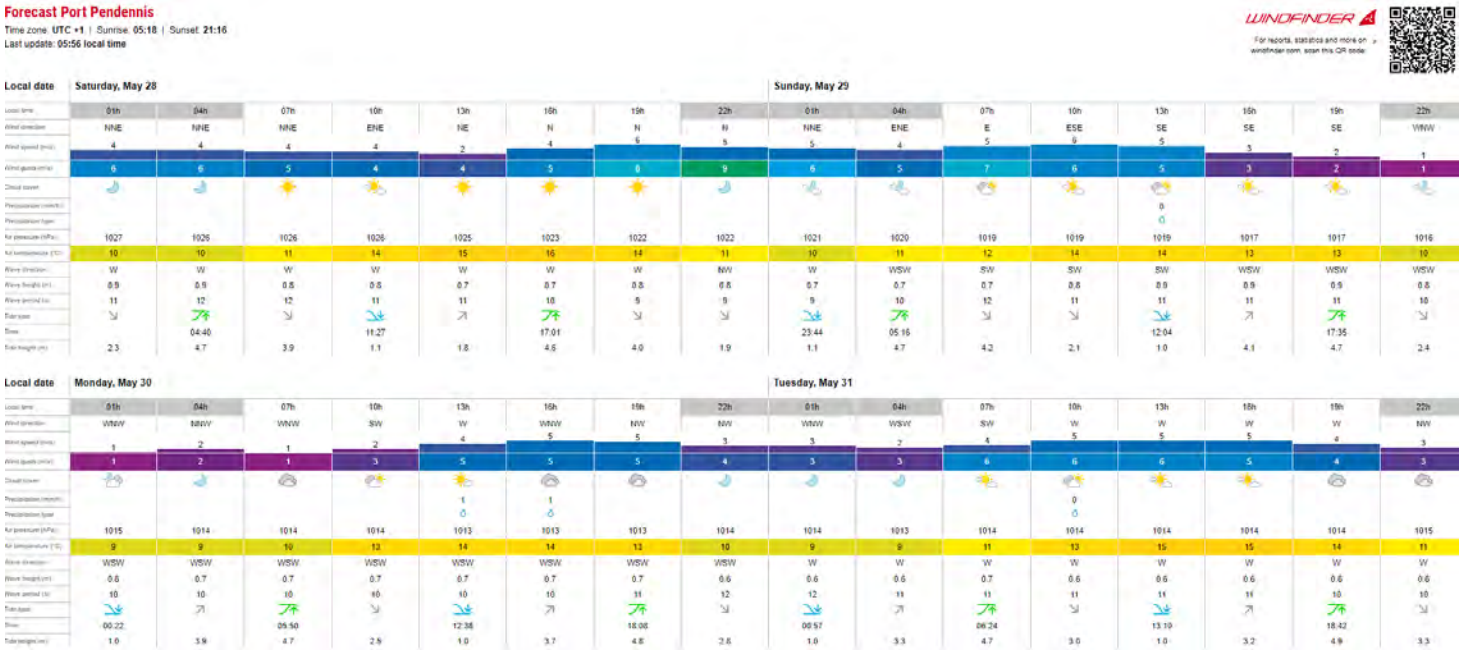
Walkthrough / Talk-through and have the vibrohammer spread checked by suppliers engineer / Completion of mobilisation activities / Commence strip down of cantilever spread and place in seafastening locations inboard

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Current meter not deployed in port
Wave height (Hs)	m	0	0	0	0	In Port
Wind direction	Degrees	W	NNW	NNW	NNE	
Wind speed (m/s)	m/s	7	4	5	4	

DOME

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Lifting operations, 20" casing pallets onboard, remove access equipment to the quay / Continuation of deck fabrication works
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign PTW / Pre - task tool box talk
07:00	18:45	11:45	Mobilisation	Continuation of mobilisation / Drill spread signed off by Fugro Head of Ops / Continuation of mods to vibrohammer seafastening / Thorough inspection of drill spread and Fugro lifting equipment
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night Shift sign PTW / Pre-task toolbox talk
19:00	24:00	05:00	Mobilisation	Layout the hydraulic hoses for the vibrohammer / Lifted on the remaining casing on to the tippers on deck

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	9.16%
Mobilisation	24:00	168:00	174:25	90.84%
Total	24:00	168:00	192:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	7.27	Days	103.86%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Rob Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Nights)	12
Andrew Barnett	Driller (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Richard Kirby	HSE Manager (Mob days)	12
Lloyds Symons	Fabricator (Mob days)	8
James Bosestow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
James Brennan	Design Engineer (Mob days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	5
Nick McDonnell	Client Rep (nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Clare Echlin	MMO (nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
David Matthews	Fabricator (Mob nights)	7
Rowan Cornish	Fabricator (Mob nights)	7

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	361
Fugro	26	291	/	2047
Total	31	351	/	2408

Lost & Damaged

No equipment lost or damaged

Deliverables

Request for kit list for drill spread, lab and CPT. Lab list issued. partially completed drill spread list issued - to be updated.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Mobilisation extending beyond 7 days due to earlier delays inc rain slowing welding operations and winds >12m/s delaying some lifting operations earlier in the week. Targeting Walkthrough/Talk-through on Sat AM to complete mobilisation by Sat lunchtime. Strip-down of cantilever spread to then commence with target completion by Sun lunchtime, with subsequent departure on Sunday PM.

Final Fugro ON-signer to arrive Sat AM (Karl Hack - nightshift driller)

Client Representative Comments

1. The final lift of the riser casing was performed this morning and not last night, noted that the spare dolly pipe and a set of the Geobor S casing still on the Quayside this morning to be lifted on. Still a number of other items to be loaded onto the vessel (eg core boxes) to complete the mobilisation of all equipment.
2. Modifications to the VH related to how it sits correctly within its frame for correct seafastening, these modifications would likely best have been performed prior to mobilisation to avoid delays that have occurred during the mobilisation works.
3. The review of the drilling equipment / set up was supposed to occur yesterday morning (Thursday) but did not happen until approx. 16:00.
4. It is not clear why the risers that are connected to the tippers were so delayed in being brought onto the vessel, considered this could have been done from Wednesday evening or at the latest Thursday morning given this area was clear. Similarly, not clear why the other riser casings took so long to get aboard from the Quayside as their place on the vessel has not been inhibited in any way.

DOME

Client Representative Comments

5. Equipment delivery has been piece meal and therefore lifts / lift timings no doubt affected.
6. To this point (email 19:11 27/05/22 from RF), SPL have not been made aware of potential delays to the completion of mobilisation within the 7 day programme (excluding the rig and frame removal).

Fugro Representative



Rob Fraser
Senior Project Manager
28/05/2022

Client Representative



Mike Collins
Survey Manager
27/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	9	**Date:**	28/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Northern Arm Berth, Falmouth Docks UK				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	14
Environmental Incident	0	/	0
Shift Handover Talk	2	/	17
Permit to Work	0	/	18
Mob Induction	1	/	27
HOC Cards	2	/	23
Safety Drills	0	/	0
Near miss	0	/	0
Equipment Damage	1	/	1
Audits / Inspections	0	/	2
Daily Safety Sweep	2	/	8
Shift Task Briefing	2	/	9
Vessel Induction	1	/	21
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Hot works / Lifting Operations / General Permit to work (Issued by DEME)

HOC : Correct PPE Being worn at all times / Hot weather, regular breaks to avoid heat exhaustion

Activities performed these 24 hours

Completion of deck fabrication works / Walkthrough - Talk-through on the casing and vibrohammer rigging / Cantilever spread stripped down and placed on seafastenings ready for transit / Continuation of bringing equipment onboard and removal of surplus items to the quay / Additional lighting installed in logging container

Planned Work for Next 24 Hours

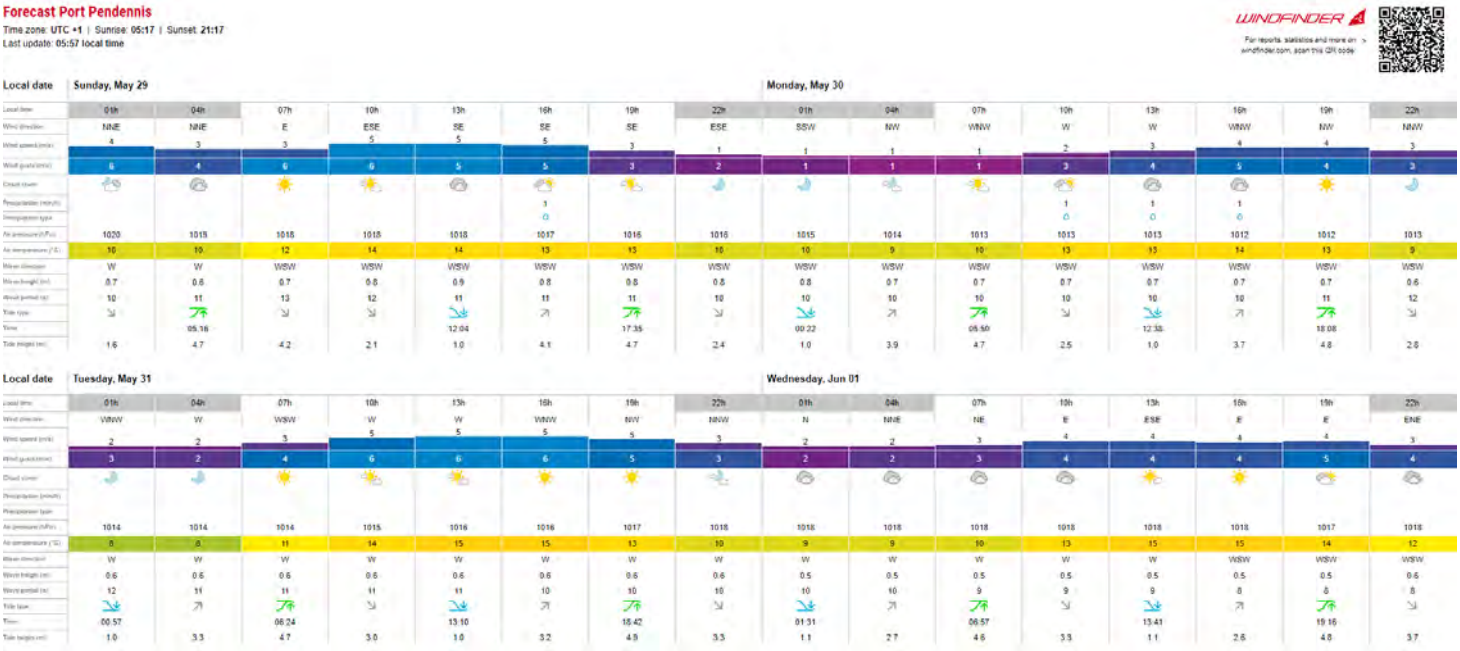
NDT Testing on the repair work on the CR2 derrick / DEME to install some additional padeyes following walk over of deck / Continuation of clearing the deck and securing all equipment for sea / Depart Falmouth for worksite.

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	n/a	0.1	n/a	Deployed briefly for trial
Wave height (Hs)	m	n/a	0.1	0.2	0.1	
Wind direction	Degrees	NNE	NE	N	NNE	
Wind speed (m/s)	m/s	6	4	7	3	

48 Hours Forecast

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of construction of conductor casings / Modifications to the vibrohammer seafastenings / Continuation of securing the deck
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign PTW / Pre-task toolbox talk
07:00	18:45	11:45	Mobilisation	Walkthrough/Talk-through on casing installation and vibrohammer install operations / Cantilever and drill spread removed and secured on in-board seafastenings / Final equipment arrived on the quay (secondary back-up generator and coreboxes) /
18:45	19:00	00:15	Mobilisation	Shift handover talk / Night Shift sign PTW / Pre-task toolbox talk
19:00	24:00	05:00	Mobilisation	Lifted on remaining equipment from the quay / Seafastening of remaining items

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	8.14%
Mobilisation	24:00	168:00	198:25	91.86%
Total	24:00	168:00	216:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	1.00	8.27	Days	118.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.00	0.00	Days	0.00%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Rob Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Martin Gilbert	Lift Supervisor (mob days)	12
Cameron Hughes	Assistant Driller (Nights)	12
Andrew Barnett	Driller (Days)	12
Ali Miller	Yard Assistant (Mob days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
James Bosustow	Fabricator (Mob days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
James Brennan	Design Engineer (Mob days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12
Richard Knight	Assistant Driller (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	5
Nick McDonnell	Client Rep (nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Clare Echlin	MMO (nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Karl Hack	Driller (Nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	421
Fugro	24	281	/	2328
Total	29	341	/	2749

Lost & Damaged

CR2 derrick base plates damaged when tilting derrick back fully to accommodate vibrohammer over casing/moonpool. Damage repaired and mod made to slideframe mounts to prevent further occurrence - documented and authorised via MOC001.

Deliverables

Metocean data available online - https://www.fugroweather.com/WeatherMonitor.Net/Displays/FugroGeoservices/207302/Jackup_Waves.aspx . Note that wave radar and current meter are retrieved to deck during transit.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Mobilisation extended from 7 day estimated duration due to combination of weather delays on welding and lifting operations and late delivery of remaining equipment. Mobilisation operations should complete on Sunday AM following NDT of CR2 repairs.

Client Representative Comments

1. From 12:00pm to 12:00am the CR2 drill rig inoperable due to damage to CR2 Mast legs during VH testing. Mast overextended during VH test with pad eyes causing damage to both mast legs requiring repair (welding and NDT testing).
2. Seafastening of equipment still to be completed for equipment brought onto vessel during nightshift.

Fugro Representative	Client Representative
	
Rob Fraser Senior Project Manager	
29/05/2022	28/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	10	**Date:**	29/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	North Arm Berth, Falmouth Docks UK, Transit from Falmouth				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	15
Environmental Incident	0	/	0
Shift Handover Talk	2	/	19
Permit to Work	3	/	21
Mob Induction	0	/	27
HOC Cards	2	/	25
Safety Drills	1	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	1	/	3
Daily Safety Sweep	1	/	9
Shift Task Briefing	2	/	11
Vessel Induction	0	/	21
Project Induction	0	/	0
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : hot works / Lifting Operations / General Permit to work (Issued By DEME)
Muster drill performed 0700 with all crew onboard
JUIC completed

Activities performed these 24 hours

All equipment lifted off the quay / Equipment secured with seafastenings / NDT Carried out on the CR2 Derrick / Departed Falmouth / Commenced transit to worksite

Planned Work for Next 24 Hours

Transit to BH26 ARKLOW / Project induction for both shifts

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	n/a	n/a	n/a	
Wave height (Hs)	m	n/a	n/a	n/a	n/a	
Wind direction	Degrees	NNW	NNE	NNE	N	
Wind speed (m/s)	m/s	5	9	7	7	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
Limit	-	-	-	-	-	-	-	-	-	-	-	-
29/0600	NNW	5	6	0.2	NNE	0.7	4	-	0.0	-	0.7	1.2
29/0900	N	6	8	0.4	NNE	0.6	4	-	0.0	-	0.7	1.2
29/1200	NNE	9	11	0.6	NNE	0.5	4	-	0.0	-	0.8	1.3
29/1500	NNE	9	11	0.6	NNE	0.6	4	-	0.0	-	0.8	1.4
29/1800	NNE	7	9	0.6	NNE	0.5	4	-	0.0	-	0.8	1.3
29/2100	NNE	6	8	0.5	NNE	0.3	4	-	0.0	-	0.6	1.0
30/0000	N	7	9	0.0	NNE	0.4	4	-	0.0	-	0.4	0.7
30/0300	NNW	7	9	0.2	NNE	0.3	4	-	0.0	-	0.4	0.6
30/0600	NW	6	8	0.2	NNE	0.3	3	-	0.0	-	0.3	0.6
30/0900	NNW	3	3	0.0	NNE	0.3	3	-	0.0	-	0.3	0.5
30/1200	SSE	3	3	0.0	NNE	0.3	3	-	0.0	-	0.3	0.5
30/1500	S	7	9	0.2	NNE	0.2	3	-	0.0	-	0.3	0.5
30/1800	S	7	9	0.2	NNE	0.2	4	-	0.0	-	0.3	0.5
30/2100	NW	5	7	0.1	S	0.2	2	-	0.0	-	0.2	0.4
31/0000	NNW	7	9	0.2	S	0.1	3	NNE	0.1	5	0.2	0.4
31/0300	NNW	6	8	0.2	S	0.1	3	NNE	0.1	4	0.2	0.4
31/0600	NNW	7	9	0.2	NNE	0.1	3	-	0.0	-	0.2	0.4
31/0900	NNW	5	7	0.1	SSW	0.1	3	SSW	0.1	3	0.2	0.3
31/1200	ESE	1	2	0.0	NNE	0.2	3	SSW	0.1	3	0.2	0.3
31/1500	S	6	7	0.1	NNE	0.2	3	SSW	0.1	4	0.2	0.4
31/1800	S	2	3	0.0	SE	0.1	2	NNE	0.1	3	0.2	0.3
31/2100	WNW	5	6	0.1	S	0.1	2	NNE	0.1	3	0.2	0.3

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Mobilisation	Continuation of final equipment lifted onboard and secured
06:45	07:00	00:15	Mobilisation	Shift handover talk / Day shift sign PTW / Pre-task toolbox talk
07:00	10:00	03:00	Mobilisation	Muster drill completed / CR2 derrick repairs NDT'd / Seafastening of remaining deck items
10:00	17:45	07:45	Transit from Falmouth to Site	All deck items secured / Waiting on pilot for commencement of transit
17:45	18:45	01:00	Transit from Falmouth to Site	Depart Falmouth/ Commence transit to BH26
18:45	19:00	00:15	Transit from Falmouth to Site	Shift handover talk / Night shift sign PTW / Pre-task toolbox talk
19:00	21:15	02:15	Transit from Falmouth to Site	Securing equipment and containers for sea.
21:15	24:00	02:45	Transit from Falmouth to Site	Night shift below decks until sunrise due to deck being out of bounds during the night

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	7.33%
Mobilisation	10:00	168:00	208:25	86.84%
Transit from Falmouth to Site	14:00	34:00	14:00	5.83%
Total	24:00	202:00	240:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	0.42	8.69	Days	124.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	0.58	0.58	Days	1.29%

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

Day Shift

Employee Name	Job Title	Hours Worked
Craig Drummond	CPT Operator (Days)	12
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Andrew Barnett	Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Nick McDonnell	Client Rep (nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Clare Echlin	MMO (nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	481
Fugro	21	252	/	2580
Total	26	312	/	3061

Lost & Damaged

Repairs to CR2 leg base plates NDT'd and passed.

Deliverables

Fugro to supply calibration docs to SPL to confirm mob completion.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Completion of mobilisation operations @ 1000 Sunday 29/5/22. Switch from contract rate 1.6 to rate 3.1.
Mobilisation took a total of 8.69 days. 1.69 days above estimated 7 days.

Client Representative Comments

So far requested up to date itinerary's and report survey have not been received, therefore can not confirm the completion of mobilisation.

Fugro Representative	Client Representative
	
Rob Fraser Senior Project Manager	
30/05/2022	29/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	11	**Date:**	30/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Transit from Falmouth to BH26 Arklow site				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	0	/	15
Environmental Incident	0	/	0
Shift Handover Talk	2	/	21
Permit to Work	0	/	21
Mob Induction	0	/	27
HOC Cards	2	/	27
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	9
Shift Task Briefing	0	/	11
Vessel Induction	0	/	21
Project Induction	31	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

HOC : Good safety practices by all of the Fugro crew during the Mobilisation (By DEME) / Containers doors when open not being secured when under transit
Project inductions for all project crew inc archeological TBT
Neptune safety video for all project crew

Activities performed these 24 hours

Transit to BH26 on Arklow worksite / Project induction for all project crews / Vessel safety induction film for all project crew

Planned Work for Next 24 Hours

Arrive at BH 26 / Vessel positioning on slack tide / Preloading and jacking operations / Commence install of cantilever drill spread

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	N/A	N/A	N/A	Transit from Falmouth
Wave height (Hs)	m	N/A	N/A	N/A	N/A	
Wind direction	Degrees	NW	SE	S	NNE	
Wind speed (m/s)	m/s	6	3	5	5	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
Limit	-	-	-	-	-	-	-	-	-	-	-	-
30/0000	NNW	7	9	0.3	NNE	0.4	4	-	0.0	-	0.5	0.9
30/0300	NNW	7	9	0.2	NNE	0.3	4	-	0.0	-	0.4	0.6
30/0600	NW	6	8	0.2	NNE	0.3	3	-	0.0	-	0.3	0.6
30/0900	N	4	5	0.1	NNE	0.3	3	-	0.0	-	0.3	0.5
30/1200	SE	3	3	0.0	NNE	0.3	3	-	0.0	-	0.3	0.5
30/1500	S	6	7	0.2	NNE	0.2	3	-	0.0	-	0.3	0.4
30/1800	S	5	7	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
30/2100	ESE	4	5	0.1	S	0.1	2	NNE	0.1	4	0.2	0.3
31/0000	NNE	5	6	0.0	S	0.1	3	NNE	0.1	5	0.1	0.2
31/0300	N	6	8	0.0	S	0.1	3	NNE	0.1	4	0.1	0.2
31/0600	NNW	7	9	0.2	NNE	0.1	4	S	0.1	3	0.2	0.4
31/0900	NNE	5	7	0.1	NNE	0.1	4	S	0.1	3	0.2	0.3
31/1200	ESE	3	3	0.1	NNE	0.2	3	S	0.1	3	0.2	0.3
31/1500	S	6	7	0.1	NNE	0.2	3	S	0.1	3	0.2	0.4
31/1800	S	4	5	0.1	S	0.2	3	NNE	0.1	3	0.2	0.4
31/2100	SW	3	3	0.0	S	0.2	3	NNE	0.1	3	0.2	0.4
01/0000	NNW	4	5	0.1	S	0.1	3	NNE	0.1	3	0.1	0.2
01/0300	NNW	5	6	0.1	NNE	0.1	3	S	0.1	4	0.2	0.3
01/0600	NNW	4	6	0.1	NNE	0.2	3	S	0.1	4	0.2	0.4
01/0900	NNE	4	5	0.1	NNE	0.1	3	S	0.1	4	0.2	0.3
01/1200	E	4	5	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
01/1500	SSE	3	4	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
01/1800	SSE	4	5	0.1	-	0.0	-	-	0.0	-	0.1	0.2
01/2100	S	3	4	0.1	-	0.0	-	-	0.0	-	0.1	0.1

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Transit from Falmouth to Site	Transit to BH26 Arklow Bank
06:45	07:00	00:15	Transit from Falmouth to Site	Shift handover talk
07:00	18:45	11:45	Transit from Falmouth to Site	Continuation of transit to BH 26 Arklow bank / Project induction meeting / Vessel safety film attended by the day shift project crew
18:45	19:00	00:15	Transit from Falmouth to Site	Shift handover talk
19:00	24:00	05:00	Transit from Falmouth to Site	Continuation of transit to BH 26 Arklow bank / Project induction meeting / Vessel safety film attended by the night shift project crew

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	6.66%
Mobilisation	0:00	168:00	208:25	78.95%
Transit from Falmouth to Site	24:00	34:00	38:00	14.39%
Total	24:00	202:00	264:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	0.00	8.69	Days	124.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes	DR	45.00	1.00	1.58	Days	3.51%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
all personnel, equipment, consumables and services to deliver required SoW)						
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	0.00	0.00	N°	0.00%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andrew Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12
Craig Drummond	CPT Operator (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Nick Powney	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lensniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	541
Fugro	21	252	/	2832
Total	26	312	/	3373

Lost & Damaged

No equipment lost or damaged

Deliverables

Documentation to support sign-off of mobilisation to be provided to SPL. Uploaded to SSE Sharepoint: Starfix calibration report, kit list and certs for CPT, lab and wireline geophys spreads, lifting kit register, COSHH list, PAT testing list, DEME container RCD checks.
Drill spread kit list to be supplied.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

So far requested up to date itinerary's and report survey have not been received, therefore can not confirm the completion of mobilisation.

Fugro Representative



Rob Fraser
Senior Project Manager

31/05/2022

Client Representative



30/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	12	**Date:**	31/05/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH26 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	16
Environmental Incident	0	/	0
Shift Handover Talk	2	/	23
Permit to Work	2	/	23
Mob Induction	0	/	27
HOC Cards	4	/	31
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	10
Shift Task Briefing	2	/	13
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: General Work / Lifting Operations

HOCs : Project crew not using the correct walkways / Poor house keeping / Good practice of ensuring all project crew have read and understood MS / Good comms between deck crew and crane op.

Activities performed these 24 hours

Arrived on Location of BH26/ Positioning on DP/ leg lowering at BH26 / Commenced Jacking Up Vessel (High Contingency included for first Location) / Cantilever and drill spread removed from their sea fastenings and installed in position awaiting start of of drill ops on BH26 / Commenced installing the casing down to ML

Planned Work for Next 24 Hours

Install vibrohammer / Drive casing to 2.0m bml / Set up for sampling/CPT operations / Commence sampling/CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	0.4	0.3	0.4	Current meter moved further to stern due to potential clash with PAM and DEME current meter uits
Wave height (Hs)	m	0.4	0.4	0.5	0.4	
Wind direction	Degrees	NW	SE	NNW	NW	
Wind speed (m/s)	m/s	6	3	8	4	

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
Limit	-	-	-	-	-	-	-	-	-	-	-	-
31/0000	NNW	6	8	0.0	NNE	0.1	3	-	0.0	-	0.1	0.1
31/0300	NNW	8	11	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
31/0600	NW	6	8	0.0	NNE	0.2	3	SSW	0.1	4	0.2	0.3
31/0900	NNW	5	7	0.1	NNE	0.2	4	SSW	0.1	4	0.2	0.4
31/1200	SE	3	4	0.1	NNE	0.2	4	W	0.1	2	0.3	0.4
31/1500	S	5	6	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
31/1800	NNW	3	4	0.1	NNE	0.2	4	SSE	0.1	2	0.2	0.3
31/2100	WNW	2	2	0.0	NNE	0.2	4	S	0.1	2	0.2	0.3
01/0000	NW	5	7	0.1	NNE	0.1	4	S	0.1	2	0.2	0.3
01/0300	NW	6	7	0.2	NNE	0.1	3	SSW	0.1	4	0.2	0.3
01/0600	NW	4	5	0.1	NNE	0.1	3	SSW	0.1	4	0.2	0.3
01/0900	NNE	3	4	0.1	NNE	0.1	3	SSW	0.1	5	0.2	0.3
01/1200	SE	2	3	0.0	NNE	0.1	3	SSW	0.1	5	0.2	0.3
01/1500	SSE	3	5	0.1	NNE	0.1	3	-	0.0	-	0.2	0.3
01/1800	S	3	5	0.1	NNE	0.1	3	SSW	0.1	5	0.1	0.2
01/2100	SSW	4	6	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Transit from Falmouth to Site	Positioning on DP/ leg lowering at BH26/Jacking Up Vessel
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk/ Pre task tool box talk
07:00	11:05	04:05	Drill and Cantilever - Reconstruct	Commence installation of cantilever frame and platform
11:05	12:20	01:15	Drill and Cantilever - Reconstruct	Cantilever in place / Lift on Comacchio and CR2 derrick
12:20	12:45	00:25	Drill and Cantilever - Reconstruct	Lunch break
12:45	13:05	00:20	Offshore Resupply	Panther on site / Transfer empty lift bag to vessel
13:05	18:45	05:40	Drill and Cantilever - Reconstruct	Plumb in Comacchio hydraulics / Lift on dando winch / Re-sheave wires onto derrick / Function test of drill
18:45	19:00	00:15	Shift Handover Talk	Shift Change over talk/ Sign on to PTW / Pre Task Toolbox talk
19:00	21:05	02:05	Run-in Conductor Casing	TBT on conductor casing / Slide back Comacchio and lean CR2 back
21:05	22:35	01:30	Run-in Conductor Casing	Lift in 22m section of conductor casing / Lift in second 22m section of conductor casing / Bolting of flange
22:35	23:40	01:05	Standby Current Speed - Casing	Waiting on current to decrease prior to lowering string further into water column (Current speed ~1.3m/s)
23:40	24:00	00:20	Run-in Conductor Casing	Current speed reduced to ~0.5m/s / Lower casing string / Lifting and bolt 5m+2m dolly section / Self penetration of ~0.85m bml

Activity Summary

Activity	Today	Planned	To Date	Progress
Shift Handover Talk	0:30	0:00	0:30	0.17%
Offshore Resupply	0:20	0:00	0:20	0.12%
Neptune arrival to Falmouth	0:00	0:00	17:35	6.11%
Mobilisation	0:00	168:00	208:25	72.37%
Drill and Cantilever - Reconstruct	11:25	0:00	11:25	3.96%
Transit from Falmouth to Site	6:45	34:00	44:45	15.54%
Run-in Conductor Casing	3:55	0:00	3:55	1.36%
Standby Current Speed - Casing	1:05	0:00	1:05	0.38%
Total	24:00	202:00	288:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	0.00	8.69	Days	124.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	1.00	2.58	Days	5.73%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	1.00	1.00	N°	2.22%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	601
Fugro	20	240	/	3072
Total	25	300	/	3673

Lost & Damaged

No equipment lost or damaged

Deliverables

Mob sign-off information uploaded to client Sharepoint: lifting kit register/certs/COSHH register/PAT certs/DEME container testing

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Lift Plan to be updated with slightly modified sling spread for lifting of dolly and vibrohammer

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

01/06/2022

Client Representative



31/05/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	13	**Date:**	01/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH26 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	18
Environmental Incident	0	/	0
Shift Handover Talk	2	/	25
Permit to Work	2	/	25
Mob Induction	0	/	27
HOC Cards	1	/	32
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	11
Shift Task Briefing	2	/	15
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: General Work / Lifting Operations

HOCs : Unauthorised personnel on the cantilever deck during drilling ops

Activities performed these 24 hours

Completed run in of the conductor casing / Wait on AM low tide slack for vibrohammer operations / Casing advanced to 2.2m bml using vibrohammer / Completed reconstruction of the Drill and Cantilever deck / Run the 7" casing / Commenced drilling ops / Commenced CPT testing

Planned Work for Next 24 Hours

Continuation of BH26 sampling and CPT operations from 2.50m bml

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.1	0.6	0.1	0.7	
Wave height (Hs)	m	0.2	0.1	0.2	0.3	Erroneous data 20:00 to 24:00
Wind direction	Degrees	WNW	NE	SSW	W	
Wind speed (m/s)	m/s	6	5	0	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
01/0600	WNW	6	7	0.2	NNE	0.3	4	-	0.0	-	0.3	0.5
01/0900	NNE	6	8	0.2	NNE	0.3	4	-	0.0	-	0.3	0.5
01/1200	NE	5	7	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
01/1500	ENE	3	4	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
01/1800	SSW	0	1	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
01/2100	SW	2	3	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
02/0000	W	3	4	0.1	NNE	0.2	3	-	0.0	-	0.2	0.3
02/0300	WNW	1	2	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
02/0600	SE	2	2	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
02/0900	SE	2	3	0.0	S	0.1	12	-	0.0	-	0.1	0.2
02/1200	SE	3	4	0.1	S	0.1	12	-	0.0	-	0.1	0.2
02/1500	SSE	5	6	0.1	S	0.1	12	-	0.0	-	0.2	0.3
02/1800	SSW	6	8	0.2	S	0.1	12	S	0.1	9	0.2	0.4
02/2100	SW	5	7	0.1	S	0.2	12	SSW	0.1	9	0.3	0.4
03/0000	SSW	3	4	0.2	S	0.3	12	-	0.0	-	0.3	0.6
03/0300	N	2	3	0.0	S	0.4	11	-	0.0	-	0.4	0.7
03/0600	N	5	7	0.3	S	0.3	11	S	0.1	8	0.4	0.7
03/0900	NNE	6	8	0.2	S	0.3	10	SSE	0.1	7	0.4	0.6
03/1200	NNE	7	9	0.2	S	0.3	10	SSE	0.1	7	0.4	0.6
03/1500	N	6	8	0.4	S	0.3	10	SSE	0.1	7	0.5	0.9
03/1800	N	8	10	0.5	S	0.4	10	-	0.0	-	0.7	1.1
03/2100	N	8	11	0.6	S	0.4	10	-	0.0	-	0.7	1.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	02:00	02:00	Vibrohammer Operations	Conductor casing @ 0.85m BML, DTM = 46.60m / Fit anti-vibration slips / Connected main block to vibrohammer / Vibrohammer lifted and installed on dolly / Current forcing casing against slips - unable to centralise on crane / Wait on slack tide
02:00	02:30	00:30	Standby Current Speed - Casing	Lunch / Waiting on slack tide to advance conductor casing
02:30	04:30	02:00	Fugro Downtime	Waiting on slack water for vibrohammer ops / Vibrohammer removed to seafastenings / Strops extended with following request from Neptune Captain
04:30	05:00	00:30	Vibrohammer Operations	Current speed reducing / commence vibrohammer operations / Completed vibrohammer - conductor casing advanced to 2m bml
05:00	06:45	01:45	Run-in Conductor Casing	Disconnect vibrohammer and place back in seafastening / Reconnect crane to dolly and remove from conductor string / Lift dolly back to tipper and lower to deck / Cantilever cleared of remaining equipment
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:15	00:15	Drill and Cantilever - Reconstruct	Tool box talk on todays tasks
07:15	10:30	03:15	Drill and Cantilever - Reconstruct	Install wire onto Dando / Lift on and secure CPT Rams to CR2 / Lift on CPT stand onto cantilever / Plumb up CPT ram hydraulics
10:30	12:00	01:30	Drill and Cantilever - Reconstruct	7" casing lifted to cantilever / Geobor barrels set out / Lift deck clamp onto cantilever
12:00	12:30	00:30	Drill and Cantilever - Reconstruct	Lunch
12:30	15:00	02:30	Drill and Cantilever - Reconstruct	Rigged water hoses to Comacchio / 10000L water tank filled / Fuel up Comacchio / Remaining 7" casing, rod shute and NWY rods lifted onto cantilever
15:00	16:30	01:30	Run-in 7" Casing	Run-in 7" casing to mudline
16:30	18:10	01:40	Push Sampling	Push from 0.00-1.00m bml (Shelby on NWY rods) / No recovery / Repeat push with thick walled - approx 1cm of sample
18:10	18:45	00:35	Advance/Washbore 7" casing	Client reps instructs to washbore 7" casing down to 2.00m BML and base of conductor casing followed by CPT
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	19:15	00:15	Run-in 7" Casing	TBT on Drilling, sampling and CPT operations
19:15	19:30	00:15	Advance/Washbore 7" casing	Continue to advance 7" casing from 1.00m to 2.00m BML
19:30	20:25	00:55	Run-in Geobor Casing	Move 7" casing, NWY rods and rod shute from the cantilever / Geobor lifted onto cantilever

DOME

Summary of Events

Begin	End	Duration	Type	Description
20:25	21:00	00:35	Run-in Geobor Casing	Run in Geobor to 2.00m BML
21:00	23:00	02:00	CPT Operations	Sheave up CPT wire / Swing in CPT beam
23:00	23:25	00:25	CPT Operations	CPT push from 2.00m / Refusal at 3.41m BML
23:25	23:35	00:10	CPT Operations	Run out CPT Tool and disconnect beam
23:35	24:00	00:25	Push Sampling	Push Sample from 2.00m to 2.50 bml / No recovery / BH26 @ 2.00m (sampled to 2.50m)

Activity Summary

Activity	Today	Planned	To Date	Progress
Fugro Downtime	2:00	0:00	2:00	0.64%
Advance/Washbore 7" casing	0:50	0:00	0:50	0.27%
Shift Handover Talk	0:30	0:00	1:00	0.32%
Offshore Resupply	0:00	0:00	0:20	0.11%
Neptune arrival to Falmouth	0:00	0:00	17:35	5.64%
Mobilisation	0:00	168:00	208:25	66.91%
Drill and Cantilever - Reconstruct	8:00	0:00	18:55	6.07%
Transit from Falmouth to Site	0:00	34:00	44:45	14.37%
Run-in Conductor Casing	1:45	0:00	5:40	1.82%
Vibrohammer Operations	2:30	0:00	2:30	0.80%
Run-in 7" Casing	1:45	0:00	1:45	0.56%
Run-in Geobor Casing	1:30	0:00	1:30	0.48%
Push Sampling	2:05	0:00	2:05	0.67%
CPT Operations	2:35	0:00	2:35	0.83%
Standby Current Speed - Casing	0:30	0:00	1:35	0.51%
Total	24:00	202:00	311:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.00	0.00	8.69	Days	124.14%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.00	0.00	0.00	Days	0.00%
1.9 - Crew change per person each way	LS	0.00	0.00	0.00	N°	0.00%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.00%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.00	1.00	3.58	Days	7.96%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.00	1.00	2.00	N°	4.44%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Nights)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12
Aaron Brown	Lab Technician (Nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	661
Fugro	21	252	/	3324
Total	26	312	/	3985

Lost & Damaged

No equipment lost or damaged.

Deliverables

Drill kit inventory TBC by Fugro

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Lift Plan LP002 Conductor Casing and Method Statement MS004 Drilling and Casing Operations updated following feedback on conductor casing installation. Revised docs to be uploaded to Sharepoint.

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

02/06/2022

Client Representative



01/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	14	**Date:**	02/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH 26 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	20
Environmental Incident	0	/	0
Shift Handover Talk	2	/	27
Permit to Work	2	/	27
Mob Induction	0	/	27
HOC Cards	1	/	33
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	12
Shift Task Briefing	0	/	15
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General PTW / Lifting Operations PTW, (Issued by DEME)

HOC: Positive - driller instructed crew to exit cantilever during Neptune preload checks/adjustment

Activities performed these 24 hours

Continuation of drilling operations at BH26/ CPT / Push Sampling

Planned Work for Next 24 Hours

Continuation of drilling operations at BH26 / Offshore resupply

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.2	0.9	0.2	0.8	
Wave height (Hs)	m	0.2	0.1	0.3	0.5	
Wind direction	Degrees	S	SSE	SSW	SW	
Wind speed (m/s)	m/s	2	5	7	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
02/0600	S	2	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
02/0900	S	3	4	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
02/1200	SSE	5	6	0.1	S	0.1	12	-	0.0	-	0.2	0.3
02/1500	S	6	8	0.2	S	0.1	12	SSW	0.1	9	0.2	0.4
02/1800	SSW	7	9	0.3	S	0.1	12	SSW	0.1	9	0.4	0.6
02/2100	SSW	6	8	0.4	S	0.2	12	SSW	0.1	9	0.4	0.7
03/0000	SW	3	4	0.1	S	0.4	12	-	0.0	-	0.4	0.7
03/0300	NNW	2	2	0.1	S	0.4	12	-	0.0	-	0.4	0.7
03/0600	NNE	5	6	0.3	S	0.3	11	-	0.0	-	0.4	0.7
03/0900	ENE	4	5	0.1	S	0.4	11	-	0.0	-	0.4	0.7
03/1200	E	4	5	0.1	S	0.4	11	-	0.0	-	0.4	0.7
03/1500	ENE	4	6	0.2	S	0.4	10	NE	0.1	5	0.4	0.7
03/1800	NE	6	7	0.4	S	0.3	10	NE	0.2	5	0.5	0.9
03/2100	NNE	6	8	0.5	S	0.3	10	NE	0.3	5	0.7	1.1
04/0000	E	6	8	0.5	NE	0.4	5	S	0.3	10	0.7	1.2
04/0300	NE	8	10	0.6	NE	0.5	5	S	0.2	10	0.8	1.3
04/0600	NE	9	12	0.7	NE	0.6	5	ESE	0.2	4	0.9	1.6
04/0900	NE	6	8	0.5	NE	0.6	5	ESE	0.3	4	0.9	1.4
04/1200	NE	7	10	0.6	NE	0.8	5	ESE	0.2	4	1.0	1.7
04/1500	NNE	8	10	0.6	NE	0.7	5	ESE	0.1	4	0.9	1.5
04/1800	NNE	7	10	0.6	ESE	0.5	4	SSW	0.3	8	0.8	1.3
04/2100	N	8	10	0.6	ESE	0.3	4	SSW	0.3	8	0.7	1.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Push Sampling	Continuation of push sample 2.00m to 2.50m, no recovery
00:15	00:40	00:25	Fuel up/Wash Down/Break	Lunch
00:40	01:25	00:45	Geobore NCD	NCD Geobore to 2.50.
01:25	02:15	00:50	Push Sampling	Push sample 2.50m to 2.80m, no recovery
02:15	02:30	00:15	Geobore NCD	NCD Geobore to 3.50m
02:30	02:40	00:10	CPT Operations	Set up CPT push
02:40	03:00	00:20	CPT Operations	CPT Push 3.50m to 5.00m
03:00	03:05	00:05	Push Sampling	Disconnect beam set up for rotary ops
03:05	03:30	00:25	Push Sampling	Push sample 3.50m to 4.50m, 0.35rec
03:30	04:10	00:40	Geobore NCD	NCD Geobore 3.50 to 4.50m
04:10	04:45	00:35	Fugro Downtime - Breakdown	Seals failed on water swivel. Replaced
04:45	05:15	00:30	Geobore NCD	NCD Geobore to 5.00m
05:15	05:35	00:20	Push Sampling	Push sample 5.00m to 6.00m, no recovery
05:35	05:50	00:15	Push Sampling	Push sample 5.00m to 6.00m, 0.30m recovery
05:50	06:20	00:30	Geobore NCD	NCD Geobore 5.00m to 5.50m
06:20	06:35	00:15	Push Sampling	Push sample 5.50m to 6.50, 0.40m recovery
06:35	07:00	00:25	Shift Handover Talk	Shift handover / Day shift sign onto PTW
07:00	08:00	01:00	Fuel up/Wash Down/Break	TBT / Daily inspections / Fuel up of the plant
08:00	08:30	00:30	Geobore NCD	NCD to 6.50m
08:30	08:55	00:25	CPT Operations	CPT Push 6.50m to 8.00m
08:55	09:10	00:15	Geobore NCD	NCD to 7.00m
09:10	09:30	00:20	Push Sampling	Push sample from 7.00m to 8.00m
09:30	09:45	00:15	Geobore NCD	NCD 7.00m to 8.00m
09:45	10:30	00:45	CPT Operations	CPT push 8.00m to 9.50m
10:30	11:20	00:50	Geobore NCD	NCD 8.00m to 9.50m
11:20	11:55	00:35	Push Sampling	Push Sample 9.50m to 10.50m
11:55	12:10	00:15	Geobore NCD	NCD 9.50m to 10.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
12:10	12:40	00:30	Fuel up/Wash Down/Break	Lunch
12:40	13:20	00:40	CPT Operations	CPT Push 10.50m to 12.00m
13:20	13:50	00:30	Push Sampling	Push sample 11.00m to 12.00m
13:50	14:15	00:25	Geobore NCD	NCD from 11.00m to 12.00m
14:15	14:40	00:25	CPT Operations	CPT Push sample 12.00m to 13.50m
14:40	15:10	00:30	Geobore NCD	NCD from12.00m to 13.50m
15:10	15:30	00:20	Push Sampling	Push sample from 13,50m to 14.40m
15:30	15:55	00:25	Geobore NCD	NCD 13.50 to 14.50
15:55	16:30	00:35	CPT Operations	CPT push from 14.50m to 16.00m
16:30	16:55	00:25	Geobor Coring	NCD to 16.00m
16:55	17:20	00:25	CPT Operations	CPT push from 16.00m to 17.50m
17:20	17:30	00:10	Geobore NCD	NCD to 16.50m
17:30	17:55	00:25	Push Sampling	Push sample from 16.50m to 17.50m
17:55	18:10	00:15	Geobore NCD	NCD to 17.50m
18:10	18:25	00:15	Push Sampling	Push sample from 17.50 to 18.50m
18:25	18:35	00:10	Geobore NCD	Shut plant down commence wash down
18:35	18:45	00:10	Fuel up/Wash Down/Break	Fuel up plant
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Day shift sign on to PTW
19:00	19:15	00:15	Shift Handover Talk	TBT on drilling / sampling / CPT operations
19:15	19:35	00:20	Push Sampling	Push sample 18.50m to 19.50, 0.38m recovered
19:35	19:55	00:20	Push Sampling	Push sample 18.50m to 19.50m , 0.62m recovered
19:55	20:15	00:20	Geobore NCD	NCD 18.50m to 19.50m
20:15	20:25	00:10	Fugro Downtime	Setup CPT ops (Tool did not latch so classed as downtime)
20:25	20:55	00:30	Fugro Downtime	CPT push from 19.50m to 21.00m (Tool did not latch so classed as downtime)
20:55	21:10	00:15	Geobore NCD	Set up for rotary ops
21:10	21:30	00:20	Geobore NCD	NCD 19.50m to 20.00m
21:30	22:00	00:30	Push Sampling	Push sample 20.00m to 21.00m, 0.65 recovered
22:00	22:30	00:30	Geobore NCD	NCD 20.00m to 21.00m
22:30	23:10	00:40	Push Sampling	Push sample 21.00m to 21.70m, 0.70 recovered
23:10	23:35	00:25	Push Sampling	Push sample 21.70m to 22.00m, 0.30 recovered
23:35	23:40	00:05	Geobore NCD	NCD 21.00m to 22.00m
23:40	24:00	00:20	Push Sampling	Push sample 22.00m to 22.10m, 0.10 recovered, Shelby tube damaged

Activity Summary

Activity	Today	Planned	To Date	Progress
Fuel up/Wash Down/Break	2:05	0:00	2:05	0.62%
Geobore NCD	8:10	0:00	8:10	2.43%
Fugro Downtime	0:40	0:00	2:40	0.79%
Advance/Washbore 7" casing	0:00	0:00	0:50	0.25%
Shift Handover Talk	0:55	0:00	1:55	0.57%
Offshore Resupply	0:00	0:00	0:20	0.10%
Fugro Downtime - Breakdown	0:35	0:00	0:35	0.17%
Neptune arrival to Falmouth	0:00	0:00	17:35	5.24%
Mobilisation	0:00	168:00	208:25	62.12%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	5.64%
Transit from Falmouth to Site	0:00	34:00	44:45	13.34%
Run-in Conductor Casing	0:00	0:00	5:40	1.69%
Vibrohammer Operations	0:00	0:00	2:30	0.75%

Activity Summary

Activity	Today	Planned	To Date	Progress
Run-in 7" Casing	0:00	0:00	1:45	0.52%
Run-in Geobor Casing	0:00	0:00	1:30	0.45%
Push Sampling	7:25	0:00	9:30	2.83%
Geobor Coring	0:25	0:00	0:25	0.12%
CPT Operations	3:45	0:00	6:20	1.89%
Standby Current Speed - Casing	0:00	0:00	1:35	0.47%
Total	24:00	202:00	335:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.8645	4.4445	Days	9.8767%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	3.0000	N°	6.6667%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12
Nick Powney	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	721
Fugro	21	252	/	3576
Total	26	312	/	4297

Lost & Damaged

Lost & Damaged

Water swivel seals changed out
CPT load cell non-functioning whilst installed. Review option to either repair on site or spare to be sent to site.

Deliverables

Fugro to confirm access for GAIA/Sharepoint data delivery system

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

1.25hrs downtime today due to water swivel seal replacement and non-latch CPT test plus 2hrs for sling change on 1/6/22 (24-3.25hrs = 20.75hrs operational = 0.8645 days)
Next TBT to highlight importance of ensuring CPT tool has properly latched prior to testing. Occurred twice so far - first time was identified prior to test.

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

03/06/2022

Client Representative



02/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	15	**Date:**	03/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH26 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	3	/	23
Environmental Incident	0	/	0
Shift Handover Talk	0	/	27
Permit to Work	0	/	27
Mob Induction	0	/	27
HOC Cards	2	/	35
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	13
Shift Task Briefing	2	/	17
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General Permit to Work / Lifting Permit

HOC : Good use of catcher guard observed / Driller asked the drill team to leave the cantilever during the vessel jacking system pressure test.

Activities performed these 24 hours

Sampling and CPT operations from 22.10m bml to 38.40m bml

Planned Work for Next 24 Hours

Continue sampling

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.9	0.4	1.0	
Wave height (Hs)	m	0.8	0.7	1.0	0.8	
Wind direction	Degrees	ESE	NE	N	NE	
Wind speed (m/s)	m/s	0.4	0.6	1.0	0.5	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
03/0600	ESE	3	3	0.0	S	0.4	11	-	0.0	-	0.4	0.7
03/0900	ENE	4	5	0.1	S	0.4	11	-	0.0	-	0.4	0.7
03/1200	NE	6	7	0.2	S	0.4	11	-	0.0	-	0.4	0.7
03/1500	N	7	9	0.3	S	0.4	10	-	0.0	-	0.5	0.9
03/1800	N	7	9	0.3	S	0.4	10	-	0.0	-	0.5	0.9
03/2100	NE	8	11	0.6	S	0.4	10	NE	0.2	4	0.7	1.2
04/0000	ENE	9	11	0.6	NE	0.4	4	S	0.3	9	0.8	1.3
04/0300	ENE	8	11	0.6	NE	0.5	4	SSW	0.3	9	0.9	1.4
04/0600	ENE	8	10	0.6	NE	0.7	4	SSW	0.2	9	0.9	1.6
04/0900	NE	8	11	0.6	NE	0.8	4	SSW	0.2	9	1.0	1.7
04/1200	NE	9	11	0.6	NE	0.8	4	SSW	0.2	9	1.1	1.8
04/1500	NNE	9	11	0.6	NE	0.7	4	SSW	0.2	8	1.0	1.6
04/1800	NNE	8	11	0.6	NE	0.7	4	SSW	0.2	8	1.0	1.6
04/2100	NE	7	9	0.6	NE	0.6	4	SSW	0.2	8	0.9	1.4
05/0000	E	6	8	0.5	NE	0.5	4	SSW	0.2	8	0.7	1.2
05/0300	E	6	7	0.5	NE	0.4	4	SSW	0.2	8	0.6	1.1
05/0600	ENE	6	8	0.5	NE	0.5	4	SSW	0.2	8	0.7	1.2
05/0900	NE	7	9	0.5	NE	0.5	4	SSW	0.2	8	0.8	1.3
05/1200	NNE	7	9	0.5	NE	0.5	4	SSW	0.2	8	0.8	1.3
05/1500	N	7	9	0.6	NE	0.4	4	SSW	0.2	7	0.7	1.2
05/1800	N	7	9	0.6	NE	0.4	4	SSW	0.2	7	0.7	1.2
05/2100	NNE	7	9	0.5	NE	0.4	4	SSW	0.2	7	0.7	1.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	BH26 @ 22.10m bml / Lunch
00:30	01:00	00:30	DEME - Vessel Operations	Jack-up testing leg pressures
01:00	01:30	00:30	Downhole Hammer Sampling	Sample 22.10m to 22.40m for 100 blows, 0.30 recovered
01:30	01:45	00:15	Geobore NCD	NCD 22.00m to 22.50m
01:45	01:55	00:10	CPT Operations	Set up for CPT operations
01:55	02:20	00:25	CPT Operations	CPT push from 22.50m, refusal@23.65m
02:20	02:30	00:10	Push Sampling	Set-up for rotary operations
02:30	03:00	00:30	Push Sampling	Thick walled push sample from 22.50m to 23.00m, 0.50m recovered
03:00	03:15	00:15	Geobore NCD	NCD 22.50m to 23.50m
03:15	03:50	00:35	Push Sampling	Thick walled Shelby push 23.50m to 23.9m, 0.30m recovered.
03:50	04:30	00:40	Geobor Coring	Core run 23.50m to 24.50m, 0.60m core slipped retrieve with short finger catcher spring
04:30	05:50	01:20	Geobor Coring	Core run, 24.50m to 25.50m / Core slipped / Retrieve with short fingers then long fingers
05:50	06:10	00:20	Geobore NCD	NCD back to 25.50m and pump clear cuttings
06:10	06:20	00:10	CPT Operations	Set up for CPT ops
06:20	06:40	00:20	CPT Operations	CPT push 25.50m to 27.00m
06:40	06:45	00:05	Fuel up/Wash Down/Break	Fuel up plant
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign on to PTW
07:00	07:15	00:15	Fuel up/Wash Down/Break	TBT setting up
07:15	07:45	00:30	Fuel up/Wash Down/Break	Daily inspections
07:45	08:30	00:45	Geobor Coring	Core sample 25.50-27.00m
08:30	08:55	00:25	Geobore NCD	NCD 25.50 to 27.00m
08:55	09:20	00:25	Push Sampling	Shelby thick walled 27.00m to 27.60m
09:20	09:45	00:25	Geobore NCD	NCD 27.00m 28.00m
09:45	10:00	00:15	CPT Operations	Set up for CPT @ 28.00m
10:00	10:15	00:15	DEME - Vessel Operations	Jack up pressure test
10:15	10:35	00:20	CPT Operations	CPT 28.00m to 29.45m
10:35	10:50	00:15	Geobore NCD	NCD 28.00m to 28.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
10:50	11:10	00:20	Push Sampling	Shelby thick wall catcher, 28.50m to 29.00m
11:10	11:30	00:20	Geobore NCD	NCD 28.50m to 29.50m
11:30	12:00	00:30	CPT Operations	CPT 29.50m to 30.95m
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	12:50	00:20	Geobore NCD	NCD 29.50m to 31.00m
12:50	13:10	00:20	Push Sampling	Shelby thick wall with catcher 31.00m to 32.00m
13:10	13:25	00:15	DEME - Vessel Operations	Operations stopped while barge stabilises
13:25	14:00	00:35	Geobore NCD	NCD - High torque, ream hole
14:00	14:25	00:25	CPT Operations	CPT 32.00m to 33.50m
14:25	14:40	00:15	Geobore NCD	NCD 32.00m to 32.50m
14:40	15:10	00:30	Offshore Resupply	Operations stopped, lift on 3 pallets of supplies for the barge
15:10	16:00	00:50	MMO Pre-Start Watch	Waiting MMO permissions to restart drilling operations
16:00	16:30	00:30	Push Sampling	Shelby thick walled with catcher 32.50 to 33.10m
16:30	16:55	00:25	Geobore NCD	NCD 32.50m to 33.50m
16:55	17:20	00:25	CPT Operations	CPT push 33.50m to 35.00m
17:20	17:30	00:10	Geobore NCD	NCD 33.50m to 34.00m
17:30	17:50	00:20	DEME - Vessel Operations	Operations stopped while barge stabilises
17:50	18:05	00:15	Push Sampling	Shelby thick walled with catcher 34.00m to 35.00m
18:05	18:30	00:25	Geobore NCD	NCD 34.00m to 35.00m
18:30	18:45	00:15	Fuel up/Wash Down/Break	Fuel up plant
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto the PTW / BH26@35.00m
19:00	19:10	00:10	Fuel up/Wash Down/Break	TBT on drilling
19:10	19:30	00:20	Push Sampling	Shelby thick walled with metal catcher, 35.00m to 36.00m, 0.9m recovered
19:30	19:45	00:15	Geobore NCD	NCD 35.00m to 36.00m
19:45	19:55	00:10	CPT Operations	Set up for CPT ops
19:55	20:35	00:40	CPT Operations	CPT Push 36.00m
20:35	21:10	00:35	Push Sampling	Shelby thick wall, metal catcher, 36.00m to 36.80m
21:10	21:30	00:20	Geobore NCD	NCD 36.00m to 37.00m
21:30	21:50	00:20	Fuel up/Wash Down/Break	Waiting clients decision on next test
21:50	22:15	00:25	Push Sampling	Shelby thick wall, 37.00m to 37.70m
22:15	22:35	00:20	Geobore NCD	NCD 37.00m to 38.00m
22:35	23:15	00:40	Push Sampling	Shelby thick wall, 38.00m to 38.40m.
23:15	24:00	00:45	Downhole Hammer Sampling	Hammer sample 38.00m to 38.40m, 0.40m recovered / EoS BH26 @ 38.00m bml (sampled to 38.40m bml)

Activity Summary

Activity	Today	Planned	To Date	Progress
MMO Pre-Start Watch	0:50	0:00	0:50	0.23%
DEME - Vessel Operations	1:20	0:00	1:20	0.37%
Fuel up/Wash Down/Break	2:35	0:00	4:40	1.30%
Geobore NCD	5:20	0:00	13:30	3.76%
Fugro Downtime	0:00	0:00	2:40	0.74%
Advance/Washbore 7" casing	0:00	0:00	0:50	0.23%
Shift Handover Talk	0:30	0:00	2:25	0.67%
Offshore Resupply	0:30	0:00	0:50	0.23%
Fugro Downtime - Breakdown	0:00	0:00	0:35	0.16%
Neptune arrival to Falmouth	0:00	0:00	17:35	4.89%
Mobilisation	0:00	168:00	208:25	57.97%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	5.26%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Transit from Falmouth to Site	0:00	34:00	44:45	12.45%
Run-in Conductor Casing	0:00	0:00	5:40	1.58%
Vibrohammer Operations	0:00	0:00	2:30	0.70%
Run-in 7" Casing	0:00	0:00	1:45	0.49%
Run-in Geobor Casing	0:00	0:00	1:30	0.42%
Push Sampling	5:05	0:00	14:35	4.06%
Downhole Hammer Sampling	1:15	0:00	1:15	0.35%
Geobor Coring	2:45	0:00	3:10	0.88%
CPT Operations	3:50	0:00	10:10	2.83%
Standby Current Speed - Casing	0:00	0:00	1:35	0.44%
Total	24:00	202:00	359:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	5.4445	Days	12.0989%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	4.0000	N°	8.8889%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	781

DOME

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Fugro	21	252	/	3828
Total	26	312	/	4609

Lost & Damaged

Wiring checked on wireline CPT tool following intermittent connection issues whilst tool deployed. One wire found to be slightly loose. Connection re-fastened and tested by electrician and CPT operator.

Deliverables

Processed CPT data and drill logs to be uploaded to SPL Sharepoint until GAIA access confirmed for SPL personnel

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

04/06/2022

Client Representative



03/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	16	**Date:**	04/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH26 Arklow bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	25
Environmental Incident	0	/	0
Shift Handover Talk	2	/	29
Permit to Work	0	/	27
Mob Induction	0	/	27
HOC Cards	3	/	38
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	14
Shift Task Briefing	2	/	19
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General Permit to Work / Lifting Permit

HOC : Water from transfer pump to mixer siphons after pump switches off / CPT, Geotech's controlling the surface water on the deck by using mops etc./ Comacchio lifting strops left out on deck when not in use

Wave height limitation for equipment transfer between Neptune and support vessel reduced to 0.7m Hs following review of observed conditions during previous lifts. Agreed with all parties.

Activities performed these 24 hours

Drilling / CPT Operations/ Wireline operations

Planned Work for Next 24 Hours

Trip out Geobor casing / 7" casing / Conductor casing / Relocate to BH1

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	1.0	0.6	1.1	
Wave height (Hs)	m	0.9	1.2	1.1	1.0	
Wind direction	Degrees	NE	NE	NNE	E	
Wind speed (m/s)	m/s	9	8	7	4	

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
04/0600	NE	10	13	0.7	NE	1.0	4	SSW	0.2	9	1.3	2.1
04/0900	NE	11	14	0.7	NE	1.2	4	SSW	0.2	9	1.4	2.4
04/1200	NE	11	14	0.8	NE	1.3	4	SSW	0.2	9	1.5	2.5
04/1500	NE	9	11	0.6	NE	1.2	4	SSW	0.2	8	1.4	2.3
04/1800	NNE	8	11	0.6	NE	0.9	4	SSW	0.2	8	1.1	1.9
04/2100	ENE	7	9	0.6	NE	0.7	4	SSW	0.2	8	0.9	1.5
05/0000	E	8	11	0.6	NE	0.6	4	SSW	0.2	8	0.9	1.4
05/0300	E	7	9	0.5	NE	0.5	4	SSW	0.2	8	0.8	1.3
05/0600	NE	6	8	0.5	NE	0.6	4	SSW	0.2	8	0.8	1.3
05/0900	ENE	5	6	0.4	NE	0.6	4	SSW	0.2	8	0.8	1.3
05/1200	ENE	6	7	0.5	NE	0.6	4	SSW	0.2	8	0.8	1.3
05/1500	NE	4	5	0.3	NE	0.5	4	SSW	0.2	7	0.6	1.0
05/1800	NNE	5	7	0.4	NE	0.4	4	SSW	0.2	7	0.6	1.1
05/2100	NNE	4	5	0.2	NE	0.5	4	SSW	0.1	7	0.5	0.9
06/0000	ENE	3	3	0.0	NE	0.5	4	SSW	0.1	7	0.5	0.9
06/0300	E	3	4	0.1	NE	0.5	4	SSW	0.2	7	0.6	0.9
06/0600	SE	4	5	0.2	NE	0.5	4	S	0.2	6	0.6	0.9
06/0900	E	3	4	0.1	NE	0.6	4	S	0.1	6	0.6	1.0
06/1200	E	3	3	0.0	NE	0.5	4	S	0.2	6	0.5	0.9
06/1500	E	2	3	0.0	NE	0.4	4	S	0.2	6	0.5	0.8
06/1800	S	2	2	0.0	S	0.3	6	NE	0.2	4	0.4	0.6
06/2100	S	1	2	0.0	S	0.3	6	NE	0.1	4	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	BH26 @ 38.00m bml (sampled to 38.40m bml) / Lunch
00:30	01:55	01:25	Geobor Coring	Core run 38.30m to 39.50m (short finger catcher spring) / Core slipped / String blocked by sample / Attempt to clear string - take off 3m length of Geobor / Attempt to clear string / String cleared /Latch inner barrel (long finger catcher springs) / Reattach 3m length of Geobor / Push back down to 39.50m, 0.20 recovered
01:55	02:35	00:40	Geobor NCD	NCD 38.30m to 39.50m
02:35	03:27	00:52	Geobor Coring	Core run 39.50m to 40.50m with serrated catcher spring, 1.00m recovered
03:27	04:30	01:03	Geobor Coring	Core run 40.50m to 41.50m with serrated catcher spring, 0.90m recovered
04:30	05:25	00:55	Geobor Coring	Core run 41.50m to 42.80m with serrated catcher spring, 1.40m recovered
05:25	06:15	00:50	Geobor Coring	Core run 42.80m to 44.30m with serrated catcher spring, 1.50m recovered
06:15	06:45	00:30	Geobor Coring	Core run 44.30m 45.80m
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:25	00:25	Fuel up/Wash Down/Break	TBT and safety sweep
07:25	08:20	00:55	Geobor Coring	Continue drilling ops from 45.80m to 47.30m
08:20	09:20	01:00	Fugro Downtime - Breakdown	Water swivel leaking / Halt drilling ops to replace seals / 3m length of Geobor removed to allow head access
09:20	09:40	00:20	DEME - Vessel Operations	Stabilise barge legs
09:40	10:25	00:45	Geobor Coring	Resume drilling operations
10:25	11:15	00:50	Geobor Coring	Core run 48.80m to 50.30m
11:15	12:00	00:45	Geobor Coring	Core run 50.30m to 51.80m
12:00	12:50	00:50	Fuel up/Wash Down/Break	Lunch (CPT operator and Engineer on deck checking and testing repairs made to CPT winch wire
12:50	13:40	00:50	Geobor Coring	Core run 51.80 to 53.30m bml / CPT test continues to show intermittent fault during testing / Decision to re-terminate wire
13:40	14:40	01:00	Geobor Coring	Core run 53.30m to 54.80m, (0.20m to target sample depth / 1.30m start of rathole)
14:40	15:40	01:00	Geobor Coring	Core run from 54.80m to 56.30
15:40	16:25	00:45	Geobor Coring	Core run from 56.30m to 57.80m
16:25	17:15	00:50	Geobor Coring	Core run from 57.80m to 59.30m
17:15	17:40	00:25	Wireline Geophys	BH29 @ 59.30m bml / Start flushing hole and setting up to pull casing back for geophys logging
17:40	18:05	00:25	Geophys - 1st Casing Pull	Pull Geobore back to 40.00m BML

DOME

Summary of Events

Begin	End	Duration	Type	Description
18:05	18:45	00:40	Wireline Geophys	Assist Wireline Engineers to set up their equipment, Fuel up plant
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign on to PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on wireline ops
19:15	22:55	03:40	Wireline Geophys	BH26 @ 59.30m BML, Geobor @ 40.00m BML / Begin wireline logging / Caliper tool in at 19:15, out 20:10 / ABI tool in 20:20, out 21:20 / PSL in 21:30 out 22:55
22:55	23:35	00:40	Geophys - Additional Casing Pull	Pull Geobore back to 10.00m BML and setup for wireline logging.
23:35	24:00	00:25	Wireline Geophys	Geobor @10.00m BML, begin wireline logging / BH collapsed to 10.00m BML / E.O.H confirmed by client

Activity Summary

Activity	Today	Planned	To Date	Progress
MMO Pre-Start Watch	0:00	0:00	0:50	0.22%
DEME - Vessel Operations	0:20	0:00	1:40	0.43%
Geophys - Additional Casing Pull	0:40	0:00	0:40	0.17%
Geophys - 1st Casing Pull	0:25	0:00	0:25	0.11%
Fuel up/Wash Down/Break	2:00	0:00	6:40	1.74%
Geobor NCD	0:40	0:00	14:10	3.69%
Fugro Downtime	0:00	0:00	2:40	0.70%
Advance/Washbore 7" casing	0:00	0:00	0:50	0.22%
Shift Handover Talk	0:30	0:00	2:55	0.76%
Offshore Resupply	0:00	0:00	0:50	0.22%
Fugro Downtime - Breakdown	1:00	0:00	1:35	0.41%
Neptune arrival to Falmouth	0:00	0:00	17:35	4.58%
Mobilisation	0:00	168:00	208:25	54.35%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	4.93%
Transit from Falmouth to Site	0:00	34:00	44:45	11.67%
Run-in Conductor Casing	0:00	0:00	5:40	1.48%
Vibrohammer Operations	0:00	0:00	2:30	0.65%
Run-in 7" Casing	0:00	0:00	1:45	0.46%
Run-in Geobor Casing	0:00	0:00	1:30	0.39%
Push Sampling	0:00	0:00	14:35	3.80%
Downhole Hammer Sampling	0:00	0:00	1:15	0.33%
Geobor Coring	13:15	0:00	16:25	4.28%
CPT Operations	0:00	0:00	10:10	2.65%
Wireline Geophys	5:10	0:00	5:10	1.35%
Standby Current Speed - Casing	0:00	0:00	1:35	0.41%
Total	24:00	202:00	383:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9583	6.4028	Days	14.2284%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	5.0000	N°	11.1111%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	841
Fugro	21	252	/	4080
Total	26	312	/	4921

Lost & Damaged

Water swivel seal replaced / CPT tool tested following repair to existing wire terminations / Intermittent fault remains / Cable to be re-terminated prior to start of BH01 testing

Deliverables

Drill logs and MPR for BH26 uploaded to temporary folder on SPL Sharepoint until GAIA access arranged / CPT processed data to be uploaded / Sample recovery list and BH logs to be uploaded following completion of hole

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Request from DEME to complete crew transfer outside of scheduled crew changes between boreholes - under review with SPL and Fugro (PSCS)

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

05/06/2022

Client Representative



04/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	17	**Date:**	05/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH26 / Transit to BH01				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	27
Environmental Incident	0	/	0
Shift Handover Talk	2	/	31
Permit to Work	2	/	29
Mob Induction	0	/	27
HOC Cards	2	/	40
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	15
Shift Task Briefing	2	/	21
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General Permit to Work / Lifting Permit
HOCs: Good comms between crane driver and signaller / Electrical cables rerouted to prevent crush

Activities performed these 24 hours

Trip-out Geobor / 7" casing / Secure the drill spread for transit / 20" conductor casing / Conductor casing secured on deck / Vessel jacked down and relocated to BH01

Planned Work for Next 24 Hours

Jack down at BH01 / Run in 20" conductor casing / commence drilling operations at BH01

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.7	0.8	N/A	1.3	1800 : In transit
Wave height (Hs)	m	0.8	0.9	N/A	1	1800 : In transit
Wind direction	Degrees	NE	NE	NE	NE	
Wind speed (m/s)	m/s	7	5	6	5	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
05/0600	NE	6	8	0.5	NE	0.6	4	SSW	0.2	8	0.8	1.4
05/0900	NE	6	8	0.5	NE	0.6	4	SSW	0.2	8	0.8	1.4
05/1200	NE	6	8	0.5	NE	0.6	4	SSW	0.2	8	0.8	1.4
05/1500	NE	6	8	0.5	NE	0.5	4	SSW	0.2	7	0.7	1.2
05/1800	NNE	6	8	0.5	NE	0.4	4	SSW	0.2	7	0.7	1.1
05/2100	NNE	6	7	0.5	NE	0.5	4	SSW	0.1	7	0.7	1.2
06/0000	NE	6	7	0.5	NE	0.5	4	SSW	0.1	7	0.7	1.2
06/0300	NE	6	8	0.5	NE	0.5	4	SSW	0.1	7	0.7	1.2
06/0600	NNE	6	8	0.5	NE	0.4	4	S	0.1	6	0.7	1.1
06/0900	NNE	6	7	0.5	NE	0.4	4	S	0.1	6	0.6	1.1
06/1200	NE	5	7	0.4	NE	0.3	4	S	0.1	6	0.5	0.9
06/1500	NE	4	5	0.2	NE	0.3	4	S	0.1	6	0.4	0.6
06/1800	NE	4	5	0.2	S	0.3	6	NE	0.1	4	0.4	0.6
06/2100	NNE	3	4	0.1	S	0.3	6	NE	0.1	4	0.3	0.6
07/0000	NNW	3	3	0.0	S	0.3	6	NE	0.1	4	0.3	0.5
07/0300	WNW	2	3	0.0	S	0.3	6	NE	0.1	4	0.3	0.5
07/0600	WSW	2	2	0.0	S	0.3	6	S	0.1	10	0.3	0.5
07/0900	SSW	2	3	0.0	S	0.2	6	S	0.1	10	0.2	0.4
07/1200	S	5	7	0.1	S	0.2	6	S	0.1	10	0.2	0.4
07/1500	S	7	9	0.4	S	0.2	6	S	0.1	10	0.4	0.7
07/1800	S	8	10	0.5	S	0.2	6	S	0.1	10	0.6	0.9
07/2100	S	7	9	0.6	S	0.4	6	-	0.0	-	0.7	1.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	03:30	03:00	Trip-out 7" Casing	Trip-out Geobor and 7" casing
03:30	06:45	03:15	Pre-Move Prep	Crane drill kit down for cantilever / Remove CPT platform / Disconnect services and lift-off CPT beam
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT on shift tasks
07:20	08:55	01:35	Trip-out Conductor Casing	Conductor casing pulled from BH26
08:55	12:00	03:05	Pre-Move Prep	Conductor casing on deck / Waiting on 1425 high tide slack for move / Start removing and making up lengths on deck in readiness for BH01
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	13:30	01:00	Pre-Move Prep	Continuation of sea fastenings and securing the deck ready for transit to BH1
13:30	18:45	05:15	Transit between BH	Jack down and commence transit to BH1
18:45	19:00	00:15	Transit between BH	Shift handover talk / Night shift sign onto PTW
19:00	24:00	05:00	Transit between BH	DP on BH1 / Commenced Jacking-up vessel / Drill crew commenced preparation work for run in of the conductor casing

Activity Summary

Activity	Today	Planned	To Date	Progress
Pre-Move Prep	7:20	0:00	7:20	1.80%
MMO Pre-Start Watch	0:00	0:00	0:50	0.20%
DEME - Vessel Operations	0:00	0:00	1:40	0.41%
Geophys - Additional Casing Pull	0:00	0:00	0:40	0.16%
Geophys - 1st Casing Pull	0:00	0:00	0:25	0.10%
Fuel up/Wash Down/Break	1:20	0:00	8:00	1.96%
Geobor NCD	0:00	0:00	14:10	3.48%
Fugro Downtime	0:00	0:00	2:40	0.65%
Advance/Washbore 7" casing	0:00	0:00	0:50	0.20%
Shift Handover Talk	0:15	0:00	3:10	0.78%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Offshore Resupply	0:00	0:00	0:50	0.20%
Fugro Downtime - Breakdown	0:00	0:00	1:35	0.39%
Neptune arrival to Falmouth	0:00	0:00	17:35	4.31%
Mobilisation	0:00	168:00	208:25	51.15%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	4.64%
Transit between BH	10:30	0:00	10:30	2.58%
Transit from Falmouth to Site	0:00	34:00	44:45	10.98%
Run-in Conductor Casing	0:00	0:00	5:40	1.39%
Vibrohammer Operations	0:00	0:00	2:30	0.61%
Run-in 7" Casing	0:00	0:00	1:45	0.43%
Run-in Geobor Casing	0:00	0:00	1:30	0.37%
Push Sampling	0:00	0:00	14:35	3.58%
Downhole Hammer Sampling	0:00	0:00	1:15	0.31%
Geobor Coring	0:00	0:00	16:25	4.03%
CPT Operations	0:00	0:00	10:10	2.49%
Wireline Geophys	0:00	0:00	5:10	1.27%
Trip-out 7" Casing	3:00	0:00	3:00	0.74%
Trip-out Conductor Casing	1:35	0:00	1:35	0.39%
Standby Current Speed - Casing	0:00	0:00	1:35	0.39%
Total	24:00	202:00	407:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	7.4028	Days	16.4507%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	6.0000	N°	13.3333%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduifr	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	901
Fugro	21	252	/	4332
Total	26	312	/	5233

Lost & Damaged

No equipment lost or damaged
CPT cable re-terminated at tool connection

Deliverables

Measure for Invoice 2 MOBILISATION COMPLETION issued to SPL for review.
Continue to upload BH data to SPL Sharepoint until GAIA access arranged (Mon 6/6/22).

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

DEME have requested the crane be stowed during any jacking operations. DEME had previously confirmed that small jacking adjustments (eg. to suit conductor casing heights) were OK to be conducted with the crane in operational position. Additional time likely required for any deck height adjustments following casing installation or following the conductor following-on during drilling operations.

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager
06/06/2022

Client Representative



05/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	18	**Date:**	06/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	29
Environmental Incident	0	/	0
Shift Handover Talk	2	/	33
Permit to Work	0	/	29
Mob Induction	0	/	27
HOC Cards	3	/	43
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	16
Shift Task Briefing	0	/	21
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General and lifting PTW (Issued by DEME) / DEME issued working at height at 0230
Hot works permit issued at 1900

HOC: Deck crew working safely during crane ops / Hydraulic hoses around Comacchio crushing electrical cables / Good comms between banksman and crane operator.

Highlighted to personnel to ensure sufficient rest periods are taken including additional rests the following day after any extended shift.

Activities performed these 24 hours

Jacked up at BH01 / Run in 20" Conductor, 7" casing/ Commenced drilling operations at BH01

Planned Work for Next 24 Hours

Continuation of drilling operations from 9.00m bml / Continue fault finding on CPT tool

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.0	1.1	1.0	0.9	
Wave height (Hs)	m	0.3	0.3	0.3	0.2	
Wind direction	Degrees	ENE	NE	NNE	NNW	
Wind speed (m/s)	m/s	5.0	6.0	3.0	4.0	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
06/0600	ENE	5	7	0.4	NE	0.3	4	S	0.1	6	0.5	0.8
06/0900	NE	5	7	0.4	NE	0.3	4	S	0.1	6	0.5	0.8
06/1200	NE	5	6	0.3	NE	0.3	4	S	0.1	6	0.5	0.8
06/1500	NNE	4	5	0.2	NE	0.3	4	S	0.1	6	0.4	0.6
06/1800	NNE	4	5	0.2	S	0.3	6	NE	0.1	4	0.4	0.6
06/2100	NNE	3	4	0.1	S	0.3	6	NE	0.1	4	0.3	0.6
07/0000	NNW	3	3	0.0	S	0.3	6	NE	0.1	4	0.3	0.5
07/0300	WNW	2	2	0.0	S	0.3	6	NE	0.1	4	0.3	0.5
07/0600	SW	2	2	0.0	S	0.2	6	S	0.1	10	0.2	0.4
07/0900	SSW	2	3	0.0	S	0.2	6	S	0.1	10	0.2	0.4
07/1200	S	5	6	0.1	S	0.2	6	S	0.1	10	0.2	0.4
07/1500	S	7	9	0.4	S	0.2	6	S	0.1	10	0.4	0.7
07/1800	S	8	10	0.5	S	0.2	6	S	0.1	10	0.6	0.9
07/2100	SSE	9	11	0.6	S	0.4	6	-	0.0	-	0.8	1.3
08/0000	SSE	9	12	0.7	S	0.7	6	-	0.0	-	1.0	1.6
08/0300	SSW	7	9	0.6	S	0.8	6	-	0.0	-	1.0	1.6
08/0600	WSW	7	9	0.4	S	0.8	6	-	0.0	-	0.9	1.5
08/0900	WSW	7	9	0.4	S	0.7	6	-	0.0	-	0.8	1.4
08/1200	WSW	6	7	0.3	S	0.6	6	-	0.0	-	0.7	1.2
08/1500	SW	6	7	0.4	S	0.5	6	-	0.0	-	0.7	1.1
08/1800	SW	6	8	0.4	S	0.6	6	-	0.0	-	0.7	1.2
08/2100	WSW	5	7	0.3	S	0.6	6	-	0.0	-	0.7	1.1

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	02:30	02:00	DEME - Vessel Operations	Neptune continues preload and jacking operations / Jacking operations completed at 0220LT / Cantilever @ 17.4m above LAT
02:30	02:35	00:05	Post-Move Prep	Night Shift sign on to PTW
02:35	02:55	00:20	Post-Move Prep	Un-fasten crane / Remove seafastenings / Complete prep work for casing run in
02:55	05:00	02:05	Run-in Conductor Casing	Run in 20" casing to mudline, DTM = 42.10m
05:00	05:40	00:40	Vibrohammer Operations	Preparation of Vibrohammer and lift onto casing and connect
05:40	06:00	00:20	Vibrohammer Operations	Operation of Vibrohammer on casing / Conductor casing driven to 2.65m BML
06:00	06:40	00:40	Vibrohammer Operations	Remove Vibrohammer and return to storage rack and fit seafastings.
06:40	06:45	00:05	Vibrohammer Operations	Set-up spreader beam to lift off Vibro dolly
06:45	07:00	00:15	Shift Handover Talk	Shift Handover / Day Shift sign onto PTW
07:00	07:25	00:25	Fuel up/Wash Down/Break	Daily inspections / TBT
07:25	10:25	03:00	Post-Move Prep	Conductor casing installed in 2.90m / Lift off dolly / Jack down 0.5m, remove slips and jack back up / Continue setting up for drilling operations
10:25	11:25	01:00	Run-in 7" Casing	Run in 7" casing to ML. DTM=42.10m
11:25	12:15	00:50	Push Sampling	Shelby thick wall with catcher from 0.00-1.00m bml (within conductor casing) / 0.35m recovery
12:15	12:45	00:30	Fuel up/Wash Down/Break	Lunch
12:45	13:00	00:15	Advance/Washbore 7" casing	7" casing advanced 0.00m to 1.00m
13:00	13:25	00:25	Push Sampling	Shelby thick wall with catcher from 1.00-2.00m bml (within conductor casing) / 0.7m recovery
13:25	13:45	00:20	Advance/Washbore 7" casing	7" casing 1.00m to 2.00m
13:45	14:15	00:30	Push Sampling	Shelby thick wall with catcher from 2.00-2.10m refusal (within conductor casing) / 0.1m recovery
14:15	14:25	00:10	Advance/Washbore 7" casing	7" casing 2.00m to 2.50m
14:25	14:55	00:30	Push Sampling	Shelby thick walled with catcher 2.50-2.70m bml (within conductor casing) / 0.04m recovery
14:55	15:10	00:15	Advance/Washbore 7" casing	7" Casing 2.50m to 3.00m
15:10	15:30	00:20	Geobor NCD	Geobore lifted to cantilever
15:30	16:15	00:45	Geobor NCD	Run in Geobore and NCD 2.50 - 3.00m
16:15	16:25	00:10	CPT Operations	Set up for CPT operations
16:25	17:00	00:35	Fugro Downtime - Breakdown	Issues with the CPT / Operator commenced checks

DOME

Summary of Events

Begin	End	Duration	Type	Description
17:00	17:20	00:20	CPT Operations	CPT push 3.00m to 4.50m
17:20	17:30	00:10	Geobor NCD	NCD 3.00m to 3.50m
17:30	17:45	00:15	Push Sampling	Shelby thick wall with catcher oversample 3.50m to 4.50m / 0.37m recovery
17:45	18:00	00:15	Geobor NCD	Lifting drill rods off cantilever and more Geobor onto cantilever
18:00	18:15	00:15	Geobor NCD	NCD 3.50m to 4.50m
18:15	18:30	00:15	Push Sampling	Shelby thick wall with catcher 4.50m to 5.00m / 0.05m recovery
18:30	18:45	00:15	Geobor NCD	NCD 4.50m to 5.00m
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling and sampling ops
19:15	19:35	00:20	Push Sampling	Shelby thick wall with metal catcher 5.00m to 5.50m / 0.45m recovered
19:35	20:00	00:25	Geobor NCD	NCD 5.00m to 5.50m
20:00	20:25	00:25	Push Sampling	Shelby thick wall, metal catcher / 5.50m to 6.30m / 0.75m recovered
20:25	20:50	00:25	Geobor NCD	NCD 5.50m to 6.50m
20:50	21:15	00:25	Geobor NCD	Shelby thick wall with metal catcher / 6.50m to 6.70m, 0.15m recovered
21:15	21:35	00:20	Geobor NCD	NCD 6.50m to 7.00m
21:35	22:05	00:30	Push Sampling	Shelby thick wall with metal catcher / 7.00m to 8.00m, 0.8m recovered
22:05	22:20	00:15	Geobor NCD	NCD 7.00m to 8.00m
22:20	22:45	00:25	Push Sampling	Shelby thick wall with metal catcher / 8.00m to 9.00m / 0.65m recovered
22:45	23:10	00:25	Advance/Washbore 7" casing	7" casing followed, add 3.50m to 7" string, casing @6.35m BML
23:10	23:40	00:30	Geobor NCD	NCD 8.00m to 9.00m
23:40	24:00	00:20	Fugro Downtime - Breakdown	Set-up CPT operations / system offline

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	3:25	0:00	3:25	0.79%
Pre-Move Prep	0:00	0:00	7:20	1.70%
MMO Pre-Start Watch	0:00	0:00	0:50	0.19%
DEME - Vessel Operations	2:00	0:00	3:40	0.85%
Geophys - Additional Casing Pull	0:00	0:00	0:40	0.15%
Geophys - 1st Casing Pull	0:00	0:00	0:25	0.10%
Fuel up/Wash Down/Break	1:40	0:00	9:40	2.24%
Geobor NCD	4:20	0:00	18:30	4.29%
Fugro Downtime	0:00	0:00	2:40	0.62%
Advance/Washbore 7" casing	1:25	0:00	2:15	0.52%
Shift Handover Talk	0:30	0:00	3:40	0.85%
Offshore Resupply	0:00	0:00	0:50	0.19%
Fugro Downtime - Breakdown	0:55	0:00	2:30	0.58%
Neptune arrival to Falmouth	0:00	0:00	17:35	4.07%
Mobilisation	0:00	168:00	208:25	48.30%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	4.38%
Transit between BH	0:00	0:00	10:30	2.43%
Transit from Falmouth to Site	0:00	34:00	44:45	10.37%
Run-in Conductor Casing	2:05	0:00	7:45	1.80%
Vibrohammer Operations	1:45	0:00	4:15	0.98%
Run-in 7" Casing	1:00	0:00	2:45	0.64%
Run-in Geobor Casing	0:00	0:00	1:30	0.35%
Push Sampling	4:25	0:00	19:00	4.40%
Downhole Hammer Sampling	0:00	0:00	1:15	0.29%

Activity Summary

Activity	Today	Planned	To Date	Progress
Geobor Coring	0:00	0:00	16:25	3.80%
CPT Operations	0:30	0:00	10:40	2.47%
Wireline Geophys	0:00	0:00	5:10	1.20%
Trip-out 7" Casing	0:00	0:00	3:00	0.70%
Trip-out Conductor Casing	0:00	0:00	1:35	0.37%
Standby Current Speed - Casing	0:00	0:00	1:35	0.37%
Total	24:00	202:00	431:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9616	8.3644	Days	18.5876%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	7.0000	N°	15.5556%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Lucas Huysinga	Lab Technician (Days)	12
Frank Scotti	Geotechnical Engineer (days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Nick Powney	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	961
Fugro	21	252	/	4584
Total	26	312	/	5545

Lost & Damaged

Lost & Damaged

CPT cable/umbilical replaced due to continued, intermittent fault. Replacement cable tested but fault remains. Slip ring to be inspected by electrician during Tue nightshift. Replacement winch being sourced as further back-up.

Deliverables

GAIA access requested for reps and SPL team. Borehole data currently being uploaded to SPL Sharepoint.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Call held with Fugro offices at 0900 7/6/22 to review options for repair/replacement of downhole CPT winch.

Client Representative Comments

Client has permitted the progression of the BH to continue progress and collect data with the equipment available. We acknowledge that Fugro are employing the correct efforts to rectify the issue but we would encourage Fugro to rectify at the earliest opportunity as we want to achieve the objectives of the BHs as scoped.

Fugro Representative



Rob Fraser
Senior Project Manager

07/06/2022

Client Representative



06/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	19	**Date:**	07/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	31
Environmental Incident	0	/	0
Shift Handover Talk	2	/	35
Permit to Work	3	/	32
Mob Induction	0	/	27
HOC Cards	0	/	44
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	17
Shift Task Briefing	2	/	23
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General / lifting / hot works / Drilling operations, PTW (Issued by DEME)

Non-work related first aid case to toe - treatment completed by nightshift DEME first aider. IP continuing with standard operations.

Activities performed these 24 hours

Continuation of drilling operations at BH01 - sampling only / 9.00m to 28.50m bml

Planned Work for Next 24 Hours

Continuation of drilling operations at BH01/ DEME crew change under DEME RAMS and Lift Plan

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.9	0.8	0.4	0.5	
Wave height (Hs)	m	0.3	0.3	1.0	0.6	
Wind direction	Degrees	NNW	SSE	SSE	SSW	
Wind speed (m/s)	m/s	1.0	2.0	3.0	5.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
07/0600	NNW	2	3	0.0	S	0.3	7	NE	0.1	3	0.3	0.5
07/0900	ESE	3	3	0.0	S	0.3	7	NE	0.1	3	0.3	0.5
07/1200	SSE	4	5	0.1	S	0.3	7	NE	0.1	3	0.3	0.6
07/1500	SSE	5	7	0.1	S	0.4	7	-	0.0	-	0.4	0.7
07/1800	SSE	7	9	0.4	S	0.4	7	-	0.0	-	0.6	1.0
07/2100	SE	8	10	0.6	S	0.5	7	S	0.1	12	0.8	1.3
08/0000	SSW	8	11	0.6	S	0.7	7	S	0.1	12	0.9	1.6
08/0300	SW	9	11	0.5	S	0.9	7	S	0.1	12	1.1	1.8
08/0600	WSW	9	11	0.5	S	1.0	7	-	0.0	-	1.1	1.9
08/0900	WSW	9	11	0.5	S	1.0	7	-	0.0	-	1.1	1.9
08/1200	WSW	9	11	0.5	S	0.9	7	-	0.0	-	1.1	1.8
08/1500	W	9	11	0.5	S	0.9	7	-	0.0	-	1.1	1.8
08/1800	W	8	11	0.4	S	0.9	7	-	0.0	-	1.0	1.7
08/2100	W	8	10	0.5	S	0.8	7	-	0.0	-	0.9	1.6
09/0000	W	7	9	0.4	S	0.7	6	S	0.1	12	0.8	1.4
09/0300	W	7	9	0.4	S	0.6	6	S	0.1	12	0.7	1.2
09/0600	W	6	8	0.4	S	0.5	6	S	0.1	11	0.6	1.1
09/0900	SW	7	9	0.5	S	0.4	6	S	0.1	11	0.6	1.1
09/1200	SSW	8	11	0.6	S	0.3	6	S	0.1	11	0.7	1.2
09/1500	S	9	11	0.6	S	0.4	6	S	0.1	11	0.8	1.3
09/1800	SSW	9	11	0.6	S	0.6	6	S	0.1	11	0.9	1.5
09/2100	SSW	8	11	0.6	S	0.7	6	-	0.0	-	0.9	1.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:20	00:20	Fugro Downtime - Breakdown	CPT offline, operators carrying out fault finding
00:20	00:50	00:30	Fuel up/Wash Down/Break	Lunch
00:50	01:25	00:35	Fugro Downtime - Breakdown	CPT fault remains / Client instruction to continue BH01 with continuous sampling - switch to rotary coring once suitable ground encountered (as per the borehole requirements)
01:25	01:45	00:20	Push Sampling	Shelby thick wall, metal catcher / 9.00m to 9.50m / 0.50m recovered
01:45	02:05	00:20	Geobor NCD	NCD 9.00m to 9.50m
02:05	02:25	00:20	Push Sampling	Shelby thick wall with metal catcher / 9.50m to 10.00m / 0.50 recovered
02:25	02:45	00:20	Geobor NCD	NCD 9.50m to 10.00m
02:45	03:05	00:20	Push Sampling	Thick walled Shelby with metal catcher push sample, 10.00m to 11.00m, 0.80 rec.
03:05	03:25	00:20	Geobor NCD	NCD 10.00m to 11.00m
03:25	03:45	00:20	Push Sampling	Thick walled Shelby with metal catcher push sample, 11.00m to 12.00m, 0.80 rec.
03:45	04:05	00:20	Geobor NCD	NCD 11.00m to 12.00m
04:05	04:20	00:15	Push Sampling	Thick walled Shelby with metal catcher push sample, 12.00m to 13.00m, 0.50 rec.
04:20	04:30	00:10	Geobor NCD	NCD 12.00m to 13.00m
04:30	04:34	00:04	Push Sampling	Thick walled Shelby with metal catcher push sample, 13.00m to 13.50m, 0.40 rec.
04:34	05:00	00:26	Geobor NCD	NCD 13.00m to 13.50m
05:00	05:30	00:30	Push Sampling	Thick walled Shelby push sample, from 13.50m no penetration
05:30	05:59	00:29	Downhole Hammer Sampling	Hammer sample 13.50m to 13.90m, 0.35 rec
05:59	06:25	00:26	Geobor NCD	NCD 13.50m to 14.00m
06:25	06:45	00:20	Downhole Hammer Sampling	Hammer sample 14.00m to 14.40m
06:45	07:00	00:15	Shift Handover Talk	Shift Handover / Day shift sign onto PTW
07:00	07:35	00:35	Fuel up/Wash Down/Break	TBT and daily inspections
07:35	08:00	00:25	Geobor NCD	NCD 14.00m to 14.50m
08:00	08:22	00:22	Downhole Hammer Sampling	Sample at 14.50m to 14.95m
08:22	08:30	00:08	Geobor NCD	NCD 14.50m to 15.00m
08:30	09:00	00:30	Downhole Hammer Sampling	Sample at 15.00m to 15.45m
09:00	09:30	00:30	Geobor Coring	NCD 15.00m to 15.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
09:30	09:45	00:15	Downhole Hammer Sampling	Sample 15.50m to 15.95m
09:45	10:00	00:15	Geobor NCD	NCD 15.50m to 16.00m
10:00	10:25	00:25	Downhole Hammer Sampling	Sample at 16.00m to 16.35m
10:25	10:40	00:15	Geobor NCD	16.00m to 16.50m
10:40	11:00	00:20	Push Sampling	Shelby thick wall/ 16.50m to 17.20m / No recovery
11:00	11:35	00:35	Geobor NCD	16.00m to 16.50m / Hole collapsed - Drill back down to depth with NCD and flush
11:35	12:25	00:50	Push Sampling	Shelby thick wall with catcher / 16.50m to 17.20m
12:25	12:55	00:30	Fuel up/Wash Down/Break	Lunch
12:55	13:20	00:25	Geobor NCD	NCD 16.50m to 17.50m
13:20	13:45	00:25	Push Sampling	Shelby thick wall with catcher / 17.50m to 18.00m
13:45	14:00	00:15	Geobor NCD	NCD 17.50m to 18.00m
14:00	14:20	00:20	Push Sampling	Shelby thick wall / 18.00m to 18.50m
14:20	14:45	00:25	Geobor NCD	NCD 18.00m to 18.50m
14:45	15:00	00:15	Push Sampling	Shelby thick wall / 18.50m to 18.90m
15:00	15:15	00:15	Geobor NCD	NCD 18.50m to 19.00m
15:15	15:30	00:15	Push Sampling	Shelby thin wall / 19.00m to 20.00m
15:30	16:05	00:35	Geobor NCD	NCD 19.00m to 20.00m
16:05	16:15	00:10	Push Sampling	Shelby thin wall / 20.00m to 21.00m
16:15	16:30	00:15	Geobor NCD	NCD 20.00m to 20.50m
16:30	16:55	00:25	Push Sampling	Shelby thin wall / 20.50m to 21.50m
16:55	17:15	00:20	Geobor NCD	NCD 20.50m to 21.50m
17:15	17:35	00:20	Push Sampling	Shelby thin wall / 21.50m to 22.00m
17:35	17:50	00:15	Geobor NCD	NCD 21.50m to 22.00m
17:50	18:05	00:15	Push Sampling	Shelby thin wall / 22.00m to 22.50m
18:05	18:20	00:15	Geobor NCD	NCD 22.00m to 22.50m
18:20	18:40	00:20	Push Sampling	Shelby thick wall / 22.50m to 23.50m
18:40	18:45	00:05	Geobor NCD	NCD 22.50m to 23.50m
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling ops for the shift
19:15	19:25	00:10	Push Sampling	Thin walled Shelby / 23.50m to 24.00m / 0.50m recovered
19:25	19:40	00:15	Geobor NCD	NCD 23.50m to 24.00m
19:40	20:00	00:20	Push Sampling	Shelby thin wall / 24.50m to 25.50m / 0.30m recovered
20:00	20:35	00:35	Geobor NCD	NCD 24.00m to 24.50m
20:35	20:55	00:20	Push Sampling	Shelby thin wall / 24.50m to 25.50m / 0.70m recovered
20:55	21:10	00:15	Push Sampling	Shelby thin wall / 24.50m to 25.50m / 0.30m recovered
21:10	21:25	00:15	Geobor NCD	NCD 24.50m to 25.50m
21:25	21:40	00:15	Push Sampling	Shelby thin wall / 25.50m to 26.50m / 0.70m recovered
21:40	21:55	00:15	Push Sampling	Shelby thin wall / 25.50m to 26.50m / 0.30m recovered
21:55	22:15	00:20	Geobor NCD	NCD 25.50m to 26.50m
22:15	22:35	00:20	Push Sampling	Shelby thin wall / 26.50m to 27.00m / 0.50m recovered
22:35	22:50	00:15	Push Sampling	Shelby thin wall / 27.00m to 27.50m / 0.50m recovered
22:50	23:05	00:15	Geobor NCD	NCD 26.50m to 27.50m
23:05	23:20	00:15	Push Sampling	Shelby thin wall / 27.50m to 28.00m / 0.50m recovered
23:20	23:35	00:15	Push Sampling	Shelby thin wall / 28.00m to 28.50m / 0.50m recovered
23:35	24:00	00:25	Geobor NCD	NCD 27.50m to 28.50m

Activity Summary

Activity	Today	Planned	To Date	Progress

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	3:25	0.75%
Pre-Move Prep	0:00	0:00	7:20	1.61%
MMO Pre-Start Watch	0:00	0:00	0:50	0.18%
DEME - Vessel Operations	0:00	0:00	3:40	0.80%
Geophys - Additional Casing Pull	0:00	0:00	0:40	0.15%
Geophys - 1st Casing Pull	0:00	0:00	0:25	0.09%
Fuel up/Wash Down/Break	1:50	0:00	11:30	2.52%
Geobor NCD	9:10	0:00	27:40	6.07%
Fugro Downtime	0:00	0:00	2:40	0.59%
Advance/Washbore 7" casing	0:00	0:00	2:15	0.49%
Shift Handover Talk	0:30	0:00	4:10	0.91%
Offshore Resupply	0:00	0:00	0:50	0.18%
Fugro Downtime - Breakdown	0:55	0:00	3:25	0.75%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.86%
Mobilisation	0:00	168:00	208:25	45.76%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	4.15%
Transit between BH	0:00	0:00	10:30	2.31%
Transit from Falmouth to Site	0:00	34:00	44:45	9.82%
Run-in Conductor Casing	0:00	0:00	7:45	1.70%
Vibrohammer Operations	0:00	0:00	4:15	0.93%
Run-in 7" Casing	0:00	0:00	2:45	0.60%
Run-in Geobor Casing	0:00	0:00	1:30	0.33%
Push Sampling	8:44	0:00	27:44	6.09%
Downhole Hammer Sampling	2:21	0:00	3:36	0.79%
Geobor Coring	0:30	0:00	16:55	3.71%
CPT Operations	0:00	0:00	10:40	2.34%
Wireline Geophys	0:00	0:00	5:10	1.13%
Trip-out 7" Casing	0:00	0:00	3:00	0.66%
Trip-out Conductor Casing	0:00	0:00	1:35	0.35%
Standby Current Speed - Casing	0:00	0:00	1:35	0.35%
Total	24:00	202:00	455:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9616	9.3260	Days	20.7244%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	8.0000	N°	17.7778%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysinga	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Days)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick Powney	HSE Advisor	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1021
Fugro	21	252	/	4836
Total	26	312	/	5857

Lost & Damaged

Replacement CPT winch to be sent to site / Continued fault finding on CPT kit - slip ring to be tested

Deliverables

GAIA access for SPL now in place.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

08/06/2022

Client Representative



07/06/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	20	**Date:**	08/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	33
Environmental Incident	0	/	0
Shift Handover Talk	2	/	37
Permit to Work	0	/	32
Mob Induction	0	/	27
HOC Cards	1	/	45
Safety Drills	0	/	1
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	18
Shift Task Briefing	2	/	25
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General / lifting / hot works / Drilling operations, PTW (Issued by DEME)

HOC : Ash tray in the smoking area on deck was smoldering due to a lit cigarette in the ash tray.

Activities performed these 24 hours

Continuation of drilling operations at BH01 (Continuation of push sampling without CPT operations)

Planned Work for Next 24 Hours

Recommence sampling operation at BH01 from 39.00m bml

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.3	n/a	n/a	n/a	Current meter pulled for crew change ~1000 and not redeployed to correct level after
Wave height (Hs)	m	0.9	0.7	0.8	0.7	
Wind direction	Degrees	SW	WSW	W	W	
Wind speed (m/s)	m/s	8	8	9	7	Observed gusts via crane of 17m/s during PM, constants of >12m/s through most of afternoon

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
08/0600	SW	8	11	0.5	S	1.0	7	-	0.0	-	1.1	1.9
08/0900	SW	8	10	0.5	S	1.0	7	-	0.0	-	1.1	1.9
08/1200	WSW	8	10	0.5	S	0.9	7	-	0.0	-	1.0	1.7
08/1500	W	8	10	0.5	S	0.9	7	-	0.0	-	1.0	1.7
08/1800	W	8	10	0.5	S	0.8	7	-	0.0	-	0.9	1.6
08/2100	W	7	9	0.4	S	0.8	7	-	0.0	-	0.9	1.5
09/0000	W	6	8	0.4	S	0.7	6	S	0.1	12	0.8	1.3
09/0300	WSW	6	7	0.3	S	0.6	6	S	0.1	12	0.7	1.2
09/0600	SW	6	7	0.3	S	0.5	6	S	0.1	11	0.6	1.0
09/0900	SSW	7	9	0.6	S	0.4	6	S	0.1	11	0.7	1.2
09/1200	SSE	9	12	0.7	S	0.3	6	S	0.1	11	0.7	1.2
09/1500	S	10	13	0.7	S	0.4	6	S	0.1	11	0.8	1.4
09/1800	SSW	10	13	0.7	S	0.6	6	S	0.1	11	0.9	1.6
09/2100	SSW	9	11	0.6	S	0.7	6	-	0.0	-	1.0	1.6
10/0000	SW	8	11	0.5	S	0.7	6	-	0.0	-	0.9	1.5
10/0300	SSW	8	11	0.6	S	0.6	6	-	0.0	-	0.9	1.4
10/0600	SSW	8	11	0.6	S	0.4	6	S	0.2	12	0.7	1.2
10/0900	SSW	10	13	0.7	S	0.4	12	S	0.2	6	0.8	1.4
10/1200	SSW	13	17	0.8	S	0.6	12	-	0.0	-	1.0	1.7
10/1500	SSW	14	18	0.9	S	0.8	12	-	0.0	-	1.2	2.0
10/1800	SSW	13	17	0.8	S	0.9	11	-	0.0	-	1.2	2.0
10/2100	SW	12	16	0.8	S	0.8	11	-	0.0	-	1.1	1.9

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	00:55	00:25	Push Sampling	Thin walled Shelby push sample 28.50m to 29.00m, 0.50m rec
00:55	01:20	00:25	Push Sampling	Thin walled Shelby push sample 29.00m to 29.50m, 0.50m rec. Tube damaged
01:20	01:40	00:20	Geobor NCD	NCD geo 28.50 to 29.50
01:40	02:00	00:20	Push Sampling	Thick walled Shelby push sample 29.50m to 29.60m, 0.10m rec.
02:00	02:15	00:15	Downhole Hammer Sampling	Hammer sample 29.60m to 29.80m for 100 blows, no rec.
02:15	03:05	00:50	Geobor Coring	Core run 29.60m to 30.50m, 0.90m rec.
03:05	03:30	00:25	Geobor Coring	Core run 30.50m to 31.50m, 1.00m rec.
03:30	04:10	00:40	Geobor Coring	Core run 31.50m to 32.50m, 1.00m rec.
04:10	04:30	00:20	Geobor Coring	Core run 32.50m to 33.00m, 0.50m rec.
04:30	04:50	00:20	Geobor Coring	Core run 33.00m to 34.00m, 0.40m rec.
04:50	05:15	00:25	Push Sampling	Thick walled Shelby with metal catcher spring push sample 34.00m to 34.50m, 0.50 rec.
05:15	05:25	00:10	Geobor NCD	NCD geo 34.00m to 34.50m
05:25	05:50	00:25	Push Sampling	Thick walled Shelby push sample 34.50m to 35.00m, 0.40m rec.
05:50	06:05	00:15	Geobor NCD	NCD geo 34.50 to 35.00m
06:05	06:20	00:15	Push Sampling	Thick walled Shelby push sample 35.00m to 35.50m, 0.45 rec.
06:20	06:30	00:10	Geobor NCD	NCD geo 35.00m to 35.50m
06:30	06:45	00:15	Push Sampling	Thick walled Shelby push sample 35.50m to 36.00m, 0.40m rec
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign on to PTW
07:00	07:15	00:15	Fuel up/Wash Down/Break	TBT and daily inspections
07:15	07:40	00:25	Fugro Downtime - Breakdown	CPT testing repairs made to winch, CPT still offline
07:40	08:00	00:20	Geobor NCD	NCD 35.50m to 36.00m
08:00	08:10	00:10	Advance/Washbore 7" casing	Sit Geobor on bottom and tighten 7" drill string
08:10	08:30	00:20	Push Sampling	Shelby Thick wall with catcher / 36.00m to 36.50m
08:30	08:45	00:15	Geobor NCD	NCD 36.00m to 36.50m
08:45	09:25	00:40	Push Sampling	Thick wall with catcher (no recovery, try again with thick wall and catcher, no recovery) 36.50m to 37.00m

DOME

Summary of Events

Begin	End	Duration	Type	Description
09:25	09:45	00:20	Geobor NCD	BH collapsing, drill back down to depth with NCD, stabilise hole 36.50m
09:45	10:03	00:18	Downhole Hammer Sampling	Sample 36.00m to 36.50m
10:03	10:15	00:12	Geobor NCD	NCD 36.50m to 37.00m
10:15	12:00	01:45	DEME - Vessel Operations	Shut down drilling ops to conduct Deme crew transfers
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	12:50	00:20	Geobor NCD	Resume drilling ops from 37.00m, flush and ream hole after long stand down for deme crew change. NCD
12:50	13:05	00:15	Push Sampling	Shelby Tube Sampling Thick wall with catcher / 37.00m to 37.50m
13:05	13:20	00:15	Geobor NCD	NCD 37.00m to 37.50m
13:20	13:35	00:15	Push Sampling	Shelby Tube Sampling Thick wall with catcher / 37.50m to 38.50m
13:35	14:00	00:25	Geobor NCD	NCD 37.50m to 38.50m
14:00	14:20	00:20	DEME - Vessel Operations	Shut down drilling ops to conduct 2nd DEME crew transfer
14:20	14:30	00:10	Push Sampling	Shelby Tube Sampling Thin wall / 38.50m to 38.80m
14:30	15:45	01:15	Geobor NCD	Unable to latch on to retrieve sample, working to get latch
15:45	16:45	01:00	Trip-out Geobor Casing	Unable to latch onto and retrieve push sample / Geobor string pulled to retrieve NCD and push sample
16:45	18:10	01:25	Fuel up/Wash Down/Break	Geobor on deck / Retrieve sample and clean out latches / Fuel up plant.
18:10	18:45	00:35	Run-in Geobor Casing	Start running in Geobor and start NCD back down to depth. (39.00m)
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover talk / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations for the night shift
19:15	23:00	03:45	Geobor NCD	NCD from 4.00m BML down to 39.00m
23:00	23:40	00:40	Advance/Washbore 7" casing	Geobor NCD'd @ 32.50m / 7" casing followed on to 12.40m BML / Crane up pallet of 7" casing and run in over Geobor and connect to 7" string
23:40	24:00	00:20	Geobor NCD	NCD from 32.50m to 39.00m and flush

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	3:25	0.71%
Pre-Move Prep	0:00	0:00	7:20	1.53%
MMO Pre-Start Watch	0:00	0:00	0:50	0.17%
DEME - Vessel Operations	2:05	0:00	5:45	1.20%
Geophys - Additional Casing Pull	0:00	0:00	0:40	0.14%
Geophys - 1st Casing Pull	0:00	0:00	0:25	0.09%
Fuel up/Wash Down/Break	3:10	0:00	14:40	3.06%
Geobor NCD	8:22	0:00	36:02	7.51%
Fugro Downtime	0:00	0:00	2:40	0.56%
Advance/Washbore 7" casing	0:50	0:00	3:05	0.64%
Shift Handover Talk	0:15	0:00	4:25	0.92%
Offshore Resupply	0:00	0:00	0:50	0.17%
Fugro Downtime - Breakdown	0:25	0:00	3:50	0.80%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.67%
Mobilisation	0:00	168:00	208:25	43.47%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.95%
Transit between BH	0:00	0:00	10:30	2.19%
Transit from Falmouth to Site	0:00	34:00	44:45	9.33%
Run-in Conductor Casing	0:00	0:00	7:45	1.62%
Vibrohammer Operations	0:00	0:00	4:15	0.89%
Run-in 7" Casing	0:00	0:00	2:45	0.57%
Run-in Geobor Casing	0:35	0:00	2:05	0.43%

Activity Summary

Activity	Today	Planned	To Date	Progress
Push Sampling	4:10	0:00	31:54	6.65%
Downhole Hammer Sampling	0:33	0:00	4:09	0.87%
Geobor Coring	2:35	0:00	19:30	4.07%
CPT Operations	0:00	0:00	10:40	2.22%
Wireline Geophys	0:00	0:00	5:10	1.08%
Trip-out Geobor Casing	1:00	0:00	1:00	0.21%
Trip-out 7" Casing	0:00	0:00	3:00	0.63%
Trip-out Conductor Casing	0:00	0:00	1:35	0.33%
Standby Current Speed - Casing	0:00	0:00	1:35	0.33%
Total	24:00	202:00	479:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	10.3260	Days	22.9467%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	9.0000	N°	20.0000%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysinga	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick Powney	HSE Advisor	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1081
Fugro	21	252	/	5088

DOME

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Total	26	312	/	6169

Lost & Damaged

Replacement CPT winch to be sent to site for transfer to Neptune by support vessel.

Deliverables

All site data and 24/48hr deliverables to be uploaded to GAIA client access page.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

DEME crew change conducted under DEME crew transfer RAMS and Lift Plan and DEME-sourced vessel

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

09/06/2022

Client Representative



08/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	21	**Date:**	09/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	35
Environmental Incident	0	/	0
Shift Handover Talk	2	/	39
Permit to Work	0	/	32
Mob Induction	0	/	27
HOC Cards	1	/	46
Safety Drills	1	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	19
Shift Task Briefing	2	/	27
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General / Lifting / Hot works, PTW issued by DEME
Muster drill held @ 0700
Request from DEME Captain for IP with non-work related injury to depart barge on next crew change as a precaution.

Activities performed these 24 hours

Continuation of drilling operations at BH01

HOC : Cans of chain lube left on top of the COSHH cabinet.

Planned Work for Next 24 Hours

Continuation of drillings operations at BH01

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.6	0.3	0.8	0.7	
Wave height (Hs)	m	0.7	1.0	0.9	1.0	
Wind direction	Degrees	SSW	S	SSW	SW	
Wind speed (m/s)	m/s	6	9	10	8	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
09/0600	SSW	5	7	0.4	S	0.5	6	S	0.1	13	0.6	1.0
09/0900	SSW	8	10	0.6	S	0.5	6	S	0.1	12	0.8	1.3
09/1200	S	10	13	0.7	S	0.6	6	S	0.1	11	0.9	1.6
09/1500	SSW	11	14	0.8	S	0.7	6	S	0.1	10	1.0	1.7
09/1800	SSW	11	14	0.7	S	0.8	6	S	0.1	9	1.1	1.8
09/2100	SW	10	13	0.7	S	0.9	6	S	0.1	9	1.1	1.9
10/0000	SW	9	12	0.6	S	0.8	6	-	0.0	-	1.0	1.6
10/0300	SSW	8	11	0.6	S	0.7	6	-	0.0	-	0.9	1.5
10/0600	SSW	9	11	0.6	S	0.6	6	S	0.2	16	0.9	1.5
10/0900	SSW	10	13	0.7	S	0.7	16	S	0.2	6	1.0	1.7
10/1200	SSW	13	17	0.8	S	0.8	16	-	0.0	-	1.2	1.9
10/1500	SSW	14	18	0.9	S	0.9	16	-	0.0	-	1.3	2.1
10/1800	SSW	13	17	0.8	S	1.0	15	-	0.0	-	1.3	2.2
10/2100	SW	11	14	0.7	S	1.0	15	-	0.0	-	1.2	2.1
11/0000	SW	11	14	0.7	S	1.0	14	-	0.0	-	1.2	2.1
11/0300	SW	10	13	0.7	S	0.9	14	-	0.0	-	1.1	1.9
11/0600	SW	9	12	0.6	S	0.8	13	-	0.0	-	1.0	1.7
11/0900	SSW	9	12	0.7	S	0.7	12	-	0.0	-	1.0	1.6
11/1200	SSW	9	11	0.6	SSW	0.7	11	-	0.0	-	1.0	1.6
11/1500	SSW	9	12	0.7	SSW	0.8	10	-	0.0	-	1.0	1.7
11/1800	WSW	6	7	0.3	SSW	0.9	9	S	0.1	13	1.0	1.6
11/2100	WSW	5	7	0.3	SSW	0.9	8	S	0.1	13	1.0	1.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Geobor NCD	NCD Geobor from 32.50m to 39.00m
00:30	01:00	00:30	Fuel up/Wash Down/Break	Lunch
01:00	01:25	00:25	Push Sampling	Thin walled Shelby / 39.00m to 39.70m / 0.10m recovered
01:25	01:50	00:25	Push Sampling	Thin walled Shelby / 39.60m to 39.70m / 0.10 recovered
01:50	02:15	00:25	Geobor NCD	NCD Geobor from 39.00m to 39.70m
02:15	02:45	00:30	Push Sampling	Thick walled Shelby / 39.70m to 40.20m / 0.40m recovered
02:45	03:05	00:20	Geobor NCD	NCD Geobor from 39.70m to 40.20m
03:05	03:25	00:20	Push Sampling	Thin walled Shelby / 40.20m to 40.70m / 0.50 recovered
03:25	03:50	00:25	Geobor NCD	NCD Geobor from 40.20m to 40.70m
03:50	04:15	00:25	Push Sampling	Thin walled Shelby / 40.70m to 41.50m / 0.70m recovered
04:15	04:40	00:25	Geobor NCD	NCD Geobor from 40.70m to 41.50m
04:40	05:05	00:25	Push Sampling	Thin walled Shelby / 41.50m to 42.00m / 0.50m recovered
05:05	05:20	00:15	Geobor NCD	NCD Geobor from 41.50m to 42.00m
05:20	05:35	00:15	Push Sampling	Thin walled Shelby / 42.00m to 43.00m
05:35	06:45	01:10	Geobor NCD	Connected heavy lift winch to sample winch. De-latched from NCD
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:35	00:35	Fuel up/Wash Down/Break	TBT / Muster drill / Daily checks
07:35	08:50	01:15	Advance/Washbore 7" casing	Added 3.75m of 7" casing / Casing now at 15.85m
08:50	09:45	00:55	Trip-out Geobor Casing	Pulling Geobor back to deck
09:45	10:40	00:55	Geobor NCD	Retrieved push sample 67 (42.00m - 43.00m), NCD recovered to deck, cleaned and checked.
10:40	12:10	01:30	Geobor NCD	Run-in Geobor / Commenced NCD to 43.50m
12:10	12:45	00:35	Fuel up/Wash Down/Break	Lunch (Geobor at 42.00m)
12:45	12:55	00:10	Fuel up/Wash Down/Break	TBT drilling operations
12:55	13:35	00:40	Geobor NCD	NCD from 42.00m to 43.50m
13:35	14:10	00:35	Geobor Coring	Core run 43.50 - 44.50m bml / 1.00m recovery
14:10	14:45	00:35	Geobor Coring	Core run 44.50 - 45.50m bml / 1.00m recovery
14:45	15:05	00:20	Geobor Coring	Core run 45.50 - 46.50m bml / 1.00m recovery

DOME

Summary of Events

Begin	End	Duration	Type	Description
15:05	15:30	00:25	Geobor Coring	Core run 46.50 - 47.50m bml / 1.00m recovery
15:30	15:50	00:20	Geobor Coring	Core run 47.50 - 49.00m bml / 1.50m recovery
15:50	16:15	00:25	Geobor Coring	Core run 49.00 - 50.50m / 1.47m recovery
16:15	18:05	01:50	Geobor Coring	Core run 50.50 - 52.00m bml / Core slipped - attempt to recover
18:05	18:40	00:35	Geobor Coring	0.75m sample retrieved / Barrel checked / NCD in down to 52.00m
18:40	19:00	00:20	Fuel up/Wash Down/Break	Fuel up plant / Shift handover / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations for the shift
19:15	19:35	00:20	Geobor Coring	Core run with serrated catcher spring from 52.00m to 53.00m
19:35	19:55	00:20	Geobor Coring	Core run with serrated catcher spring from 53.00m to 54.50m
19:55	20:25	00:30	Geobor Coring	Core run with serrated catcher spring from 54.50m to 56.00m
20:25	20:55	00:30	Geobor NCD	Core run with serrated catcher spring from 56.00 to 57.50m
20:55	21:25	00:30	Geobor Coring	Core run with serrated catcher spring from 57.50m to 58.50m
21:25	21:55	00:30	Geobor Coring	Core run with serrated catcher spring from 58.50m to 59.50m
21:55	22:35	00:40	Geobor Coring	Core run with serrated catcher spring from 59.50m to 61.00m
22:35	23:10	00:35	Geobor Coring	Core run with serrated catcher spring from 61.00m to 62.50m
23:10	23:45	00:35	Geobor Coring	Core run with serrated catcher spring from 62.50m to 64.00m
23:45	24:00	00:15	Geobor Coring	Core run with serrated catcher spring from 64.00m to 65.50m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	3:25	0.68%
Pre-Move Prep	0:00	0:00	7:20	1.46%
MMO Pre-Start Watch	0:00	0:00	0:50	0.17%
DEME - Vessel Operations	0:00	0:00	5:45	1.14%
Geophys - Additional Casing Pull	0:00	0:00	0:40	0.13%
Geophys - 1st Casing Pull	0:00	0:00	0:25	0.08%
Fuel up/Wash Down/Break	2:25	0:00	17:05	3.39%
Geobor NCD	7:05	0:00	43:07	8.56%
Fugro Downtime	0:00	0:00	2:40	0.53%
Advance/Washbore 7" casing	1:15	0:00	4:20	0.86%
Shift Handover Talk	0:15	0:00	4:40	0.93%
Offshore Resupply	0:00	0:00	0:50	0.17%
Fugro Downtime - Breakdown	0:00	0:00	3:50	0.76%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.49%
Mobilisation	0:00	168:00	208:25	41.39%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.76%
Transit between BH	0:00	0:00	10:30	2.09%
Transit from Falmouth to Site	0:00	34:00	44:45	8.89%
Run-in Conductor Casing	0:00	0:00	7:45	1.54%
Vibrohammer Operations	0:00	0:00	4:15	0.84%
Run-in 7" Casing	0:00	0:00	2:45	0.55%
Run-in Geobor Casing	0:00	0:00	2:05	0.41%
Push Sampling	2:45	0:00	34:39	6.88%
Downhole Hammer Sampling	0:00	0:00	4:09	0.82%
Geobor Coring	9:20	0:00	28:50	5.73%
CPT Operations	0:00	0:00	10:40	2.12%
Wireline Geophys	0:00	0:00	5:10	1.03%
Trip-out Geobor Casing	0:55	0:00	1:55	0.38%

Activity Summary

Activity	Today	Planned	To Date	Progress
Trip-out 7" Casing	0:00	0:00	3:00	0.60%
Trip-out Conductor Casing	0:00	0:00	1:35	0.31%
Standby Current Speed - Casing	0:00	0:00	1:35	0.31%
Total	24:00	202:00	503:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	11.3260	Days	25.1689%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	10.0000	N°	22.2222%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Tomasz Michalowsk	Surveyor	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysinga	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick Powney	HSE Advisor	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1141
Fugro	21	252	/	5340
Total	26	312	/	6481

Lost & Damaged

Replacement CPT winch being shipped to Ireland - ETA Saturday

Deliverables

Deliverables

Borehole logs and photos for BH26 uploaded to GAIA. Comments received from SPL - Fugro to address.

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

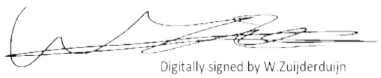
Fugro Representative Comments

Client Representative Comments

Fugro Representative

09/06/2022

Client Representative



09/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	22	**Date:**	10/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	37
Environmental Incident	0	/	0
Shift Handover Talk	2	/	41
Permit to Work	0	/	32
Mob Induction	0	/	27
HOC Cards	2	/	48
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	20
Shift Task Briefing	2	/	29
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : General / Lifting / Hot works, PTW issued by DEME

HOCs : Rags and open container with chemicals left out in strong winds / Small weep from Comacchio fitting

Activities performed these 24 hours

Completion of drilling operations and Geophys at BH01 / Geobor and 7" casing tripped out / Preparation for pulling in 20" conductor casing

Planned Work for Next 24 Hours

Trip-out 20" conductor casing / Secure casing into seafastenings / Jack-down and transit to BH28 / Complete crew change (3 OFF / 1 ON)

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.8	0.9	1.2	1.1	
Wave height (Hs)	m	0.9	1.1	1.2	1.3	
Wind direction	Degrees	SSW	SSW	SSW	SW	
Wind speed (m/s)	m/s	8	6	11	9	Significantly higher wind speed observed on crane anemometer ~14-15m/s.

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
10/0600	SSW	9	11	0.6	S	1.0	6	S	0.2	16	1.2	2.0
10/0900	SSW	11	14	0.7	S	1.0	6	S	0.2	16	1.3	2.1
10/1200	SSW	13	17	0.8	S	1.0	6	S	0.2	16	1.3	2.2
10/1500	SSW	14	18	0.9	S	1.2	6	S	0.2	15	1.5	2.5
10/1800	SSW	13	17	0.8	S	1.1	6	S	0.2	15	1.4	2.3
10/2100	SW	11	14	0.7	S	1.1	6	S	0.2	15	1.3	2.2
11/0000	SW	11	14	0.7	S	1.0	6	S	0.1	14	1.2	2.1
11/0300	SW	10	13	0.7	S	0.9	6	S	0.1	14	1.1	1.9
11/0600	SW	9	12	0.6	S	0.8	6	S	0.1	13	1.0	1.7
11/0900	SW	9	12	0.6	S	0.8	6	SSW	0.2	7	1.0	1.7
11/1200	SSW	9	11	0.6	S	0.7	6	SSW	0.5	7	1.1	1.8
11/1500	SSW	9	12	0.7	SSW	0.8	7	S	0.5	13	1.2	1.9
11/1800	SSW	7	9	0.5	SSW	0.9	7	S	0.3	13	1.1	1.8
11/2100	WSW	5	7	0.3	SSW	0.9	7	S	0.2	13	1.0	1.6
12/0000	W	7	9	0.4	SSW	0.7	7	S	0.2	13	0.8	1.4
12/0300	WSW	7	9	0.4	SSW	0.6	6	S	0.1	13	0.8	1.3
12/0600	WSW	7	8	0.4	SSW	0.5	6	S	0.1	13	0.7	1.1
12/0900	SW	5	6	0.3	SSW	0.4	6	S	0.1	13	0.5	0.9
12/1200	WSW	4	5	0.2	SSW	0.4	6	S	0.1	13	0.5	0.8
12/1500	W	5	6	0.2	SSW	0.4	5	S	0.1	12	0.5	0.8
12/1800	WNW	5	6	0.1	SSW	0.5	5	S	0.1	12	0.5	0.9
12/2100	WNW	4	5	0.1	SSW	0.4	5	S	0.1	11	0.4	0.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Geobor Coring	Core run with serrated catcher spring / 64.00m to 65.50m
00:15	00:45	00:30	Fuel up/Wash Down/Break	Lunch
00:45	01:20	00:35	Geobor Coring	Core run with serrated catcher spring / 65.50m to 67.00m / 1.50m recovered
01:20	01:55	00:35	Geobor Coring	Core run with serrated catcher spring / 67.00m to 68.50m / 0.85m recovered
01:55	02:15	00:20	Geobor Coring	Core run with serrated catcher spring / 68.50m to 69.50m / 0.80m recovered
02:15	02:35	00:20	Geobor Coring	Core run with serrated catcher spring / 69.50m to 70.50m / 1.50m recovered
02:35	02:50	00:15	Geobor Coring	Core run with serrated catcher spring / 70.50m to 71.50m / 1.20m recovered
02:50	03:30	00:40	Geobor Coring	Core run with serrated catcher spring / 71.50m to 73.00m / 1.20m recovered
03:30	04:00	00:30	Geobor Coring	Core run with serrated catcher spring / 73.00m to 74.00m / 0.45m recovered
04:00	04:25	00:25	Geobor Coring	Core run with serrated catcher spring /74.00m to 75.00m / 1.00m recovered
04:25	04:40	00:15	Wireline Geophys	Flush BH
04:40	05:35	00:55	Geophys - 1st Casing Pull	Pull Geobor back to 50.00m BML
05:35	05:45	00:10	Wireline Geophys	Set-up and test for wireline Geophsics operations
05:45	06:30	00:45	Wireline Geophys	Run-in Caliper and test
06:30	06:45	00:15	Wireline Geophys	Run-in ABI and test
06:45	07:00	00:15	Fuel up/Wash Down/Break	Shift handover talk / Day shift signed onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT, Daily checks
07:20	08:25	01:05	Wireline Geophys	ABI Testing in progress
08:25	10:05	01:40	Wireline Geophys	ABI testing complete, changed tools run-in and started PS logging.
10:05	10:25	00:20	Geophys - Additional Casing Pull	Pull back 6.00m of Geobor/ At 44.00m
10:25	11:05	00:40	Wireline Geophys	Run-in calliper and resumed Geophys logging
11:05	11:55	00:50	Wireline Geophys	Run-in ABI and resumed logging
11:55	12:45	00:50	Wireline Geophys	Run-in PS Tool and resumed logging
12:45	13:00	00:15	Geophys - Additional Casing Pull	Geophys logging completed, back to 44.00m / Pull 12.00m of Geobor (Back to 32.00m)
13:00	14:15	01:15	Wireline Geophys	Run-in calliper and resume Geophys logging
14:15	14:50	00:35	Wireline Geophys	Calliper logging completed back to 32.00m, run-in ABI. Pull Geobor back to 20.00m, hole dipped, open to 33.70m at time of dip.

DOME

Summary of Events

Begin	End	Duration	Type	Description
14:50	16:45	01:55	Wireline Geophys	Run-in calliper and resumed Geophys logging
16:45	17:25	00:40	Trip-out Geobor Casing	Geophys completed at 20.00m / EOH confirmed by client rep / Pulling back remaining Geobor
17:25	18:45	01:20	Trip-out 7" Casing	Geobor on deck / Pulling 7" casing
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover talk / Night shift sign onto PTW
19:00	19:30	00:30	Fuel up/Wash Down/Break	TBT on shift tasks / Inspection of plant
19:30	24:00	04:30	Standby Wind Speed - Drilling Operations	Wind speed exceeds limits for craneage - unable to clear cantilever of pallets of drill pipe / Crew conduct seafastening operations where possible

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	3:25	0.65%
Pre-Move Prep	0:00	0:00	7:20	1.39%
MMO Pre-Start Watch	0:00	0:00	0:50	0.16%
DEME - Vessel Operations	0:00	0:00	5:45	1.09%
Geophys - Additional Casing Pull	0:35	0:00	1:15	0.24%
Geophys - 1st Casing Pull	0:55	0:00	1:20	0.25%
Fuel up/Wash Down/Break	1:50	0:00	18:55	3.59%
Geobor NCD	0:00	0:00	43:07	8.17%
Fugro Downtime	0:00	0:00	2:40	0.51%
Advance/Washbore 7" casing	0:00	0:00	4:20	0.82%
Shift Handover Talk	0:00	0:00	4:40	0.88%
Offshore Resupply	0:00	0:00	0:50	0.16%
Fugro Downtime - Breakdown	0:00	0:00	3:50	0.73%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.33%
Mobilisation	0:00	168:00	208:25	39.51%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.59%
Transit between BH	0:00	0:00	10:30	1.99%
Transit from Falmouth to Site	0:00	34:00	44:45	8.48%
Run-in Conductor Casing	0:00	0:00	7:45	1.47%
Vibrohammer Operations	0:00	0:00	4:15	0.81%
Run-in 7" Casing	0:00	0:00	2:45	0.52%
Run-in Geobor Casing	0:00	0:00	2:05	0.39%
Push Sampling	0:00	0:00	34:39	6.57%
Downhole Hammer Sampling	0:00	0:00	4:09	0.79%
Geobor Coring	3:55	0:00	32:45	6.21%
CPT Operations	0:00	0:00	10:40	2.02%
Wireline Geophys	10:15	0:00	15:25	2.92%
Trip-out Geobor Casing	0:40	0:00	2:35	0.49%
Trip-out 7" Casing	1:20	0:00	4:20	0.82%
Trip-out Conductor Casing	0:00	0:00	1:35	0.30%
Standby Wind Speed - Drilling Operations	4:30	0:00	4:30	0.85%
Standby Current Speed - Casing	0:00	0:00	1:35	0.30%
Total	24:00	202:00	527:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	12.3260	Days	27.3911%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	11.0000	N°	24.4444%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysinga	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12
Tomasz Michalowsk	Surveyor	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Nick Powney	HSE Advisor	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1201
Fugro	21	252	/	5592
Total	26	312	/	6793

Lost & Damaged

Replacement CPT winch en-route to Ireland - ETA Monday

Deliverables

Jean Lutz data for BH26 and BH01 uploaded to GAIA and SPL Sharepoint

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Project anemometer on bridge believed to be shielded or being affected by eddies during current winds. Wind speeds from the crane anemometer and handheld anemometer readings above 12m/s.
Additional time spent conducting geophysical logging due to strong winds preventing casing casing pull operations.

Client Representative Comments

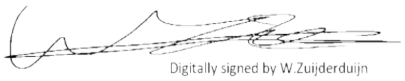
Fugro Representative



Rob Fraser
Senior Project Manager

11/06/2022

Client Representative



10/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	23	**Date:**	11/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH01 / BH28 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	39
Environmental Incident	0	/	0
Shift Handover Talk	2	/	43
Permit to Work	0	/	32
Mob Induction	0	/	27
HOC Cards	2	/	50
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	21
Shift Task Briefing	2	/	31
Vessel Induction	0	/	21
Project Induction	0	/	31
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits : Working at Height / Hot Works / Lifting Operations / General Permit / Issued by DEME

HOCs : Various ratchet straps were damaged / DEME crew removed paint from the deck, no control measures in place, work areas covered in paint and heavy metal dust.

Activities performed these 24 hours

Waiting on weather window to pull conductor casing / Trip-out 20" conductor casing / Installation of seafastenings / Crew transfer - 3no OFF, 1no ON / Rig move to BH28

Planned Work for Next 24 Hours

Run-in 20" conductor casing / Run-in 7" + Geobor casing / Commence drilling operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.2	1.1	N/A	1.0	1800 : Current meter inboard due to transit
Wave height (Hs)	m	1.0	0.9	N/A	0.7	1800: Wave radar inboard due to transit
Wind direction	Degrees	SW	SSW	WSW	WSW	
Wind speed (m/s)	m/s	13.5	8.0	7.0	6.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
11/0600	SW	10	13	0.6	S	1.0	6	-	0.0	-	1.2	2.0
11/0900	SW	9	12	0.6	S	0.9	6	-	0.0	-	1.1	1.8
11/1200	SSW	9	12	0.6	S	0.9	6	-	0.0	-	1.1	1.9
11/1500	SSW	9	12	0.6	SSW	1.0	6	-	0.0	-	1.2	1.9
11/1800	WSW	7	9	0.4	SSW	1.0	6	S	0.1	13	1.1	1.8
11/2100	WSW	6	8	0.4	SSW	0.9	6	S	0.2	13	0.9	1.6
12/0000	WSW	7	10	0.5	SSW	0.7	6	S	0.2	13	0.8	1.4
12/0300	WSW	7	9	0.4	SSW	0.6	6	S	0.2	13	0.7	1.2
12/0600	WSW	5	7	0.3	SSW	0.5	6	S	0.1	13	0.6	1.0
12/0900	WSW	5	7	0.3	SSW	0.4	6	S	0.1	13	0.5	0.9
12/1200	WSW	6	8	0.4	SSW	0.4	6	S	0.1	12	0.5	0.9
12/1500	W	6	7	0.3	SSW	0.4	5	S	0.1	12	0.5	0.9
12/1800	WNW	5	7	0.1	SSW	0.5	5	S	0.1	11	0.5	0.9
12/2100	W	5	6	0.1	SSW	0.5	5	S	0.1	11	0.5	0.9
13/0000	W	6	8	0.2	SSW	0.4	5	S	0.1	11	0.4	0.7
13/0300	WNW	5	6	0.1	SSW	0.3	5	S	0.1	10	0.3	0.6
13/0600	W	5	6	0.1	SSW	0.3	5	SSW	0.1	10	0.3	0.6
13/0900	SW	5	6	0.1	SSW	0.2	5	SSW	0.1	10	0.3	0.4
13/1200	S	8	11	0.2	SSW	0.1	5	SSW	0.1	10	0.3	0.5
13/1500	S	8	11	0.4	SSW	0.2	5	SSW	0.1	10	0.5	0.8
13/1800	SSW	8	11	0.5	SSW	0.3	5	SSW	0.1	10	0.6	1.0
13/2100	SW	7	9	0.4	SSW	0.3	5	SSW	0.1	10	0.5	0.9

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Standby Wind Speed - Drilling Operations	Lunch
00:30	06:45	06:15	Standby Wind Speed - Drilling Operations	Wind speed exceeds limits for craneage - unable to clear cantilever of pallets of drill pipe / Crew conduct seafastenings operations where possible
06:45	07:00	00:15	Standby Wind Speed - Drilling Operations	Shift handover talk / Day shift sign onto PTW
07:00	07:20	00:20	Standby Wind Speed - Drilling Operations	TBT and daily inspections
07:20	09:45	02:25	Standby Wind Speed - Drilling Operations	Wind above limits for lifting operations
09:45	11:15	01:30	Pre-Move Prep	Wind speeds generally below 12m/s gust displayed via crane anemometer / Clear cantilever of casing pallets / Lift off CPT beam
11:15	14:05	02:50	Pre-Move Prep	Cantilever cleared, casing pallets secured with seafastenings
14:05	15:20	01:15	Trip-out Conductor Casing	Commenced pulling conductor casing on low tide slack
15:20	17:10	01:50	Pre-Move Prep	Conductor casing on deck / Prep conductor casing lengths for BH28 install
17:10	17:50	00:40	DEME - Vessel Operations	Commenced jacking down to water and wait for CTV to arrive to conduct a crew change
17:50	18:05	00:15	Offshore Crew Change	CTV pushing on, 1 x Pax on sign and 3 x Pax off sign
18:05	18:45	00:40	DEME - Vessel Operations	Continuation jacking down / Pull legs and start move to next location
18:45	19:00	00:15	DEME - Vessel Operations	Shift handover talk / Night shift sign PTW
19:00	19:30	00:30	DEME - Vessel Operations	TBT on tasks for the shift / Legs clear of seabed
19:30	21:05	01:35	DEME - Vessel Operations	Commence move to BH28
21:05	22:20	01:15	DEME - Vessel Operations	Over BH28 / Lower legs to seabed
22:20	24:00	01:40	DEME - Vessel Operations	Preload operations at BH28

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	3:25	0.62%
Pre-Move Prep	6:10	0:00	13:30	2.45%
MMO Pre-Start Watch	0:00	0:00	0:50	0.15%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
DEME - Vessel Operations	6:35	0:00	12:20	2.24%
Geophys - Additional Casing Pull	0:00	0:00	1:15	0.23%
Geophys - 1st Casing Pull	0:00	0:00	1:20	0.24%
Fuel up/Wash Down/Break	0:00	0:00	18:55	3.43%
Geobor NCD	0:00	0:00	43:07	7.82%
Fugro Downtime	0:00	0:00	2:40	0.48%
Advance/Washbore 7" casing	0:00	0:00	4:20	0.79%
Shift Handover Talk	0:00	0:00	4:40	0.85%
Offshore Resupply	0:00	0:00	0:50	0.15%
Fugro Downtime - Breakdown	0:00	0:00	3:50	0.70%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.19%
Mobilisation	0:00	168:00	208:25	37.79%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.43%
Transit between BH	0:00	0:00	10:30	1.90%
Transit from Falmouth to Site	0:00	34:00	44:45	8.11%
Run-in Conductor Casing	0:00	0:00	7:45	1.41%
Vibrohammer Operations	0:00	0:00	4:15	0.77%
Run-in 7" Casing	0:00	0:00	2:45	0.50%
Run-in Geobor Casing	0:00	0:00	2:05	0.38%
Push Sampling	0:00	0:00	34:39	6.28%
Downhole Hammer Sampling	0:00	0:00	4:09	0.75%
Geobor Coring	0:00	0:00	32:45	5.94%
CPT Operations	0:00	0:00	10:40	1.93%
Wireline Geophys	0:00	0:00	15:25	2.80%
Trip-out Geobor Casing	0:00	0:00	2:35	0.47%
Trip-out 7" Casing	0:00	0:00	4:20	0.79%
Trip-out Conductor Casing	1:15	0:00	2:50	0.51%
Offshore Crew Change	0:15	0:00	0:15	0.05%
Standby Wind Speed - Drilling Operations	9:45	0:00	14:15	2.58%
Standby Current Speed - Casing	0:00	0:00	1:35	0.29%
Total	24:00	202:00	551:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	13.3260	Days	29.6133%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	12.0000	N°	26.6667%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysing	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Mike Collins	SPL Representative	12
Tomasz Michalowsk	Surveyor	12
Muhammad Khairulannuar	Surveyor	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Nick Powney	HSE Advisor	7
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1261
Fugro	22	259	/	5851
Total	27	319	/	7112

Lost & Damaged

CPT winch arriving in Wicklow on Monday / Husky to transfer winch to Neptune during suitable weather and operational window

Deliverables

Data being uploaded to GAIA / Comments received on BH logs

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Morning crew change aborted due to casing not being pulled overnight due to conditions. 1no ON-signer standing by onboard Panther for evening crew change.
Crew change: [3no OFF: Mike Collins, Nick Powney, Tomasz Michalowski] [1no ON: Muhamad Khairulannuar]

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

12/06/2022

Client Representative



11/06/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	24	**Date:**	12/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH28 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	41
Environmental Incident	0	/	0
Shift Handover Talk	2	/	45
Permit to Work	4	/	40
Mob Induction	0	/	27
HOC Cards	1	/	51
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	22
Shift Task Briefing	2	/	33
Vessel Induction	1	/	22
Project Induction	1	/	32
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permit : Open Permits : Working at Height / Hot Works / Lifting Operations / General Permit / Issued by DEME

Activities performed these 24 hours

Preload and jacking operations at BH28 / Installation of conductor casing / 7" / Geobor casing / Commenced drilling operations at BH28

Planned Work for Next 24 Hours

Continuation of drilling operations at BH28

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.8	1.2	1.5	1.2	
Wave height (Hs)	m	1.5	0.5	0.7	0.5	
Wind direction	Degrees	WSW	W	WNW	W	
Wind speed (m/s)	m/s	4.0	7.0	6.0	5.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
12/0600	WSW	6	7	0.3	SSW	0.5	6	S	0.1	13	0.6	1.0
12/0900	WSW	6	8	0.4	SSW	0.4	6	S	0.1	13	0.6	0.9
12/1200	W	6	8	0.4	SSW	0.4	6	S	0.1	12	0.5	0.9
12/1500	W	6	7	0.3	SSW	0.4	5	S	0.1	12	0.5	0.9
12/1800	WNW	5	6	0.3	SSW	0.4	5	S	0.1	11	0.5	0.8
12/2100	W	5	6	0.2	SSW	0.4	5	S	0.1	11	0.5	0.8
13/0000	W	6	8	0.3	SSW	0.3	5	S	0.1	11	0.5	0.8
13/0300	WNW	5	7	0.3	SSW	0.3	5	S	0.1	10	0.4	0.7
13/0600	WNW	4	5	0.2	SSW	0.3	5	SSW	0.1	10	0.4	0.6
13/0900	SW	4	5	0.1	SSW	0.2	5	SSW	0.1	10	0.2	0.4
13/1200	S	8	10	0.2	SSW	0.1	5	SSW	0.1	10	0.3	0.4
13/1500	S	9	12	0.5	SSW	0.2	5	SSW	0.1	10	0.5	0.9
13/1800	SSW	9	11	0.5	SSW	0.2	5	SSW	0.1	10	0.6	0.9
13/2100	SW	7	9	0.5	SSW	0.2	4	SSW	0.1	10	0.5	0.8
14/0000	NW	4	5	0.2	SSW	0.3	4	SSW	0.1	9	0.4	0.6
14/0300	NNW	2	2	0.0	SSW	0.3	4	SSW	0.1	8	0.3	0.4
14/0600	SSE	2	2	0.0	SSW	0.2	4	SSW	0.1	7	0.2	0.3
14/0900	S	3	5	0.1	SSW	0.1	4	SSW	0.1	6	0.2	0.3
14/1200	SSE	5	7	0.1	SSW	0.1	4	-	0.0	-	0.2	0.3
14/1500	SSE	7	9	0.4	SSW	0.1	5	-	0.0	-	0.4	0.6
14/1800	S	6	8	0.4	SSW	0.1	5	-	0.0	-	0.4	0.7
14/2100	S	5	7	0.4	S	0.1	5	-	0.0	-	0.4	0.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	DEME - Vessel Operations	Lunch
00:30	06:00	05:30	DEME - Vessel Operations	Vessel jacking operations (0340: Final pre-load / 0510: Max pressure reached / 0545: At working height / 0550: Boom up the main crane)
06:00	06:45	00:45	Post-Move Prep	Neptune jacking complete / Removed all sea-fastenings on all required conductor casings
06:45	07:00	00:15	Fuel up/Wash Down/Break	Shift handover talk / Day shift sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	08:10	00:50	Standby Current Speed - Casing	On position at BH28, all equipment ready for deployment
08:10	09:20	01:10	Run-in Conductor Casing	Commenced run-in conductor casing
09:20	10:15	00:55	Vibrohammer Operations	Conductor casing in BML 1.60m / set-up for lift and deploy vibrohammer
10:15	12:15	02:00	Vibrohammer Operations	Conductor in 2.20m / DTM = 43.60m / Vibrohammer lifted off and secured in the seafastenings / Dolly lifted and secured on tipper / 7" casing lifted on the cantilever.
12:15	12:45	00:30	Fuel up/Wash Down/Break	Lunch
12:45	14:20	01:35	Run-in 7" Casing	Commenced running-in 7" casing to m/l, commenced drilling and sample operations from the m/l
14:20	14:35	00:15	Push Sampling	Shelby thick wall with catcher / 0.00m to 1.00m
14:35	14:45	00:10	Geobor NCD	NCD from 0.00m to 1.00m
14:45	15:45	01:00	Push Sampling	Shelby thick wall with catcher / 1.00m to 1.40m
15:45	16:10	00:25	Downhole Hammer Sampling	Hammer sample from 1.00m to 1.45m
16:10	16:50	00:40	Geobor NCD	NCD from 1.00m to 2.00m
16:50	17:20	00:30	Push Sampling	Shelby thick wall with catcher / 2.00m to 3.00m
17:20	17:35	00:15	Downhole Hammer Sampling	Hammer sample from 2.00m to 2.45m
17:35	18:05	00:30	Geobor NCD	NCD from 2.00m to 2.50m
18:05	18:15	00:10	Downhole Hammer Sampling	Hammer sample from 2.50m to 2.95m
18:15	18:45	00:30	Run-in Geobor Casing	Rod Shute and empty 7" casing pallet removed from the cantilever and lift on the casing pallet
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover talk / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations for the shift from 2.50m BML
19:15	20:05	00:50	Run-in Geobor Casing	Run-in Geobor and clean out 2.50m BML
20:05	20:25	00:20	Push Sampling	Shelby thick wall with catcher / 2.50m to 3.00m / 0.40m recovery
20:25	20:45	00:20	Geobor NCD	NCD 2.50m to 3.00m

Summary of Events

Begin	End	Duration	Type	Description
20:45	20:55	00:10	Push Sampling	Shelby thick wall with catcher / 3.00m to 3.50m / 0.40m recovery
20:55	21:05	00:10	Geobor NCD	NCD 3.00m to 3.50m
21:05	21:30	00:25	Push Sampling	Shelby thick wall with catcher / 3.50m to 4.00m / 0.30 recovery
21:30	21:45	00:15	Geobor NCD	NCD 3.50m to 4.00m
21:45	22:00	00:15	Push Sampling	Shelby thick wall with catcher / 4.00m to 4.50m / 0.50m recovery
22:00	22:15	00:15	Geobor NCD	NCD 4.00m to 4.50m
22:15	22:25	00:10	Push Sampling	Shelby thick wall with catcher from 4.50m
22:25	22:35	00:10	Downhole Hammer Sampling	Hammer sample / 4,50m to 4.80m / 0.30m recovery
22:35	22:50	00:15	Geobor NCD	NCD 4,50m to 5.00m
22:50	23:05	00:15	Push Sampling	Shelby thick wall with catcher from 5.00m
23:05	23:25	00:20	Downhole Hammer Sampling	Hammer sample 5.00m to 5.40m
23:25	23:40	00:15	Geobor NCD	NCD 5.00m to 5.50m
23:40	23:55	00:15	Geobor NCD	Shelby thick wall / 5.50m to 6.00m / 0.50 recovery
23:55	24:00	00:05	Geobor NCD	NCD 5.50m to 6.00m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:45	0:00	4:10	0.72%
Pre-Move Prep	0:00	0:00	13:30	2.35%
MMO Pre-Start Watch	0:00	0:00	0:50	0.14%
DEME - Vessel Operations	6:00	0:00	18:20	3.19%
Geophys - Additional Casing Pull	0:00	0:00	1:15	0.22%
Geophys - 1st Casing Pull	0:00	0:00	1:20	0.23%
Fuel up/Wash Down/Break	1:35	0:00	20:30	3.56%
Geobor NCD	3:10	0:00	46:17	8.04%
Fugro Downtime	0:00	0:00	2:40	0.46%
Advance/Washbore 7" casing	0:00	0:00	4:20	0.75%
Shift Handover Talk	0:00	0:00	4:40	0.81%
Offshore Resupply	0:00	0:00	0:50	0.14%
Fugro Downtime - Breakdown	0:00	0:00	3:50	0.67%
Neptune arrival to Falmouth	0:00	0:00	17:35	3.06%
Mobilisation	0:00	168:00	208:25	36.21%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.29%
Transit between BH	0:00	0:00	10:30	1.82%
Transit from Falmouth to Site	0:00	34:00	44:45	7.78%
Run-in Conductor Casing	1:10	0:00	8:55	1.55%
Vibrohammer Operations	2:55	0:00	7:10	1.25%
Run-in 7" Casing	1:35	0:00	4:20	0.75%
Run-in Geobor Casing	1:20	0:00	3:25	0.59%
Push Sampling	3:20	0:00	37:59	6.60%
Downhole Hammer Sampling	1:20	0:00	5:29	0.95%
Geobor Coring	0:00	0:00	32:45	5.69%
CPT Operations	0:00	0:00	10:40	1.85%
Wireline Geophys	0:00	0:00	15:25	2.68%
Trip-out Geobor Casing	0:00	0:00	2:35	0.45%
Trip-out 7" Casing	0:00	0:00	4:20	0.75%
Trip-out Conductor Casing	0:00	0:00	2:50	0.49%
Offshore Crew Change	0:00	0:00	0:15	0.04%

Activity Summary

Activity	Today	Planned	To Date	Progress
Standby Wind Speed - Drilling Operations	0:00	0:00	14:15	2.48%
Standby Current Speed - Casing	0:50	0:00	2:25	0.42%
Total	24:00	202:00	575:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	14.3260	Days	31.8356%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	13.0000	N°	28.8889%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysinga	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	1309
Fugro	20	240	/	6091
Total	24	288	/	7400

Lost & Damaged

CPT winch due to delivery in Wicklow on Monday.

Deliverables

Drilling data being uploaded to GAIA

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

12/06/2022

Client Representative



12/06/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	25	**Date:**	13/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH28 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	43
Environmental Incident	0	/	0
Shift Handover Talk	2	/	47
Permit to Work	4	/	44
Mob Induction	0	/	27
HOC Cards	1	/	52
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	23
Shift Task Briefing	2	/	35
Vessel Induction	0	/	22
Project Induction	0	/	32
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

HOCs : Water tank, during re-filling the tank was over filled, this led to excess water on the tank causing a slip hazard

Activities performed these 24 hours

Continuation of drilling operations at BH28

Planned Work for Next 24 Hours

Continuation of drilling operations at BH28 / Offshore resupply

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.4	0.8	1.6	1.1	
Wave height (Hs)	m	0.9	0.5	0.4	0.8	
Wind direction	Degrees	W	S	SSW	SSW	
Wind speed (m/s)	m/s	5.0	1.0	1.0	3.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
13/0600	W	4	5	0.2	SSW	0.3	5	SSW	0.1	10	0.4	0.6
13/0900	SW	4	5	0.1	SSW	0.2	5	SSW	0.1	10	0.2	0.4
13/1200	S	8	10	0.2	SSW	0.2	5	SSW	0.1	10	0.3	0.5
13/1500	S	10	13	0.5	SSW	0.2	5	SSW	0.1	10	0.5	0.8
13/1800	SSW	10	13	0.5	SSW	0.2	5	SSW	0.1	10	0.6	0.9
13/2100	SW	7	9	0.3	SSW	0.3	4	SSW	0.1	10	0.5	0.8
14/0000	NW	4	5	0.2	SSW	0.3	4	SSW	0.1	9	0.4	0.6
14/0300	NNE	3	4	0.1	SSW	0.3	4	SSW	0.1	8	0.3	0.5
14/0600	SE	3	3	0.0	SSW	0.3	4	SSW	0.1	7	0.3	0.4
14/0900	SSE	3	3	0.0	SSW	0.2	4	SSW	0.1	6	0.2	0.3
14/1200	SE	5	6	0.1	SSW	0.1	4	-	0.0	-	0.2	0.3
14/1500	SSE	5	6	0.1	SSW	0.1	5	-	0.0	-	0.2	0.3
14/1800	S	4	5	0.1	SSW	0.1	5	-	0.0	-	0.2	0.3
14/2100	SSW	4	5	0.2	S	0.1	5	-	0.0	-	0.2	0.3
15/0000	SW	3	4	0.1	S	0.2	5	S	0.1	14	0.2	0.4
15/0300	SSW	4	5	0.2	S	0.2	5	S	0.1	14	0.2	0.4
15/0600	SSW	4	5	0.1	S	0.1	14	S	0.1	5	0.2	0.3
15/0900	SE	4	6	0.1	S	0.1	14	S	0.1	5	0.2	0.3
15/1200	SSE	4	6	0.1	S	0.1	14	-	0.0	-	0.1	0.2
15/1500	S	6	8	0.2	S	0.1	14	-	0.0	-	0.2	0.3
15/1800	SW	5	6	0.3	S	0.1	14	S	0.1	3	0.3	0.5
15/2100	SSW	4	5	0.2	S	0.2	3	S	0.1	14	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Geobor NCD	NCD 5.50m to 6.0m
00:15	00:45	00:30	Fuel up/Wash Down/Break	Lunch
00:45	01:10	00:25	Push Sampling	Shelby thick walled / 6.00m to 6.50m
01:10	01:25	00:15	Push Sampling	Shelby thick walled / 6.00m to 6.50
01:25	01:40	00:15	Downhole Hammer Sampling	Hammer sample 6.00m to 06.45m 26 blows
01:40	01:55	00:15	Geobor NCD	NCD 6.00m to 6.50m
01:55	02:05	00:10	Push Sampling	Shelby thick walled / 6.50m to 7.10m, 0.60m recovery
02:05	02:20	00:15	Push Sampling	Shelby thick walled / 7.10m to 7.50m / 0.50m recovery
02:20	02:35	00:15	Geobor NCD	NCD 6.50m to 7.50m
02:35	02:50	00:15	Push Sampling	Shelby thick walled / 7.50m to 8.00m / 0.50m recovery
02:50	03:10	00:20	Push Sampling	Shelby thin walled / 8.00 to 8.50m / 0.15m recovery
03:10	03:30	00:20	Geobor NCD	NCD 7.50m to 8.50m
03:30	03:45	00:15	Push Sampling	Shelby thin walled / 8.50m to 9.00 / 0.50m recovery
03:45	04:00	00:15	Push Sampling	Shelby thin walled / 9.00m to 9.50m / 0.50m recovery
04:00	04:10	00:10	Geobor NCD	NCD 8.50m to 9.50m
04:10	04:20	00:10	Push Sampling	Shelby thin walled / 9.50m to 10.50m / 0.50 recovery
04:20	04:35	00:15	Push Sampling	Shelby thin walled / 10.00m to 10.50m / 0.50m recovery
04:35	04:50	00:15	Push Sampling	NCD 9.50m to 10.50m
04:50	05:00	00:10	Push Sampling	Shelby thin walled / 10.50m to 11.00m / 0.50m recovery
05:00	05:15	00:15	Push Sampling	Shelby thin walled / 11.00m to 11.50m
05:15	05:30	00:15	Geobor NCD	NCD 10.50m to 11.50m
05:30	05:45	00:15	Push Sampling	Shelby thin walled / 11.50m to 12.50m / 0.50m recovery
05:45	05:55	00:10	Push Sampling	Shelby thin walled / 12.00m to 12.50m / 0.50m recovery
05:55	06:10	00:15	Geobor NCD	NCD 11.50m to 12.50m
06:10	06:20	00:10	Push Sampling	Shelby thin walled / 12.50m to 13.00m

DOME

Summary of Events

Begin	End	Duration	Type	Description
06:20	06:35	00:15	Push Sampling	Shelby thin walled / 13.00m to 13.50m
06:35	06:45	00:10	Geobor NCD	NCD 12.50m to 13.50m
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:30	00:30	Fuel up/Wash Down/Break	TBT, daily inspections
07:30	07:40	00:10	Push Sampling	Shelby thin wall / 13.50m to 14.00m
07:40	08:00	00:20	Geobor NCD	NCD 13.50m to 14.00m
08:00	08:20	00:20	Push Sampling	Shelby thick walled with catcher / 14.00m to 14.50m
08:20	08:35	00:15	Downhole Hammer Sampling	Hammer sample 14.00m to 14.50m
08:35	08:50	00:15	Geobor NCD	NCD 14.00m to 14.50m
08:50	08:55	00:05	Push Sampling	Shelby thick walled with catcher / 14.50m to 14.50m
08:55	09:30	00:35	Downhole Hammer Sampling	Hammer sample / 14.50m to 15.00m
09:30	09:50	00:20	Geobor NCD	NCD 14.50m to 15.00m
09:50	10:05	00:15	Downhole Hammer Sampling	Hammer sample 15.00m to 15.45m
10:05	10:20	00:15	Geobor NCD	15.00m to 15.50m
10:20	10:40	00:20	Push Sampling	Shelby thick walled with catcher / 15.50m to 15.60m
10:40	11:00	00:20	Downhole Hammer Sampling	Hammer sample 15.60m to 16.05m
11:00	11:15	00:15	Geobor NCD	NCD 15.50m to 16.00m
11:15	11:35	00:20	Downhole Hammer Sampling	Hammer sample 16.00m to 16.45m
11:35	11:45	00:10	Geobor NCD	NCD 16.00m to 16.50m
11:45	12:00	00:15	Downhole Hammer Sampling	Hammer sample 16.50 to 16.95m
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	12:55	00:25	Downhole Hammer Sampling	Hammer sample 16.50m to 16.95m
12:55	13:10	00:15	Geobor NCD	NCD 16.50m to 17.00m
13:10	13:20	00:10	Downhole Hammer Sampling	Hammer sample 17.00m to 17.45m
13:20	13:30	00:10	DEME - Vessel Operations	Drilling operations stopped to allow the barge to stabilise
13:30	13:40	00:10	Geobor NCD	NCD 17.00m to 17.50m
13:40	14:00	00:20	Downhole Hammer Sampling	Hammer sample 17.50m to 17.95m
14:00	14:15	00:15	Geobor NCD	NCD 17.50m to 18.00m
14:15	14:40	00:25	Fugro Downtime - Breakdown	Dando not lifting hammer. Shut down and investigate
14:40	14:50	00:10	Downhole Hammer Sampling	Hammer sample 18.00m to 18.45m
14:50	15:10	00:20	Geobor NCD	NCD 18.00m to 18.50m
15:10	15:25	00:15	Downhole Hammer Sampling	Hammer sample 18.50m to 18.80m
15:25	15:35	00:10	Geobor NCD	NCD 18.50m to 19.00m
15:35	15:55	00:20	Geobor NCD	NCD 19.00m to 19.45m
15:55	16:05	00:10	Geobor NCD	NCD 19.00m to 19.50m
16:05	16:25	00:20	Downhole Hammer Sampling	Hammer sample 19.50m to 19.95m
16:25	16:40	00:15	Geobor NCD	NCD 19.50m to 20.00m
16:40	16:50	00:10	Push Sampling	Shelby thin walled / 20.00m to 20.00m / hole collapsed unable to push
16:50	17:05	00:15	Geobor NCD	NCD 19.50m to 20.00m / Clean back down to 20.00m
17:05	17:20	00:15	Downhole Hammer Sampling	Hammer sample 20.00m to 20.35m
17:20	17:35	00:15	Geobor NCD	NCD 20.00m to 20.50m
17:35	17:50	00:15	Push Sampling	Shelby thin walled / 20.50m to 20.85m
17:50	18:10	00:20	Geobor NCD	NCD 20.50m to 21.00m
18:10	18:20	00:10	Push Sampling	Shelby thin walled / 21.00m to 21.50m
18:20	18:35	00:15	Geobor NCD	NCD 21.00m to 21.50m
18:35	18:45	00:10	Fuel up/Wash Down/Break	Fuel up
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Night shift sign PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations for the shift

Summary of Events

Begin	End	Duration	Type	Description
19:15	19:30	00:15	Push Sampling	Shelby thin walled / 21.50 to 22.00m / 0.45m recovery, damaged tube.
19:30	19:45	00:15	Push Sampling	Shelby thick walled / 22.00m to 22.50m / 0.40m recovery
19:45	20:00	00:15	Geobor NCD	NCD 21.50m to 22.50m
20:00	20:15	00:15	Push Sampling	Shelby thick walled / 22.50m to 23.00m / 0.50m recovery
20:15	20:30	00:15	Push Sampling	Shelby thick walled / 23.00m to 23.50m / 0.50m recovery
20:30	20:45	00:15	Geobor NCD	NCD 22.50m to 23.50m
20:45	20:55	00:10	Push Sampling	Shelby thick walled / 23.50m to 24.00m / 0.40 recovery
20:55	21:05	00:10	Push Sampling	Shelby thick walled / 24.00m to 24.50m / 0.50m recovery
21:05	21:15	00:10	Geobor NCD	NCD 23.50m to 24.50m
21:15	21:25	00:10	Push Sampling	Shelby thick walled / 24.50 to 25.00m / 0.50m recovery
21:25	21:40	00:15	Push Sampling	Shelby thick walled / 25.00m to 25.50m / 0.50m recovery
21:40	22:00	00:20	Geobor NCD	NCD 24.50m to 25.50m
22:00	22:10	00:10	Push Sampling	Shelby thick walled / 25.50m to 26.00m / 0.40m recovery
22:10	22:25	00:15	Push Sampling	Shelby thick walled / 26.00m to 26.50m / 0.40m recovery
22:25	22:45	00:20	Push Sampling	NCD 25.50m to 26.50m
22:45	23:00	00:15	Push Sampling	Shelby thick walled / 26.50m to 27.00m / 0.40m recovered
23:00	23:15	00:15	Push Sampling	Shelby thin walled / 27.00m to 27.40m / no recovery tube damaged
23:15	23:35	00:20	Geobor NCD	NCD 26.50m to 27.00m
23:35	23:50	00:15	Push Sampling	Shelby thick walled / 27.50m to 28.00m
23:50	24:00	00:10	Push Sampling	Shelby thick walled / 28.00m to 28.50m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.70%
Pre-Move Prep	0:00	0:00	13:30	2.25%
MMO Pre-Start Watch	0:00	0:00	0:50	0.14%
DEME - Vessel Operations	0:10	0:00	18:30	3.09%
Geophys - Additional Casing Pull	0:00	0:00	1:15	0.21%
Geophys - 1st Casing Pull	0:00	0:00	1:20	0.22%
Fuel up/Wash Down/Break	1:55	0:00	21:55	3.66%
Geobor NCD	7:50	0:00	54:07	9.03%
Fugro Downtime	0:00	0:00	2:40	0.44%
Advance/Washbore 7" casing	0:00	0:00	4:20	0.72%
Shift Handover Talk	0:30	0:00	5:40	0.95%
Offshore Resupply	0:00	0:00	0:50	0.14%
Fugro Downtime - Breakdown	0:25	0:00	4:15	0.71%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.93%
Mobilisation	0:00	168:00	208:25	34.77%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.16%
Transit between BH	0:00	0:00	10:30	1.75%
Transit from Falmouth to Site	0:00	34:00	44:45	7.46%
Run-in Conductor Casing	0:00	0:00	8:55	1.49%
Vibrohammer Operations	0:00	0:00	7:10	1.20%
Run-in 7" Casing	0:00	0:00	4:20	0.72%
Run-in Geobor Casing	0:00	0:00	3:25	0.57%
Push Sampling	9:00	0:00	46:59	7.84%
Downhole Hammer Sampling	4:10	0:00	9:39	1.61%
Geobor Coring	0:00	0:00	32:45	5.46%

Activity Summary

Activity	Today	Planned	To Date	Progress
CPT Operations	0:00	0:00	10:40	1.78%
Wireline Geophys	0:00	0:00	15:25	2.57%
Trip-out Geobor Casing	0:00	0:00	2:35	0.43%
Trip-out 7" Casing	0:00	0:00	4:20	0.72%
Trip-out Conductor Casing	0:00	0:00	2:50	0.47%
Offshore Crew Change	0:00	0:00	0:15	0.04%
Standby Wind Speed - Drilling Operations	0:00	0:00	14:15	2.38%
Standby Current Speed - Casing	0:00	0:00	2:25	0.40%
Total	24:00	202:00	599:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9825	15.3085	Days	34.0189%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	14.0000	N°	31.1111%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysing	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	1357
Fugro	20	240	/	6331
Total	24	288	/	7688

Lost & Damaged

CPT winch delivered to Husky tug. To be transferred out to Neptune on Tuesday morning

Deliverables

Data being uploaded to GAIA

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Discussions underway between SPL and DEME on requirement for port call to Rosslare. if not conducted, use of tug support vessel will be required under VO to perform resupply and sample transfer operations

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

14/06/2022

Client Representative



13/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	26	**Date:**	14/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH28 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	45
Environmental Incident	0	/	0
Shift Handover Talk	2	/	49
Permit to Work	4	/	48
Mob Induction	0	/	27
Accident/Incident	1	/	1
HOC Cards	2	/	54
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	1	/	24
Shift Task Briefing	2	/	37
Vessel Induction	0	/	22
Project Induction	0	/	32
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Incident: DEME deck crewman cut his finger, injury required stitching, IP taken off the vessel and transferred to a shoreside hospital.

HOC's: Improvised floatation device constructed and placed inside the water tank, reduces the requirement for someone to climb up the steps up to the tank / Table used to store core samples ready to collapse.

Activities performed these 24 hours

Continuation of drilling operations at BH28 / Offshore resupply

Planned Work for Next 24 Hours

Continuation of drilling operations at BH28

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.0	0.7	1.0	0.4	
Wave height (Hs)	m	1.0	0.4	0.2	0.1	
Wind direction	Degrees	ENE	S	S	SW	
Wind speed (m/s)	m/s	4.0	1.0	0.5	0.2	

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
14/0600	ENE	3	3 0.0	SSW	0.1	5	SSW	0.1	3	0.1	0.2
14/0900	ESE	4	5 0.1	SSW	0.1	5	-	0.0	-	0.1	0.2
14/1200	S	5	6 0.1	SSW	0.1	5	-	0.0	-	0.2	0.3
14/1500	S	6	7 0.2	-	0.0	-	-	0.0	-	0.2	0.4
14/1800	S	5	7 0.3	-	0.0	-	-	0.0	-	0.3	0.5
14/2100	SSW	4	5 0.2	-	0.0	-	-	0.0	-	0.2	0.3
15/0000	SW	3	4 0.1	SSW	0.1	5	-	0.0	-	0.1	0.2
15/0300	SSW	3	3 0.1	SSW	0.1	5	S	0.1	14	0.1	0.2
15/0600	N	2	3 0.0	S	0.1	14	-	0.0	-	0.1	0.1
15/0900	E	3	3 0.0	S	0.1	14	-	0.0	-	0.1	0.1
15/1200	SE	4	5 0.1	S	0.1	13	-	0.0	-	0.1	0.2
15/1500	SSE	5	7 0.1	S	0.1	13	-	0.0	-	0.2	0.3
15/1800	S	7	9 0.3	S	0.1	13	-	0.0	-	0.4	0.6
15/2100	SW	6	7 0.3	S	0.1	13	-	0.0	-	0.4	0.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:35	00:35	Fuel up/Wash Down/Break	Lunch
00:35	01:00	00:25	Geobor NCD	NCD 27.50m to 28.50m
01:00	01:15	00:15	Push Sampling	Thick walled Shelby / 28.50m to 29.00m / 0.35 recovery
01:15	01:30	00:15	Push Sampling	Thick walled Shelby / 29.00m to 29.50m / 0.40m recovery
01:30	01:45	00:15	Geobor NCD	NCD 28.50m to 29.50m
01:45	02:20	00:35	Geobor Coring	Core run with serrated catcher / 29.50m to 30.50m / 1.00m recovery
02:20	02:45	00:25	Geobor Coring	Core run with serrated catcher / 30.50m to 1.00m recovery
02:45	03:15	00:30	Geobor Coring	Core run with serrated catcher / 31.50m to 32.50m / 1.00m recovery
03:15	03:40	00:25	Geobor Coring	Core run with serrated catcher / 32.50m to 33.50m / 1.00m recovery
03:40	04:00	00:20	Push Sampling	Thin walled Shelby / 33.50m to 33.90m
04:00	04:15	00:15	Geobor Coring	Core run with serrated catcher / 33.90m to 34.50m
04:15	04:30	00:15	Push Sampling	Shelby thin walled / 34.50m to 35.00m / 0.25m recovery
04:30	04:50	00:20	Push Sampling	Shelby thin walled with metal catcher / 34.50m to 35.50m
04:50	05:05	00:15	Geobor NCD	NCD 34.50m to 35.00m
05:05	05:25	00:20	Downhole Hammer Sampling	Hammer sample 35.00m to 35.50m / 100 blows / 0.20m recovery
05:25	05:35	00:10	Geobor NCD	NCD 35.00m to 35.50m
05:35	05:55	00:20	Push Sampling	Shelby thick walled / 35.50m to 35.90m
05:55	06:05	00:10	Geobor NCD	NCD 35.50m to 36.00m
06:05	06:20	00:15	Push Sampling	Shelby thick walled / 36.00m to 36.50m / 0.50m recovery
06:20	06:45	00:25	Geobor NCD	NCD 36.00m to 36.50m and flush
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:15	00:15	Fuel up/Wash Down/Break	TBT, Daily inspections
07:15	07:30	00:15	Push Sampling	Shelby thick wall / 36.50m to 37.00m
07:30	07:45	00:15	Geobor NCD	NCD 36.50m to 37.00m
07:45	08:00	00:15	Push Sampling	Shelby thick wall / 37.00m to 37.50m
08:00	08:20	00:20	Push Sampling	Shelby thick wall with catcher / 37.00m to 37.50m
08:20	08:30	00:10	Geobor NCD	NCD 37.00m to 37.50m
08:30	08:45	00:15	Push Sampling	Shelby thick wall with catcher / 37.50m to 38.00m
08:45	10:00	01:15	Fugro Downtime - Breakdown	Husky on site / Lift off replacement CPT winch / Lift off consumables
10:00	10:20	00:20	DEME - Vessel Operations	Transfer IP to Husky using FROG basket
10:20	10:45	00:25	Fugro Downtime - Breakdown	CPT winch repositioned
10:45	10:55	00:10	Geobor NCD	NCD 37.50m to 38.00m
10:55	11:05	00:10	Push Sampling	Shelby thick wall with catcher / 38.00m to 38.50m

Summary of Events

Begin	End	Duration	Type	Description
11:05	11:15	00:10	Geobor NCD	NCD 38.00m to 38.50m
11:15	11:25	00:10	Push Sampling	Shelby thick wall with catcher / 38.50m to 39.00m
11:25	11:30	00:05	Geobor NCD	NCD 38.50m to 39.00m
11:30	12:00	00:30	Push Sampling	Shelby thick wall with catcher / 39.00m to 39.50m
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	12:55	00:25	Geobor NCD	NCD 39.00m to 39.50m
12:55	13:05	00:10	Push Sampling	Shelby thick wall with catcher / 39.50m to 40.50m
13:05	13:20	00:15	Geobor NCD	NCD 39.50m to 40.00m
13:20	13:35	00:15	Push Sampling	Shelby thick wall with catcher / 40.00m to 40.50m
13:35	13:45	00:10	Geobor NCD	NCD 40.00m to 40.50m
13:45	13:55	00:10	Push Sampling	Shelby thick wall with catcher / 40.50m to 41.00m
13:55	14:10	00:15	Geobor NCD	NCD 40.50m to 41.00m
14:10	14:20	00:10	Push Sampling	Shelby thick wall with catcher / 41.00m to 41.50m
14:20	14:30	00:10	Geobor NCD	NCD 41.00m to 41.50m
14:30	14:45	00:15	Push Sampling	Shelby thin wall / 41.50m to 42.00m
14:45	15:00	00:15	Geobor NCD	NCD 41.50m to 42.00m
15:00	15:15	00:15	Push Sampling	Shelby thin wall / 42.00m to 42.50m
15:15	15:30	00:15	Geobor NCD	NCD 42.00m to 42.50m
15:30	15:40	00:10	Push Sampling	Shelby thin wall / 42.50m to 43.50m
15:40	16:05	00:25	Geobor NCD	NCD 42.50m to 43.50m
16:05	16:20	00:15	Push Sampling	Shelby thin wall / 43.50m to 44.50m
16:20	16:35	00:15	Geobor NCD	NCD 43.50m to 44.50m
16:35	17:00	00:25	Push Sampling	Shelby thin wall / 44.50m to 45.50m
17:00	17:25	00:25	Geobor Coring	Core run from 44.50m to 45.50m
17:25	18:00	00:35	Geobor Coring	Core run from 45.50m to 46.50m
18:00	18:25	00:25	Geobor Coring	Core run from 46.50m to 47.50m
18:25	18:45	00:20	Geobor Coring	Core run from 47.50m to 48.50m
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW / @48.50m
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling ops for the shift
19:15	19:45	00:30	Advance/Washbore 7" casing	7" casing, followed to 8.30m BML, run in 6.0m of 7" and connect up to string
19:45	20:10	00:25	Geobor Coring	Core run with serrated catcher / 48.50m to 49.50m / 0.80m recovery
20:10	20:55	00:45	Push Sampling	Shelby thick wall / 49.50m
20:55	21:25	00:30	Geobor Coring	Core run with serrated catcher / 49.50m to 50.50m / 1.0m recovery
21:25	21:45	00:20	Geobor NCD	Core run with serrated catcher / 50.50m to 51.50m / 1.0m recovery
21:45	22:10	00:25	Geobor NCD	Core run with serrated catcher / 51.50m to 53.00m / 1.50m recovery
22:10	22:40	00:30	Geobor Coring	Core run with serrated catcher / 53.00m to 54.50m / 1.50m recovery
22:40	23:15	00:35	Geobor Coring	Core run with serrated catcher / 54.50m to 56.00m / 1.0m recovery
23:15	23:40	00:25	Geobor Coring	Core run with serrated catcher / 56.00m to 57.00m
23:40	24:00	00:20	Geobor Coring	Core run with serrated catcher / 57.00m to 58.00m / 1.00m recovery

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.67%
Pre-Move Prep	0:00	0:00	13:30	2.17%
MMO Pre-Start Watch	0:00	0:00	0:50	0.13%
DEME - Vessel Operations	0:20	0:00	18:50	3.02%
Geophys - Additional Casing Pull	0:00	0:00	1:15	0.20%
Geophys - 1st Casing Pull	0:00	0:00	1:20	0.21%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Fuel up/Wash Down/Break	1:35	0:00	23:30	3.77%
Geobor NCD	5:40	0:00	59:47	9.59%
Fugro Downtime	0:00	0:00	2:40	0.43%
Advance/Washbore 7" casing	0:30	0:00	4:50	0.78%
Shift Handover Talk	0:30	0:00	6:10	0.99%
Offshore Resupply	0:00	0:00	0:50	0.13%
Fugro Downtime - Breakdown	1:40	0:00	5:55	0.95%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.82%
Mobilisation	0:00	168:00	208:25	33.43%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	3.03%
Transit between BH	0:00	0:00	10:30	1.68%
Transit from Falmouth to Site	0:00	34:00	44:45	7.18%
Run-in Conductor Casing	0:00	0:00	8:55	1.43%
Vibrohammer Operations	0:00	0:00	7:10	1.15%
Run-in 7" Casing	0:00	0:00	4:20	0.70%
Run-in Geobor Casing	0:00	0:00	3:25	0.55%
Push Sampling	6:45	0:00	53:44	8.62%
Downhole Hammer Sampling	0:20	0:00	9:59	1.60%
Geobor Coring	6:40	0:00	39:25	6.32%
CPT Operations	0:00	0:00	10:40	1.71%
Wireline Geophys	0:00	0:00	15:25	2.47%
Trip-out Geobor Casing	0:00	0:00	2:35	0.41%
Trip-out 7" Casing	0:00	0:00	4:20	0.70%
Trip-out Conductor Casing	0:00	0:00	2:50	0.45%
Offshore Crew Change	0:00	0:00	0:15	0.04%
Standby Wind Speed - Drilling Operations	0:00	0:00	14:15	2.29%
Standby Current Speed - Casing	0:00	0:00	2:25	0.39%
Total	24:00	202:00	623:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9304	16.2389	Days	36.0864%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	15.0000	N°	33.3333%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysing	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	1405
Fugro	20	240	/	6571
Total	24	288	/	7976

Lost & Damaged

Replacement CPT winch loaded onto Neptune. Initial electrical connection shows no fault.

Deliverables

Data being uploaded to GAIA

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

DEME have provided an incident report for the incident. Close out meeting planned for 15/6/22

Client Representative Comments

Fugro Representative



Rob Fraser
Senior Project Manager

15/06/2022

Client Representative



14/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	27	**Date:**	15/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH28				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	47
Environmental Incident	0	/	0
Shift Handover Talk	2	/	51
Permit to Work	4	/	52
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	1	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	39
Vessel Induction	0	/	22
Project Induction	0	/	32
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

HOC: Lorry strap securing the water tank access platform, creating a trip hazard when climbing.

Activities performed these 24 hours

EOH 28 / Commenced vessel jacking down operations (Vessel at standby height)

Planned Work for Next 24 Hours

Complete transit and jacking-up at BH09 / Run-in conductor casing / Complete offshore resupply and crew transfer.

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.7	0.1	0.4	N/A	Current meter inboard for transit
Wave height (Hs)	m	0.2	0.1	0.1	0.2	
Wind direction	Degrees	SW	S	S	W	
Wind speed (m/s)	m/s	2.0	1.0	1.0	1.2	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
15/0600	SW	2	3	0.0	S	0.2	14	-	0.0	-	0.2	0.3
15/0900	SSW	3	3	0.0	S	0.1	14	-	0.0	-	0.1	0.1
15/1200	S	4	5	0.1	S	0.1	13	-	0.0	-	0.1	0.2
15/1500	S	5	7	0.1	S	0.1	13	-	0.0	-	0.2	0.3
15/1800	S	7	9	0.3	S	0.1	13	-	0.0	-	0.4	0.6
15/2100	SSW	6	7	0.3	S	0.1	13	-	0.0	-	0.4	0.6
16/0000	W	5	6	0.1	S	0.2	13	-	0.0	-	0.2	0.4
16/0300	NNE	3	4	0.1	S	0.2	13	-	0.0	-	0.2	0.4
16/0600	SE	2	3	0.0	S	0.2	13	-	0.0	-	0.2	0.3
16/0900	S	5	6	0.1	S	0.2	13	-	0.0	-	0.2	0.4
16/1200	S	7	9	0.3	S	0.1	13	-	0.0	-	0.4	0.6
16/1500	S	8	11	0.4	S	0.1	12	-	0.0	-	0.5	0.8
16/1800	SSW	8	11	0.4	S	0.1	12	-	0.0	-	0.5	0.8
16/2100	S	8	10	0.4	S	0.1	12	-	0.0	-	0.4	0.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	01:05	00:35	Geobor Coring	Core run with serrated catcher / 58.00m to 59.00m / 1.00m recovery
01:05	01:35	00:30	Geobor Coring	Core run with serrated catcher / 59.00m to 60.50m / 1.50m recovery
01:35	02:20	00:45	Geobor Coring	Core run with serrated catcher / 60.50m to 62.00m / 1.50m recovery
02:20	03:00	00:40	Geobor Coring	Core run with serrated catcher / 62.00m to 63.50m / 1.50m recovery
03:00	03:30	00:30	Geobor Coring	Core run with serrated catcher / 63.50m to 65.00m / 1.50m recovery
03:30	04:15	00:45	Geobor Coring	Core run with serrated catcher / 65.00m to 66.50m / 1.50m recovery
04:15	05:05	00:50	Geobor Coring	Core run with serrated catcher / 66.50m to 68.00m / 1.40m recovery
05:05	05:35	00:30	Geobor Coring	Core run with serrated catcher / 68.00m to 69.50m / 1.50m recovery / E.O.H@69.50m, confirmed by the client rep
05:35	05:55	00:20	Trip-out 7" Casing	7" casing followed to 14.60m / run in 6.0m and connect to string
05:55	06:10	00:15	Advance/Washbore 7" casing	Connect back up to Geobor and flush hole
06:10	06:45	00:35	Geophys - 1st Casing Pull	Pull back Geobor to 49.80m and set-up for wireline geophysics
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift to sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	10:05	02:45	Wireline Geophys	Run-in and start Geophys logging. Service Comacchio while logging going on
10:05	10:20	00:15	Geophys - Additional Casing Pull	Geophys logging completed back to 49.80m / Geobor pulled back for Geophys logging
10:20	11:45	01:25	Wireline Geophys	Set-up, run in and start Geophys, logging back to 39.30m. Crane ops, moving equipment on deck, while logging is taken place.
11:45	12:10	00:25	Geophys - Additional Casing Pull	Geophys logging completed back to 39.30m / Pull Geobor back to 16.20m
12:10	13:15	01:05	Wireline Geophys	Set-up, run in and continue Geophys logging. Hole collapsed, dipping at 24m. Log from 24.00m back to 16.20m. / Unable to complete, hole has collapsed to base of Geobor
13:15	13:40	00:25	Fugro Downtime	Set-up CPT equipment. Cpt operator running tool inside casing to test new winch
13:40	14:30	00:50	Trip-out Geobor Casing	Commenced pulling remaining Geobor.
14:30	15:45	01:15	Trip-out 7" Casing	Commenced pulling 7" casing
15:45	17:05	01:20	Trip-out Conductor Casing	Preparation of cantilever for pulling conductor casing / Crane ops-moving equipment, lifting casing pallets etc. off the cantilever
17:05	18:00	00:55	Trip-out Conductor Casing	Commenced pulling 20" conductor casing
18:00	18:45	00:45	Trip-out Conductor Casing	Conductor casing on deck, continued removing equipment off the cantilever and sea fastening the casing
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	19:30	00:30	Fuel up/Wash Down/Break	TBT on shifts tasks
19:30	22:40	03:10	Pre-Move Prep	Commenced preparation work on the Conductor casing lengths for arrival and deployment at

DOME

Summary of Events

Begin	End	Duration	Type	Description
				BH09 / Crane operations complete at 2230 due to vessel preparation for jacking down
22:40	24:00	01:20	DEME - Vessel Operations	Commenced jacking-down to standby height / Project crew continuation of preparation work of Conductor Casing for BH09

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.64%
Pre-Move Prep	3:10	0:00	16:40	2.57%
MMO Pre-Start Watch	0:00	0:00	0:50	0.13%
DEME - Vessel Operations	1:20	0:00	20:10	3.11%
Geophys - Additional Casing Pull	0:40	0:00	1:55	0.30%
Geophys - 1st Casing Pull	0:35	0:00	1:55	0.30%
Fuel up/Wash Down/Break	1:20	0:00	24:50	3.84%
Geobor NCD	0:00	0:00	59:47	9.23%
Fugro Downtime	0:25	0:00	3:05	0.48%
Advance/Washbore 7" casing	0:15	0:00	5:05	0.79%
Shift Handover Talk	0:30	0:00	6:40	1.03%
Offshore Resupply	0:00	0:00	0:50	0.13%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.91%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.72%
Mobilisation	0:00	168:00	208:25	32.19%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	2.92%
Transit between BH	0:00	0:00	10:30	1.62%
Transit from Falmouth to Site	0:00	34:00	44:45	6.91%
Run-in Conductor Casing	0:00	0:00	8:55	1.38%
Vibrohammer Operations	0:00	0:00	7:10	1.11%
Run-in 7" Casing	0:00	0:00	4:20	0.67%
Run-in Geobor Casing	0:00	0:00	3:25	0.53%
Push Sampling	0:00	0:00	53:44	8.30%
Downhole Hammer Sampling	0:00	0:00	9:59	1.54%
Geobor Coring	5:05	0:00	44:30	6.87%
CPT Operations	0:00	0:00	10:40	1.65%
Wireline Geophys	5:15	0:00	20:40	3.19%
Trip-out Geobor Casing	0:50	0:00	3:25	0.53%
Trip-out 7" Casing	1:35	0:00	5:55	0.91%
Trip-out Conductor Casing	3:00	0:00	5:50	0.90%
Offshore Crew Change	0:00	0:00	0:15	0.04%
Standby Wind Speed - Drilling Operations	0:00	0:00	14:15	2.20%
Standby Current Speed - Casing	0:00	0:00	2:25	0.37%
Total	24:00	202:00	647:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9826	17.2215	Days	38.2700%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	16.0000	N°	35.5556%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysing	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	1453
Fugro	20	240	/	6811
Total	24	288	/	8264

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

16/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative

15/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	28	**Date:**	16/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH28 to BH09				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	49
Environmental Incident	0	/	0
Shift Handover Talk	2	/	53
Permit to Work	4	/	56
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	39
Vessel Induction	3	/	25
Project Induction	0	/	32
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Unable to deploy the casing due the winds gusting beyond the safe limits of the crane (12m/s)

Activities performed these 24 hours

Completed transit and jacking operations at BH09 / Completed crew transfer / Commenced preparation work for deployment of the Conductor casing.

Planned Work for Next 24 Hours

Complete deployment of casings / Commence drilling operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	N/A	0.5	0.2	0.8	Current meter inboard due to transit at 0600
Wave height (Hs)	m	0.2	0.4	0.2	0.1	
Wind direction	Degrees	SSE	S	SSW	SSW	
Wind speed (m/s)	m/s	2.0	13.5	14	13.5	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
16/0600	SSE	2	3	0.0	S	0.1	13	-	0.0	-	0.1	0.1
16/0900	SSW	4	5	0.1	S	0.1	13	-	0.0	-	0.1	0.2
16/1200	S	6	8	0.4	S	0.1	13	-	0.0	-	0.4	0.7
16/1500	SSW	9	11	0.6	S	0.1	12	-	0.0	-	0.6	1.0
16/1800	SSW	8	10	0.6	S	0.1	12	-	0.0	-	0.6	0.9
16/2100	SSW	7	9	0.5	S	0.1	12	-	0.0	-	0.5	0.9
17/0000	SSW	8	10	0.5	S	0.1	12	SSW	0.1	9	0.5	0.9
17/0300	SSW	9	11	0.6	S	0.1	12	SSW	0.1	9	0.6	1.1
17/0600	SSW	8	11	0.6	S	0.1	12	SSW	0.2	4	0.7	1.1
17/0900	SSW	8	11	0.6	SSW	0.3	4	S	0.1	12	0.7	1.2
17/1200	SSW	8	11	0.6	SSW	0.4	4	S	0.1	12	0.7	1.2
17/1500	SSW	7	9	0.5	SSW	0.5	4	S	0.1	12	0.7	1.2
17/1800	WSW	5	7	0.1	SSW	0.5	4	S	0.1	12	0.5	0.9
17/2100	NNW	6	8	0.2	SSW	0.4	4	SSW	0.1	11	0.4	0.7
18/0000	NNE	7	9	0.3	SSW	0.3	4	SSW	0.1	11	0.5	0.8
18/0300	NNE	8	11	0.4	SSW	0.2	4	SSW	0.1	11	0.5	0.8
18/0600	N	7	9	0.5	SSW	0.1	4	SSW	0.1	11	0.5	0.8
18/0900	NNE	6	7	0.4	SSW	0.1	4	SSW	0.1	11	0.4	0.7
18/1200	NE	5	6	0.4	SSW	0.1	11	-	0.0	-	0.4	0.7
18/1500	ESE	4	5	0.3	SSW	0.1	11	-	0.0	-	0.3	0.5
18/1800	E	4	5	0.3	SSW	0.1	11	-	0.0	-	0.3	0.6
18/2100	NNW	7	8	0.2	-	0.0	-	-	0.0	-	0.2	0.3

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	03:30	03:00	DEME - Vessel Operations	Continuation of seafastenings equipment, cut wings off 5m length of 20", prep kit for running casing. Vessel at standby height awaiting the tides
03:30	05:00	01:30	DEME - Vessel Operations	Jack down and begin pulling legs, leg jetting being used
05:00	06:15	01:15	Transit between BH	Transit to BH09
06:15	06:45	00:30	DEME - Vessel Operations	On position at BH09 / Begin pre-loading
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	12:30	05:10	DEME - Vessel Operations	On location at BH09 / Barge pre-loading / CTV pushing on ladder / Carryout crew change 3 off and 5 on / Barge continue to pre-load and jack-up to working height
12:30	13:40	01:10	DEME - Vessel Operations	Neptune Captain confirms LAT water depth is 30.50m, not 34m as reported by the Panther / 4m of conductor casing removed from the string
13:40	17:00	03:20	Standby Current Speed - Casing	Waiting for slack tide water for running in conductor casing / Continuation of preparation work for the casing run-in
17:00	18:10	01:10	Standby Wind Speed - Drilling Operations	Current within limits but wind is above working limits (16.7m/s)
18:10	18:45	00:35	Standby Current Speed - Vessel Move	Wind dropped to 12m/s but current now picking up above safe limit of 0.5m/s
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Day shift sign onto PTW
19:00	19:30	00:30	Fuel up/Wash Down/Break	TBT on daily tasks
19:30	24:00	04:30	Standby Wind Speed - Drilling Operations	Gusts of over 12.5m/s up to 14 m/s. Unable to deploy casing at the high tide slack due to strong winds gusting past the safe limits of the crane.

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.62%
Pre-Move Prep	0:00	0:00	16:40	2.48%
MMO Pre-Start Watch	0:00	0:00	0:50	0.12%
DEME - Vessel Operations	11:20	0:00	31:30	4.69%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Geophys - Additional Casing Pull	0:00	0:00	1:55	0.29%
Geophys - 1st Casing Pull	0:00	0:00	1:55	0.29%
Fuel up/Wash Down/Break	1:20	0:00	26:10	3.90%
Geobor NCD	0:00	0:00	59:47	8.90%
Fugro Downtime	0:00	0:00	3:05	0.46%
Advance/Washbore 7" casing	0:00	0:00	5:05	0.76%
Shift Handover Talk	0:30	0:00	7:10	1.07%
Offshore Resupply	0:00	0:00	0:50	0.12%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.88%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.62%
Mobilisation	0:00	168:00	208:25	31.04%
Drill and Cantilever - Reconstruct	0:00	0:00	18:55	2.82%
Transit between BH	1:15	0:00	11:45	1.75%
Transit from Falmouth to Site	0:00	34:00	44:45	6.66%
Run-in Conductor Casing	0:00	0:00	8:55	1.33%
Vibrohammer Operations	0:00	0:00	7:10	1.07%
Run-in 7" Casing	0:00	0:00	4:20	0.65%
Run-in Geobor Casing	0:00	0:00	3:25	0.51%
Push Sampling	0:00	0:00	53:44	8.00%
Downhole Hammer Sampling	0:00	0:00	9:59	1.49%
Geobor Coring	0:00	0:00	44:30	6.63%
CPT Operations	0:00	0:00	10:40	1.59%
Wireline Geophys	0:00	0:00	20:40	3.08%
Trip-out Geobor Casing	0:00	0:00	3:25	0.51%
Trip-out 7" Casing	0:00	0:00	5:55	0.88%
Trip-out Conductor Casing	0:00	0:00	5:50	0.87%
Offshore Crew Change	0:00	0:00	0:15	0.04%
Standby Wind Speed - Drilling Operations	5:40	0:00	19:55	2.97%
Standby Current Speed - Vessel Move	0:35	0:00	0:35	0.09%
Standby Current Speed - Casing	3:20	0:00	5:45	0.86%
Total	24:00	202:00	671:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	18.2215	Days	40.4922%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	16.0000	N°	35.5556%

Day Shift

Employee Name	Job Title	Hours Worked
Robert Fraser	Project Manager (Days)	1
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Lucas Huysing	Lab Technician (Days)	1
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	5
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1513
Fugro	23	247	/	7058
Total	28	307	/	8571

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Rob Fraser & Lucas Huying leave vessel at morning Crew change 07:20. James Hills, Wayne Evans, Seymour Idrisov and John Davidson join the vessel. John Ritchie from DEME rejoins vessel following hospital visit and returns to light duties. MOC for flange removal will be uploaded to sharepoint in next 24hrs

Fugro Representative



James Hills
Nearshore Project Manager
17/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative
16/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	29	**Date:**	17/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH09				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	5	/	54
Environmental Incident	0	/	0
Shift Handover Talk	2	/	55
Permit to Work	4	/	60
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	43
Vessel Induction	4	/	29
Project Induction	3	/	35
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Activities performed these 24 hours

Completed Run-in of 20", 7" and Geobor to ML / Commenced drilling and CPT operations

Planned Work for Next 24 Hours

Continuation of drilling and CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.2	1.0	0.5	0.8	
Wave height (Hs)	m	0.5	0.5	0.3	1.0	
Wind direction	Degrees	SSW	SSW	WNW	N	
Wind speed (m/s)	m/s	3.0	2.0	2.0	3.0	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
17/0600	SSW	9	11	0.4	SSW	0.5	5	-	0.0	-	0.6	1.1
17/0900	SSW	9	11	0.5	SSW	0.5	5	-	0.0	-	0.7	1.1
17/1200	SSW	8	11	0.4	SSW	0.5	5	-	0.0	-	0.7	1.1
17/1500	SSW	7	9	0.2	SSW	0.6	5	-	0.0	-	0.6	1.1
17/1800	WNW	5	7	0.1	SSW	0.5	5	-	0.0	-	0.5	0.9
17/2100	NW	6	7	0.2	SSW	0.4	5	-	0.0	-	0.4	0.7
18/0000	N	7	9	0.3	SSW	0.4	4	-	0.0	-	0.5	0.9
18/0300	NNW	8	10	0.4	SSW	0.4	4	-	0.0	-	0.6	1.0
18/0600	N	7	9	0.4	SSW	0.4	4	-	0.0	-	0.6	1.0
18/0900	NNE	5	7	0.4	SSW	0.4	4	-	0.0	-	0.5	0.9
18/1200	E	4	5	0.2	SSW	0.4	4	-	0.0	-	0.4	0.7
18/1500	ESE	4	5	0.2	SSW	0.3	4	-	0.0	-	0.4	0.6
18/1800	SSE	5	7	0.1	SSW	0.2	4	-	0.0	-	0.2	0.4
18/2100	NNW	7	9	0.2	SSW	0.1	4	-	0.0	-	0.2	0.4
19/0000	NNW	8	11	0.4	-	0.0	-	-	0.0	-	0.4	0.7
19/0300	NNW	10	13	0.5	-	0.0	-	-	0.0	-	0.6	0.9
19/0600	NNE	11	14	0.7	-	0.0	-	-	0.0	-	0.7	1.2
19/0900	NNE	10	13	0.7	NNE	0.2	5	-	0.0	-	0.7	1.2
19/1200	NNE	9	11	0.6	NNE	0.5	5	-	0.0	-	0.8	1.4
19/1500	NNE	9	12	0.7	NNE	0.6	5	-	0.0	-	0.9	1.5
19/1800	NNE	10	13	0.7	NNE	0.6	5	-	0.0	-	0.9	1.5
19/2100	NNE	10	13	0.7	NNE	0.6	5	-	0.0	-	0.9	1.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	06:45	06:15	Standby Wind Speed - Drilling Operations	Unable to deploy the 20" Conductor casing at the tidal windows due to the wind being over 12m/s, above the safe working limit for crane operations
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift to sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	12:45	05:25	Standby Wind Speed - Drilling Operations	Wind above the safe working limits for crane operations, unable to deploy casing
12:45	12:55	00:10	Fuel up/Wash Down/Break	TBT on deploying conductor casing
12:55	14:10	01:15	Run-in Conductor Casing	Commenced deploying conductor casing, (Lead length already sat in gate)
14:10	14:25	00:15	Run-in Conductor Casing	Conductor casing set in 2.10m (no vibrohammer required) DTM=45.70m . Undo dolly land on tipper
14:25	16:30	02:05	Drill and Cantilever - Reconstruct	Raise the CR2 mast and fix stay wires, raise Comacchio mast and lock off. Lift up and bolt on CPT Rams, lift on CPT stand. Lift on casing pallets of 7" and rod shute up and onto cantilever. Lift deck clamp up and onto cantilever and plumb up
16:30	16:50	00:20	Fuel up/Wash Down/Break	TBT on drilling and sampling operations.
16:50	18:45	01:55	Run-in 7" Casing	Run-in 7" casing to M/L and commence drilling and sampling operations from M/L
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift to sign PTW
19:00	19:25	00:25	Fuel up/Wash Down/Break	TBT on craning drill pipe and drilling ops for the shift, pre-start checks
19:25	20:00	00:35	Push Sampling	Commenced drilling operations at BH09 from 1.0m, DTM=45.70m. Run in NWY rods and push sample with thick walled Shelby with metal catcher, 1.00m to 2.00m
20:00	20:20	00:20	Downhole Hammer Sampling	Hammer sample / 1.00m to 1.45m for 9 blows
20:20	20:35	00:15	Advance/Washbore 7" casing	Drill 7" casing down to 2.00m BML
20:35	21:05	00:30	Run-in Geobor Casing	Crane away rod shute and lift Geobor to the cantilever
21:05	21:35	00:30	Run-in Geobor Casing	Run-in Geobor to 2.00m BML
21:35	22:00	00:25	CPT Operations	Set-up CPT beam, connected up CPT tool
22:00	22:15	00:15	CPT Operations	Run-in CPT tool / latch and push 2.00m to 3.27m / Pull CPT tool
22:15	22:25	00:10	CPT Operations	Disconnect CPT beam and set-up for rotary operations
22:25	22:35	00:10	Geobor NCD	NCD from 2.00m to 2.50m
22:35	22:45	00:10	Push Sampling	Shelby thick walled with metal catcher / 2.50m to 2.80m

DOME

Summary of Events

Begin	End	Duration	Type	Description
22:45	22:55	00:10	Geobor NCD	NCD 2.50m to 3.50m
22:55	23:00	00:05	CPT Operations	Set-up CPT beam
23:00	23:15	00:15	CPT Operations	Run-in CPT tool, latch and push 3.50m to 4.93m / Pull CPT tool
23:15	23:20	00:05	CPT Operations	Disconnect CPT beam and setup for rotary operations
23:20	23:30	00:10	Geobor NCD	NCD 3.50m to 4.00m
23:30	23:40	00:10	Push Sampling	Shelby thick walled with metal catcher / 4.00m to 4.50m
23:40	23:50	00:10	Geobor NCD	NCD 4.00m to 5.00m
23:50	24:00	00:10	Push Sampling	Shelby thick walled with metal catcher / 5.00m to 5.50m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.60%
Pre-Move Prep	0:00	0:00	16:40	2.40%
MMO Pre-Start Watch	0:00	0:00	0:50	0.12%
DEME - Vessel Operations	0:00	0:00	31:30	4.53%
Geophys - Additional Casing Pull	0:00	0:00	1:55	0.28%
Geophys - 1st Casing Pull	0:00	0:00	1:55	0.28%
Fuel up/Wash Down/Break	1:45	0:00	27:55	4.01%
Geobor NCD	0:40	0:00	60:27	8.69%
Fugro Downtime	0:00	0:00	3:05	0.44%
Advance/Washbore 7" casing	0:15	0:00	5:20	0.77%
Shift Handover Talk	0:30	0:00	7:40	1.10%
Offshore Resupply	0:00	0:00	0:50	0.12%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.85%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.53%
Mobilisation	0:00	168:00	208:25	29.97%
Drill and Cantilever - Reconstruct	2:05	0:00	21:00	3.02%
Transit between BH	0:00	0:00	11:45	1.69%
Transit from Falmouth to Site	0:00	34:00	44:45	6.43%
Run-in Conductor Casing	1:30	0:00	10:25	1.50%
Vibrohammer Operations	0:00	0:00	7:10	1.03%
Run-in 7" Casing	1:55	0:00	6:15	0.90%
Run-in Geobor Casing	1:00	0:00	4:25	0.64%
Push Sampling	1:05	0:00	54:49	7.88%
Downhole Hammer Sampling	0:20	0:00	10:19	1.48%
Geobor Coring	0:00	0:00	44:30	6.40%
CPT Operations	1:15	0:00	11:55	1.71%
Wireline Geophys	0:00	0:00	20:40	2.97%
Trip-out Geobor Casing	0:00	0:00	3:25	0.49%
Trip-out 7" Casing	0:00	0:00	5:55	0.85%
Trip-out Conductor Casing	0:00	0:00	5:50	0.84%
Offshore Crew Change	0:00	0:00	0:15	0.04%
Standby Wind Speed - Drilling Operations	11:40	0:00	32:10	4.62%
Standby Current Speed - Casing	0:00	0:00	5:45	0.83%
Total	24:00	202:00	695:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	19.2215	Days	42.7144%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	18.0000	N°	40.0000%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1573
Fugro	21	252	/	7310
Total	26	312	/	8883

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Rep and Fugro OPM meet before casing deployment window (tide) to make full assessment of wind speed across all monitoring devices on Neptune

Client Representative Comments

Fugro Representative



James Hills Nearshore Project Manager	18/06/2022

Client Representative



Wouter Zuijderduijn Client Representative	18/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	30	**Date:**	18/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH09				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	56
Environmental Incident	0	/	0
Shift Handover Talk	2	/	57
Permit to Work	4	/	64
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	1	/	44
Vessel Induction	0	/	29
Project Induction	0	/	35
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Activities performed these 24 hours

Continuation of drilling and CPT operations / CTV alongside to collect lifting bags in preparation for offshore resupply

Planned Work for Next 24 Hours

Continuation of drilling and CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.7	1.1	0.8	1.2	
Wave height (Hs)	m	0.4	0.5	0.3	0.4	
Wind direction	Degrees	NNW	ESE	S	NNW	
Wind speed (m/s)	m/s	8.0	5.0	1.0	6.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
18/0600	NNW	7	9	0.4	S	0.3	4	SSW	0.1	12	0.5	0.9
18/0900	NNE	5	7	0.4	S	0.3	4	SSW	0.1	12	0.5	0.8
18/1200	ESE	4	5	0.2	S	0.4	4	SSW	0.1	12	0.4	0.7
18/1500	SSE	3	4	0.1	S	0.3	4	NNE	0.1	5	0.3	0.5
18/1800	S	4	5	0.1	S	0.2	4	NNE	0.1	5	0.2	0.4
18/2100	NW	5	7	0.1	NNE	0.1	5	S	0.1	4	0.2	0.3
19/0000	NNW	7	9	0.3	NNE	0.2	5	-	0.0	-	0.4	0.7
19/0300	NW	8	10	0.4	NNE	0.2	5	-	0.0	-	0.4	0.7
19/0600	NNW	8	11	0.5	NNE	0.2	5	-	0.0	-	0.6	0.9
19/0900	N	9	11	0.6	NNE	0.2	5	-	0.0	-	0.7	1.1
19/1200	NNE	9	11	0.6	NNE	0.3	5	-	0.0	-	0.7	1.2
19/1500	NNE	9	12	0.7	NNE	0.5	5	-	0.0	-	0.8	1.4
19/1800	NNE	9	12	0.7	NNE	0.6	5	-	0.0	-	0.9	1.5
19/2100	N	9	12	0.7	NNE	0.7	5	SSW	0.1	17	1.0	1.6
20/0000	N	9	12	0.5	NNE	0.8	5	SSW	0.2	17	1.0	1.6
20/0300	N	9	11	0.5	NNE	0.8	5	SSW	0.2	17	1.0	1.6
20/0600	N	8	10	0.4	NNE	0.7	5	SSW	0.2	17	0.8	1.4
20/0900	NNE	6	8	0.2	NNE	0.6	5	SSW	0.2	17	0.7	1.1
20/1200	ENE	5	6	0.1	NNE	0.5	5	SSW	0.1	17	0.5	0.9
20/1500	SE	4	5	0.1	NNE	0.4	5	-	0.0	-	0.4	0.7
20/1800	SSW	4	5	0.1	NNE	0.3	5	-	0.0	-	0.3	0.5
20/2100	SSW	4	5	0.1	NNE	0.2	5	-	0.0	-	0.2	0.4

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Geobor NCD	Shelby thick walled with metal catcher / 5.00m to 5.50m / 0.40m recovery
00:15	00:45	00:30	Fuel up/Wash Down/Break	Lunch
00:45	00:55	00:10	Geobor NCD	NCD 5.00m to 5.50m
00:55	01:05	00:10	Push Sampling	Shelby thick walled / 5.50m to 6.00m / 0.40m recovery
01:05	01:15	00:10	Geobor NCD	NCD 5.50m to 6.00m
01:15	01:20	00:05	CPT Operations	Set-up CPT beam
01:20	01:35	00:15	CPT Operations	CPT test / Run in tool, latch and pull / 6.00m to 7.50m / Pull CPT tool
01:20	01:35	00:15	CPT Operations	CPT test / Run in tool, latch and push / 6.00m to 7.50m / Pull CPT tool
01:35	01:40	00:05	CPT Operations	Disconnect CPT beam and set-up for rotary operations
01:40	01:55	00:15	Geobor NCD	NCD 6.00m to 6.50m
01:55	02:10	00:15	Push Sampling	Shelby thick walled / 6.00m to 6.50m / 0.40m recovery
02:10	02:20	00:10	Geobor NCD	NCD 6.50m to 7.50m
02:20	02:25	00:05	CPT Operations	Set-up CPT beam
02:25	02:40	00:15	CPT Operations	CPT / Run-in tool, latch and push 7.50m to 9.00m / Pull CPT tool
02:40	02:45	00:05	CPT Operations	Disconnect CPT beam and set-up for rotary operations
02:45	02:55	00:10	Geobor NCD	NCD 7.50m to 8.00m
02:55	03:10	00:15	Push Sampling	Shelby thick walled / 8.00m to 8.50m / 0.35m recovery
03:10	03:20	00:10	Geobor NCD	NCD 8.00m to 9.00m
03:20	03:30	00:10	Push Sampling	Shelby thick walled / 9.00m to 9.40m / 0.30m recovery
03:30	03:55	00:25	Push Sampling	Shelby thick walled / 9.50m to 9.90m / 0.0m recovery
03:55	04:05	00:10	Geobor NCD	NCD 9.50m to 10.00m
04:05	04:10	00:05	CPT Operations	Set-up CPT beam
04:10	04:30	00:20	CPT Operations	CPT test / Run-in tool , latch and push 10.00m to 11.50m / Pull CPT tool
04:30	04:35	00:05	CPT Operations	Disconnect CPT beam and set-up for rotary operations
04:35	04:45	00:10	Geobor NCD	NCD 10.00m to 10.00m to 10.50m
04:45	04:55	00:10	Push Sampling	Shelby thick walled / 10.50m to 11.00m / 0.45m recovery
04:55	05:05	00:10	Geobor NCD	NCD 10.50m to 11.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
05:05	05:10	00:05	CPT Operations	Set-up CPT beam
05:10	05:30	00:20	CPT Operations	CPT test / Run-in tool, latch and push 11.50m to 13.00m / Pull CPT tool
05:30	05:35	00:05	CPT Operations	Disconnect CPT beam and set-up for rotary operations
05:35	05:45	00:10	Geobor NCD	NCD 11.50m to 12.00m
05:45	06:00	00:15	Push Sampling	Shelby thick walled / 12.00m to 13.00m / 0.90m recovery
06:00	06:15	00:15	Geobor NCD	NCD 12.00m to 13.00m
06:15	06:35	00:20	Push Sampling	Shelby thin walled / 13.00m to 14.00m / 0.30m recovery
06:35	06:45	00:10	Push Sampling	Shelby thin walled / 13.00m to 14.00m / 0.30m recovery
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:25	00:25	Fuel up/Wash Down/Break	TBT and daily checks
07:25	08:00	00:35	Geobor NCD	Continuation of drilling and sampling operations from 13.00m to 14.00m / String torquing up, lost flush returns / ream hole, torque coming down
08:00	08:10	00:10	Push Sampling	Shelby thin walled / 14.00m to 14.50m
08:10	08:30	00:20	Push Sampling	Shelby thin walled / 14.50m to 15.00m
08:30	08:45	00:15	Geobor NCD	NCD 14.00m to 15.00m
08:45	09:15	00:30	CPT Operations	CPT operations push15.00m to 16.50m
09:15	09:45	00:30	Geobor NCD	NCD no over sample (Client reps instructions)
09:45	10:00	00:15	Push Sampling	Shelby thin walled / 16.50m to 17.00m
10:00	10:10	00:10	Push Sampling	Shelby thin walled / 17.00m to 17.50m
10:10	10:35	00:25	Geobor NCD	NCD 16.50m to 17.50m
10:35	10:45	00:10	Push Sampling	Shelby thin walled / 17.50m to 18.00m
10:45	11:00	00:15	Geobor NCD	NCD 17.50m to 18.00m
11:00	11:15	00:15	CPT Operations	CPT operations push 18.00m to 19.50m
11:15	12:00	00:45	Advance/Washbore 7" casing	7" casing followed on, Geobor on the bottom, 7" added on to catch up
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	13:00	00:30	Geobor NCD	NCD 18.00m to 18.50m
13:00	13:15	00:15	Push Sampling	Shelby thin walled / Over sample CPT / 18.50m to 19.50m
13:15	13:30	00:15	Geobor NCD	NCD 18.50m to 19.50m
13:30	13:45	00:15	Push Sampling	Shelby thin walled / 19.50m to 20.50m
13:45	14:00	00:15	Geobor NCD	NCD 19.50m to 20.50m
14:00	14:15	00:15	Push Sampling	Shelby thin walled / 20.50m to 21.50m / 0.35m recovery
14:15	14:30	00:15	Push Sampling	Shelby thick walled with catcher / 20.50m to 21.50m
14:30	14:40	00:10	Geobor NCD	NCD 20.50m to 21.50m
14:40	15:00	00:20	CPT Operations	CPT operations push 21.50m to 23.00m
15:00	15:20	00:20	Geobor NCD	NCD 21.50m to 22.50m
15:20	15:30	00:10	Push Sampling	Shelby thin walled / 22.50m to 23.00m
15:30	15:40	00:10	Geobor NCD	NCD 22.50m to 23.00m
15:40	16:05	00:25	Push Sampling	Shelby thin walled / 23.00m to 24.00m / 0.30m recovery
16:05	16:30	00:25	Push Sampling	Shelby thick wall with catcher / 23.00m to 24.00m
16:30	16:45	00:15	Geobor NCD	NCD 23.00m to 24.00m
16:45	16:55	00:10	Push Sampling	Shelby thin walled / 24.00m to 25.00m
16:55	17:05	00:10	Push Sampling	Shelby thick wall with catcher / 24.00m to 25.00m
17:05	17:20	00:15	Geobor NCD	NCD 24.00m to 25.00m
17:20	17:40	00:20	CPT Operations	CPT operations / 25.00m to 26.50m
17:40	17:55	00:15	Geobor NCD	NCD 25.00m to 25.50m
17:55	18:15	00:20	Push Sampling	Shelby thick wall with catcher / 25.50m to 26.50m
18:15	18:35	00:20	Geobor NCD	NCD 25.50m to 26.50m
18:35	18:45	00:10	Fuel up/Wash Down/Break	Fuel up plant
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW

DOME

Summary of Events

Begin	End	Duration	Type	Description
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations for the shift, pre-start checks
19:15	19:30	00:15	Push Sampling	Shelby thin walled / 26.50m to 26.80m / 0.30m recovery / tube damaged
19:30	19:45	00:15	Geobor NCD	NCD 26.50m to 27.00m / pushing cobble ahead / unable to clear at this point
19:45	20:15	00:30	Geobor Coring	Core run in an attempt to clear cobble / 27.00m to 27.50m / 0.50m recovery
20:15	20:45	00:30	Geobor Coring	Core run 27.50m to 28.50m
20:45	21:30	00:45	Geobor Coring	Core run 28.50m to 29.00m
21:30	22:10	00:40	CPT Operations	CPT push 29.00m to 30.01m
22:10	22:30	00:20	Downhole Hammer Sampling	Hammer sample / 29.00m to 29.45m
22:30	22:45	00:15	Geobor NCD	NCD 29.00m to 30.00m
22:45	23:15	00:30	CPT Operations	CPT / push 30.00m to 30.45m
23:15	23:55	00:40	Geobor Coring	Core run 30.00m to 31.00m
23:55	24:00	00:05	Geobor NCD	NCD 30.00m to 31.00m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.58%
Pre-Move Prep	0:00	0:00	16:40	2.32%
MMO Pre-Start Watch	0:00	0:00	0:50	0.12%
DEME - Vessel Operations	0:00	0:00	31:30	4.38%
Geophys - Additional Casing Pull	0:00	0:00	1:55	0.27%
Geophys - 1st Casing Pull	0:00	0:00	1:55	0.27%
Fuel up/Wash Down/Break	1:50	0:00	29:45	4.13%
Geobor NCD	7:35	0:00	68:02	9.45%
Fugro Downtime	0:00	0:00	3:05	0.43%
Advance/Washbore 7" casing	0:45	0:00	6:05	0.85%
Shift Handover Talk	0:30	0:00	8:10	1.13%
Offshore Resupply	0:00	0:00	0:50	0.12%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.82%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.44%
Mobilisation	0:00	168:00	208:25	28.96%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.92%
Transit between BH	0:00	0:00	11:45	1.63%
Transit from Falmouth to Site	0:00	34:00	44:45	6.22%
Run-in Conductor Casing	0:00	0:00	10:25	1.45%
Vibrohammer Operations	0:00	0:00	7:10	1.00%
Run-in 7" Casing	0:00	0:00	6:15	0.87%
Run-in Geobor Casing	0:00	0:00	4:25	0.61%
Push Sampling	6:10	0:00	60:59	8.47%
Downhole Hammer Sampling	0:20	0:00	10:39	1.48%
Geobor Coring	2:25	0:00	46:55	6.52%
CPT Operations	4:40	0:00	16:35	2.30%
Wireline Geophys	0:00	0:00	20:40	2.87%
Trip-out Geobor Casing	0:00	0:00	3:25	0.47%
Trip-out 7" Casing	0:00	0:00	5:55	0.82%
Trip-out Conductor Casing	0:00	0:00	5:50	0.81%
Offshore Crew Change	0:00	0:00	0:15	0.03%
Standby Wind Speed - Drilling Operations	0:00	0:00	32:10	4.47%
Standby Current Speed - Casing	0:00	0:00	5:45	0.80%

Activity Summary

Activity	Today	Planned	To Date	Progress
Total	24:15	202:00	719:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	20.2215	Days	44.9367%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	19.0000	N°	42.2222%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Wayne Evans	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1633
Fugro	21	252	/	7562
Total	26	312	/	9195

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

19/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative

19/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	31	**Date:**	19/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH09				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	58
Environmental Incident	0	/	0
Shift Handover Talk	2	/	59
Permit to Work	4	/	68
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	46
Vessel Induction	0	/	29
Project Induction	0	/	35
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Activities performed these 24 hours

Continuation of Drilling and CPT operations at BH09 / EOH commenced wireline operations

Planned Work for Next 24 Hours

Continuation of wireline operations / Trip-out the Conductor casing / Transit to BH12 / Commence jacking operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.9	1.2	0.9	1.1	
Wave height (Hs)	m	0.4	0.6	0.5	1.0	
Wind direction	Degrees	NNW	N	NE	NNE	
Wind speed (m/s)	m/s	5.0	4.0	8.0	6.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
19/0600	NNW	8	10	0.5	NNE	0.2	5	-	0.0	-	0.5	0.9
19/0900	N	9	11	0.6	NNE	0.2	5	-	0.0	-	0.7	1.1
19/1200	N	9	11	0.6	NNE	0.3	5	-	0.0	-	0.7	1.2
19/1500	NNE	10	13	0.7	NNE	0.5	5	-	0.0	-	0.9	1.4
19/1800	NE	8	10	0.6	NNE	0.7	5	-	0.0	-	0.9	1.5
19/2100	NNE	8	11	0.6	NNE	0.9	5	SSW	0.1	17	1.1	1.8
20/0000	N	9	11	0.5	NNE	1.0	5	SSW	0.2	17	1.1	1.9
20/0300	N	8	10	0.4	NNE	1.0	5	SSW	0.2	17	1.1	1.8
20/0600	N	7	9	0.3	NNE	0.8	5	SSW	0.2	17	0.9	1.5
20/0900	NNE	5	7	0.1	NNE	0.6	5	SSW	0.2	17	0.7	1.1
20/1200	NE	3	4	0.1	NNE	0.5	5	SSW	0.1	17	0.5	0.9
20/1500	ESE	2	3	0.0	NNE	0.4	5	-	0.0	-	0.4	0.7
20/1800	SSW	3	4	0.1	NNE	0.3	5	-	0.0	-	0.3	0.5
20/2100	SSW	5	6	0.1	NNE	0.2	5	-	0.0	-	0.2	0.4
21/0000	WSW	4	5	0.1	NNE	0.1	5	-	0.0	-	0.1	0.2
21/0300	WNW	3	4	0.1	NNE	0.1	5	-	0.0	-	0.1	0.2
21/0600	WSW	2	3	0.0	NNE	0.1	5	NE	0.1	5	0.1	0.2
21/0900	SSW	2	3	0.0	NNE	0.1	5	NE	0.1	5	0.1	0.2
21/1200	SSE	3	4	0.1	NNE	0.1	6	NE	0.1	4	0.2	0.3
21/1500	SE	3	4	0.1	NNE	0.1	6	NE	0.1	4	0.2	0.3
21/1800	SE	4	5	0.1	NNE	0.1	6	NE	0.1	4	0.2	0.3
21/2100	NNW	4	5	0.1	NNE	0.1	6	NE	0.1	4	0.2	0.3

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Geobor NCD	NCD 30.00m to 31.00m
00:15	00:45	00:30	Fuel up/Wash Down/Break	Lunch
00:45	01:20	00:35	CPT Operations	CPT 14 / Push 31.00m to 31.60m
01:20	01:40	00:20	Geobor Coring	Core run 31.00m to 31.50m
01:40	02:00	00:20	Geobor NCD	NCD 31.00m to 31.50m
02:00	02:25	00:25	Downhole Hammer Sampling	Hammer Sample 31.50m to 32.00m
02:25	02:40	00:15	Geobor NCD	NCD 31.50m to 32.00m
02:40	03:00	00:20	Downhole Hammer Sampling	Hammer sample 32.00m to 32.30m
03:00	03:30	00:30	Geobor NCD	NCD 32.00m to 32.50m
03:30	04:00	00:30	Downhole Hammer Sampling	Hammer sample 32.50m to 32.80m
04:00	04:20	00:20	Geobor NCD	NCD 32.50m to 33.00m
04:20	04:55	00:35	Downhole Hammer Sampling	Hammer sample 33.00m to 33.30m
04:55	05:15	00:20	Geobor NCD	NCD 33.00m to 33.50m
05:15	05:50	00:35	CPT Operations	CPT 15 / Push 33.50m to 33.70m
05:50	06:30	00:40	Geobor Coring	Core run 33.50m to 34.50m / No recovery / Go back in with fingers and attempt to retrieve / no recovery
06:30	06:45	00:15	Geobor NCD	NCD 33.50m to 34.50m / Fuel up
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:25	00:25	Fuel up/Wash Down/Break	TBT and daily inspections
07:25	08:25	01:00	Downhole Hammer Sampling	Hammer sample / 34.50m to 34.80m
08:25	08:40	00:15	Trip-out Geobor Casing	Remove and add Geobor to suit depth / stick up
08:40	08:55	00:15	Geobor NCD	NCD 34.50m to 35.00m
08:55	09:20	00:25	Downhole Hammer Sampling	Hammers sample 35.00m 35.20m
09:20	09:45	00:25	Geobor Coring	Core run 35.00m 36.00m
09:45	10:45	01:00	Geobor Coring	Core run 36.00m 37.50m / 0.40m recovery
10:45	11:05	00:20	Geobor Coring	Core run 37.50m to 38.50m
11:05	12:20	01:15	Geobor Coring	Core run 39.50m to 40.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
12:20	12:50	00:30	Fuel up/Wash Down/Break	Lunch
12:50	13:20	00:30	Geobor Coring	Core run 40.50m 41.50m
13:20	13:35	00:15	Geobor Coring	Core run 41.50m to 42.50m
13:35	14:00	00:25	Geobor Coring	Core run 42.50m 43.50m
14:00	14:20	00:20	Geobor Coring	Core run 43.50m to 44.50m
14:20	14:40	00:20	Geobor Coring	Core run 44.50m to 45.50m
14:40	15:00	00:20	Geobor Coring	Core run 45.50m to 46.50m
15:00	15:20	00:20	Geobor Coring	Core run 46.50m to 47.50m
15:20	15:40	00:20	Geobor Coring	Core run 47.50m to 48.50m
15:40	16:00	00:20	Geobor Coring	Core run 48.50m to 49.50m
16:00	16:25	00:25	Geobor Coring	Core run 49.50m to 50.50m
16:25	16:45	00:20	Geobor Coring	Core run 50.50m to 51.50m
16:45	17:05	00:20	Geobor Coring	Core run 51.50m to 52.50m
17:05	17:20	00:15	Geobor Coring	Core run 52.50m to 53.50m
17:20	17:45	00:25	Geobor Coring	Core run 53.50m to 54.50m
17:45	18:00	00:15	Geobor Coring	Core run 54.50m 55.50m
18:00	18:45	00:45	Wireline Geophys	Geobor pulled back to 35.50m / Set-up for Geophys logging / Run-in Caliper
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on the shifts operations
19:15	19:30	00:15	Wireline Geophys	Continuation of wireline Geophys
19:30	20:45	01:15	Wireline Geophys	Caliper out / ABI in / continuation of wireline operations
20:45	21:40	00:55	Wireline Geophys	ABI out / P&S in / continuation of wireline operations
21:40	22:00	00:20	Geophys - 1st Casing Pull	P&S out / pull Geobor back to 13.00m BML / continuation of wireline operations
22:00	24:00	02:00	Wireline Geophys	Caliper in / continuation of wireline operations

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	4:10	0.56%
Pre-Move Prep	0:00	0:00	16:40	2.24%
MMO Pre-Start Watch	0:00	0:00	0:50	0.11%
DEME - Vessel Operations	0:00	0:00	31:30	4.24%
Geophys - Additional Casing Pull	0:00	0:00	1:55	0.26%
Geophys - 1st Casing Pull	0:20	0:00	2:15	0.30%
Fuel up/Wash Down/Break	1:40	0:00	31:25	4.22%
Geobor NCD	2:30	0:00	70:32	9.48%
Fugro Downtime	0:00	0:00	3:05	0.41%
Advance/Washbore 7" casing	0:00	0:00	6:05	0.82%
Shift Handover Talk	0:30	0:00	8:40	1.17%
Offshore Resupply	0:00	0:00	0:50	0.11%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.80%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.36%
Mobilisation	0:00	168:00	208:25	28.02%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.82%
Transit between BH	0:00	0:00	11:45	1.58%
Transit from Falmouth to Site	0:00	34:00	44:45	6.02%
Run-in Conductor Casing	0:00	0:00	10:25	1.40%
Vibrohammer Operations	0:00	0:00	7:10	0.96%
Run-in 7" Casing	0:00	0:00	6:15	0.84%

Activity Summary

Activity	Today	Planned	To Date	Progress
Run-in Geobor Casing	0:00	0:00	4:25	0.59%
Push Sampling	0:00	0:00	60:59	8.20%
Downhole Hammer Sampling	3:15	0:00	13:54	1.87%
Geobor Coring	9:10	0:00	56:05	7.54%
CPT Operations	1:10	0:00	17:45	2.39%
Wireline Geophys	5:10	0:00	25:50	3.47%
Trip-out Geobor Casing	0:15	0:00	3:40	0.49%
Trip-out 7" Casing	0:00	0:00	5:55	0.80%
Trip-out Conductor Casing	0:00	0:00	5:50	0.78%
Offshore Crew Change	0:00	0:00	0:15	0.03%
Standby Wind Speed - Drilling Operations	0:00	0:00	32:10	4.32%
Standby Current Speed - Casing	0:00	0:00	5:45	0.77%
Total	24:00	202:00	743:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	21.2215	Days	47.1589%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	20.0000	N°	44.4444%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12
Richard Knight	Assistant Driller (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12
Ryan Reeve	Assistant Driller (Nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1693
Fugro	21	252	/	7814
Total	26	312	/	9507

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

DEME plan to use FROG basket for a crew transfer on 21/06/22, this should not take place from AMS Panther or Husky vessel. DEME / SSE to discuss charter of additional vessel for this operation. FUGRO OPM to prepare RAMS and update existing documents for discussion Monday. on use of a third part vessel - Ondine JULE

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
20/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative
19/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	32	**Date:**	20/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH09 transit to BH12				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	60
Environmental Incident	0	/	0
Shift Handover Talk	2	/	61
Permit to Work	4	/	72
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	55
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	48
Vessel Induction	0	/	29
Project Induction	0	/	35
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Activities performed these 24 hours

Completed Geophys, / Trip-out 20", 7" and Geobor casing / Completed transit to BH12.

Planned Work for Next 24 Hours

Complete run-in of 20", 7" and conductor casing and commence drilling operations / Crew change / Offshore resupply

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.4	0.5	N/A	0.8	1800: Current meter not deployed due to Jacking operations
Wave height (Hs)	m	0.7	0.5	0.2	0.2	
Wind direction	Degrees	N	NNE	SSW	WSW	
Wind speed (m/s)	m/s	5.0	7.0	1.0	5.0	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
20/0600	N	7	9	0.3	NNE	0.6	5	SSW	0.2	15	0.7	1.2
20/0900	NNE	6	7	0.2	NNE	0.6	5	SSW	0.2	14	0.7	1.1
20/1200	NE	4	5	0.1	NNE	0.5	5	SSW	0.1	16	0.5	0.9
20/1500	ESE	3	3	0.0	NNE	0.4	5	-	0.0	-	0.4	0.7
20/1800	SSW	4	5	0.1	NNE	0.3	5	-	0.0	-	0.3	0.5
20/2100	SW	5	7	0.1	NNE	0.2	5	-	0.0	-	0.2	0.4
21/0000	WSW	5	6	0.1	NNE	0.1	5	-	0.0	-	0.2	0.3
21/0300	NW	3	4	0.1	NNE	0.1	5	-	0.0	-	0.1	0.2
21/0600	WNW	2	2	0.0	NNE	0.1	5	NE	0.1	5	0.1	0.2
21/0900	S	3	3	0.0	NNE	0.1	5	NE	0.1	5	0.1	0.2
21/1200	ESE	3	4	0.1	NNE	0.1	5	NE	0.1	4	0.2	0.3
21/1500	S	3	3	0.0	NNE	0.1	5	S	0.1	7	0.1	0.2
21/1800	NNE	2	2	0.0	NNE	0.1	5	S	0.1	7	0.1	0.2
21/2100	NE	2	2	0.0	NNE	0.1	5	-	0.0	-	0.1	0.2
22/0000	N	3	4	0.1	NNE	0.1	5	-	0.0	-	0.2	0.3
22/0300	N	4	5	0.2	NNE	0.1	5	-	0.0	-	0.2	0.3
22/0600	NNE	4	5	0.1	NE	0.1	4	-	0.0	-	0.1	0.2
22/0900	NNE	6	7	0.2	S	0.1	6	-	0.0	-	0.2	0.3
22/1200	NE	5	6	0.1	S	0.1	6	-	0.0	-	0.2	0.3
22/1500	ENE	2	2	0.1	NE	0.1	2	S	0.1	5	0.2	0.3
22/1800	S	3	3	0.1	NE	0.1	2	S	0.1	5	0.1	0.2
22/2100	SW	2	2	0.0	ENE	0.1	3	SSE	0.1	4	0.1	0.1

Summary of Events

Begin	End	Duration	Type	Description
00:00	01:35	01:35	Wireline Geophys	BDI out / P&S in
01:35	02:15	00:40	Geophys - Additional Casing Pull	P&S out / Pull back Geobor
02:15	03:00	00:45	Geophys - Additional Casing Pull	Pull 7" casing to 3.1m BML
03:00	03:40	00:40	Wireline Geophys	Caliper in
03:40	04:10	00:30	Wireline Geophys	P&S in / BH collapsed
04:10	05:00	00:50	Geophys - Additional Casing Pull	Pull 7" casing
05:00	06:45	01:45	Drill and Cantilever - Deconstruct	Disconnect CPT rams and deck clamp / plumb up casing gates / crane down casing pallets and drill kit from the cantilever / lay down CPT tool / cable tie Comacchio hose carriage / Sea fasten
06:45	07:00	00:15	Shift Handover Talk	Shift handover / Day shift sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily inspections
07:20	08:30	01:10	CPT Operations	Lift off CPT RAMS, stand etc.
08:30	08:35	00:05	Trip-out Conductor Casing	Start pulling out conductor casing
08:35	08:55	00:20	Standby Current Speed - Casing	DEME vessel Captain stops lifting operations/ due to his current readings are higher than Northstar / Northstar was displaying 0.5m/s at the start of the lift
08:55	09:50	00:55	Trip-out Conductor Casing	Continue pulling conductor casing
09:50	12:00	02:10	Pre-Move Prep	Conductor casing on deck / add remove lengths to suit next location / Re-connect dolly to top 5m length / sea fasten conductor casing
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	15:00	02:30	DEME - Vessel Operations	Barge commenced jacking down to commence transit to BH12
15:00	16:00	01:00	DEME - Vessel Operations	On location at BH12 / Commenced lowering legs / Pre-load operations and jacking / DEME crew change / 2 x PAX ON-signers
16:00	18:45	02:45	DEME - Vessel Operations	Continuation of pre-load and jacking operations
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	19:20	00:20	Fuel up/Wash Down/Break	TBT on deploying the 20" casing
19:20	20:35	01:15	DEME - Vessel Operations	Continuation of the pre-loading carried out by the vessel / Preparation of the equipment for the casing deployment / Un-fasten , check, tighten offshore hammer

Summary of Events

Begin	End	Duration	Type	Description
20:35	20:50	00:15	Post-Move Prep	Vessel now at working height / un-fasten crane / barrier off working area
20:50	23:15	02:25	Run-in Conductor Casing	Crane in 20" casing / DTM = 35.70m / 1m deeper than planned, add an extra metre, surge to 1m
23:15	24:00	00:45	Vibrohammer Operations	Connected up vibrohammer and vibe to 2.00m BML. Returned Vibrohammer to deck and secured

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:15	0:00	4:25	0.58%
Pre-Move Prep	2:10	0:00	18:50	2.45%
MMO Pre-Start Watch	0:00	0:00	0:50	0.11%
DEME - Vessel Operations	7:30	0:00	39:00	5.08%
Geophys - Additional Casing Pull	2:15	0:00	4:10	0.54%
Geophys - 1st Casing Pull	0:00	0:00	2:15	0.29%
Fuel up/Wash Down/Break	1:10	0:00	32:35	4.24%
Geobor NCD	0:00	0:00	70:32	9.19%
Fugro Downtime	0:00	0:00	3:05	0.40%
Advance/Washbore 7" casing	0:00	0:00	6:05	0.79%
Shift Handover Talk	0:30	0:00	9:10	1.19%
Offshore Resupply	0:00	0:00	0:50	0.11%
Fugro Downtime - Breakdown	0:00	0:00	5:55	0.77%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.29%
Mobilisation	0:00	168:00	208:25	27.15%
Drill and Cantilever - Deconstruct	1:45	0:00	1:45	0.23%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.74%
Transit between BH	0:00	0:00	11:45	1.53%
Transit from Falmouth to Site	0:00	34:00	44:45	5.83%
Run-in Conductor Casing	2:25	0:00	12:50	1.67%
Vibrohammer Operations	0:45	0:00	7:55	1.03%
Run-in 7" Casing	0:00	0:00	6:15	0.81%
Run-in Geobor Casing	0:00	0:00	4:25	0.58%
Push Sampling	0:00	0:00	60:59	7.94%
Downhole Hammer Sampling	0:00	0:00	13:54	1.81%
Geobor Coring	0:00	0:00	56:05	7.30%
CPT Operations	1:10	0:00	18:55	2.46%
Wireline Geophys	2:45	0:00	28:35	3.72%
Trip-out Geobor Casing	0:00	0:00	3:40	0.48%
Trip-out 7" Casing	0:00	0:00	5:55	0.77%
Trip-out Conductor Casing	1:00	0:00	6:50	0.89%
Offshore Crew Change	0:00	0:00	0:15	0.03%
Standby Wind Speed - Drilling Operations	0:00	0:00	32:10	4.19%
Standby Current Speed - Casing	0:20	0:00	6:05	0.79%
Total	24:00	202:00	767:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	22.2215	Days	49.3811%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	21.0000	N°	46.6667%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	12
Tom Cookson	Geotechnical Engineer (Nights)	12
Aaron Brown	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1753
Fugro	21	252	/	8066
Total	26	312	/	9819

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

At 08:35 Vessel current meter reads 0.5Kts against Fugro systems 0.3Kts. No movement of casing by current is observed, assessed as safe to continue - all casing operations to date have been carried out safely using current speed measurements from Fugro System only.

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

21/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative

21/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	33	**Date:**	21/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH12 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	62
Environmental Incident	0	/	0
Shift Handover Talk	2	/	63
Permit to Work	4	/	76
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	2	/	57
Safety Drills	0	/	2
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	1	/	49
Vessel Induction	4	/	33
Project Induction	4	/	39
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

HOC's : Eye protection on deck, project crew reminded that eye protection must be worn / Personal hygiene, toilets' in the changing rooms being left in a poor state.

Activities performed these 24 hours

Completed run-in of all casings / Commenced drilling and CPT operations at BH12 / Crew change / Offshore resupply

Planned Work for Next 24 Hours

Continuation of drilling and CPT operations at BH12

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.6	0.1	0.4	
Wave height (Hs)	m	0.4	0.2	0.3	0.3	
Wind direction	Degrees	SE	ENE	NE	SW	
Wind speed (m/s)	m/s	7.0	3.0	2.0	4.7	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
21/0600	SE	3	3	0.1	NNE	0.1	5	NE	0.1	5	0.2	0.3
21/0900	NNE	2	3	0.0	NNE	0.1	5	NE	0.1	5	0.1	0.2
21/1200	ENE	4	5	0.1	NNE	0.1	5	NE	0.1	4	0.2	0.3
21/1500	ENE	4	5	0.1	NNE	0.1	5	S	0.1	7	0.2	0.3
21/1800	NE	3	3	0.0	NNE	0.1	5	S	0.1	7	0.1	0.2
21/2100	NNE	3	3	0.1	NNE	0.1	5	-	0.0	-	0.1	0.2
22/0000	NNE	4	5	0.2	NNE	0.1	5	-	0.0	-	0.2	0.4
22/0300	NNE	4	5	0.2	NNE	0.1	5	-	0.0	-	0.2	0.4
22/0600	N	5	6	0.1	NE	0.1	4	-	0.0	-	0.2	0.3
22/0900	NE	4	5	0.1	NE	0.1	4	-	0.0	-	0.1	0.2
22/1200	ENE	4	5	0.1	NE	0.2	4	-	0.0	-	0.2	0.4
22/1500	NE	3	3	0.1	NE	0.1	4	-	0.0	-	0.2	0.3
22/1800	ENE	2	2	0.0	NE	0.1	4	S	0.1	6	0.1	0.2
22/2100	SW	2	3	0.0	NE	0.1	3	S	0.1	6	0.1	0.1
23/0000	SW	2	3	0.0	S	0.1	6	NE	0.1	3	0.1	0.2
23/0300	SSW	3	3	0.1	S	0.1	6	-	0.0	-	0.1	0.2
23/0600	SSW	3	3	0.1	S	0.1	6	-	0.0	-	0.1	0.2
23/0900	S	2	2	0.1	S	0.1	6	-	0.0	-	0.1	0.2
23/1200	S	4	5	0.1	S	0.1	6	-	0.0	-	0.1	0.2
23/1500	S	6	7	0.2	-	0.0	-	-	0.0	-	0.2	0.3
23/1800	SW	6	7	0.3	-	0.0	-	-	0.0	-	0.4	0.6
23/2100	SSW	5	7	0.4	-	0.0	-	-	0.0	-	0.4	0.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:15	00:15	Vibrohammer Operations	Continuation of vibrohammer operations. Returned Vibrohammer to deck and secured
00:15	00:45	00:30	Fuel up/Wash Down/Break	Lunch
00:45	03:15	02:30	Post-Move Prep	TBT on lifting CPT beam and casing pallets, un-bolt vibro dolly and return to deck, crane up CPT beam and bolt on, lift up casing gates connect up deck clamp and CPT Rams
03:15	04:15	01:00	Run-in 7" Casing	TBT on drilling operations / run in 7" casing to ML
04:15	04:50	00:35	Push Sampling	Push sample 0.00m to 0.50m / no recovery / tube damaged
04:50	05:05	00:15	Advance/Washbore 7" casing	Drill 7" 0.00m to 0.50m
05:05	05:20	00:15	Push Sampling	Push sample 0.50m to 1.00m / no recovery
05:20	06:05	00:45	Fugro Downtime - Breakdown	Hammer sample from 0.50m / Dando requires adjustment / Adjust throw bolts and brake / hammer 0.50m to 1.00m
06:05	06:45	00:40	Advance/Washbore 7" casing	Drill 7" 0.50m to 1.00m
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:30	00:30	Fuel up/Wash Down/Break	TBT and daily inspections
07:30	08:00	00:30	Push Sampling	Shelby thick wall with catcher / 1.00m
08:00	08:20	00:20	Advance/Washbore 7" casing	Advance 7" / 1.00m to 1.50m
08:20	08:30	00:10	Downhole Hammer Sampling	Hammer sample / 1.50m to 1.95m
08:30	08:45	00:15	Advance/Washbore 7" casing	Advance 7" / 1.50m to 2.00m
08:45	09:00	00:15	Downhole Hammer Sampling	Hammer sample / 2.00m to 2.45m
09:00	09:15	00:15	Advance/Washbore 7" casing	Advance 7" / 2.00m to 2.50m
09:15	09:40	00:25	Run-in Geobor Casing	Lift off Rod shute and 7" casing pallet from the cantilever / Lift on casing pallet of Geobor
09:40	10:00	00:20	Run-in Geobor Casing	Run-in Geobor to 2.50m and continue drilling and sampling operations
10:00	10:15	00:15	CPT Operations	CPT 1 / 2.50m to 3.95m
10:15	10:35	00:20	Fuel up/Wash Down/Break	Remove spacers and washers from water swivel and tighten back down
10:35	12:00	01:25	Offshore Resupply	Drilling operations stopped to conduct lifting operations / 4 x bags of food from CTV to deck / Lift off 6 x bags of rubbish from deck to CTV / Lift off broken CPT winch and spare CPT wire from deck to CTV. Lift off 2 x empty lift bags for ON-signers bags
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	12:35	00:05	Geobor NCD	NCD 2.50m to 3.00m

Summary of Events

Begin	End	Duration	Type	Description
12:35	13:00	00:25	Push Sampling	Shelby thick wall with catcher / over sample from CPT 1 / 3.00m to 4.00m
13:00	13:15	00:15	Geobor NCD	NCD 3.00m to 4.00m
13:15	13:25	00:10	CPT Operations	CPT 2 / 4.00m to 5.50m
13:25	13:35	00:10	Geobor NCD	NCD 4.00 to 4.50m
13:35	13:45	00:10	Push Sampling	Shelby thick wall with catcher / Over sample of CPT 2 / 4.50m to 5.50m
13:45	13:55	00:10	Geobor NCD	NCD 4.50m to 5.50m
13:55	14:00	00:05	Push Sampling	Shelby thick wall with catcher / 5.50m to 6.00m
14:00	14:10	00:10	Push Sampling	Shelby thick wall with catcher / 6.00m to 6.50m
14:10	14:20	00:10	Push Sampling	NCD 5.50m to 6.50m
14:20	14:35	00:15	CPT Operations	CPT 3 / 6.50m to 8.00m
14:35	14:50	00:15	Geobor NCD	NCD 6.50m to 7.00m
14:50	15:00	00:10	Push Sampling	Shelby thick wall with catcher / 7.00m to 8.00m / Over sample of CPT3
15:00	15:10	00:10	Geobor NCD	NCD 7.00m to 8.00m
15:10	15:25	00:15	CPT Operations	CPT 4 / 8.00m to 9.50m
15:25	17:00	01:35	Offshore Crew Change	Drilling operations stopped to conduct offshore crew change / The frog system was used, 11 x PAX off , 11 x PAX on / Lift on ON-signers bags and lift off OFF-signers bags.
17:00	17:10	00:10	Geobor NCD	NCD 8.00m to 8.50m
17:10	17:15	00:05	Push Sampling	Shelby thick wall with catcher / over sample CPT4 / 8.50m to 9.50m
17:15	17:25	00:10	Geobor NCD	NCD 8.50m to 9.50m
17:25	17:35	00:10	Push Sampling	Shelby thick wall with catcher / 9.50m to 10.00m
17:35	17:45	00:10	Push Sampling	Shelby thick wall with catcher / 10.00m to 10.50m
17:45	17:55	00:10	Geobor NCD	NCD 9.50m to 10.50m
17:55	18:10	00:15	CPT Operations	CPT 5 / 10.50m to 12.00m
18:10	18:20	00:10	Geobor NCD	NCD 10.50m to 11.00m
18:20	18:25	00:05	Push Sampling	Shelby thick wall / 11.00m to 12.00m
18:25	18:35	00:10	Geobor NCD	NCD 11.00m to 12.00m
18:35	18:45	00:10	Fuel up/Wash Down/Break	Fuel-up
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Night shift sign onto PTW / BH at 12.00m / Sampled at 12.00m
19:00	19:25	00:25	Offshore Crew Change	Crew transfer with Frog basket / 4 Pax off, 2 PAX on / 2 bags of luggage off / 1 bag on
19:25	19:40	00:15	Fuel up/Wash Down/Break	TBT on operations for the shift / pre-start checks.
19:40	20:00	00:20	CPT Operations	CPT 6 / 12.00m to 13.50m
20:00	20:15	00:15	Geobor NCD	NCD 12.00m to 12.50m
20:15	20:30	00:15	Push Sampling	Shelby thick wall with catcher / 12.50m to 13.00m
20:30	20:45	00:15	Geobor NCD	NCD 12.50m to 13.50m
20:45	20:55	00:10	Push Sampling	Shelby thick wall with catcher / 13.50m to 13.90m
20:55	21:05	00:10	Geobor NCD	NCD 13.50m to 14.00m
21:05	21:15	00:10	Push Sampling	Shelby thick wall with catcher / 14.00m to 14.40m
21:15	21:30	00:15	Push Sampling	Shelby thick wall with catcher / 14.00m to 14.50m
21:30	21:40	00:10	Geobor NCD	NCD 14.00m to 14.50m
21:40	22:15	00:35	CPT Operations	CPT 7 / 14.50m to 16.00m
22:15	22:25	00:10	Geobor NCD	NCD 14.50m to 15.00m
22:25	22:35	00:10	Push Sampling	Shelby thick wall with catcher / 15.00m to 15.30m
22:35	22:50	00:15	Geobor NCD	NCD 15.00m to 16.00m
22:50	23:20	00:30	CPT Operations	CPT8 / 16.00m to 17.50m
23:20	24:00	00:40	Geobor NCD	NCD 16.50m to 17.50m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	2:30	0:00	6:55	0.87%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Pre-Move Prep	0:00	0:00	18:50	2.38%
MMO Pre-Start Watch	0:00	0:00	0:50	0.11%
DEME - Vessel Operations	0:00	0:00	39:00	4.93%
Geophys - Additional Casing Pull	0:00	0:00	4:10	0.53%
Geophys - 1st Casing Pull	0:00	0:00	2:15	0.28%
Fuel up/Wash Down/Break	2:15	0:00	34:50	4.40%
Geobor NCD	3:50	0:00	74:22	9.39%
Fugro Downtime	0:00	0:00	3:05	0.39%
Advance/Washbore 7" casing	1:45	0:00	7:50	0.99%
Shift Handover Talk	0:30	0:00	9:40	1.22%
Offshore Resupply	1:25	0:00	2:15	0.28%
Fugro Downtime - Breakdown	0:45	0:00	6:40	0.84%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.22%
Mobilisation	0:00	168:00	208:25	26.32%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.22%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.65%
Transit between BH	0:00	0:00	11:45	1.48%
Transit from Falmouth to Site	0:00	34:00	44:45	5.65%
Run-in Conductor Casing	0:00	0:00	12:50	1.62%
Vibrohammer Operations	0:15	0:00	8:10	1.03%
Run-in 7" Casing	1:00	0:00	7:15	0.92%
Run-in Geobor Casing	0:45	0:00	5:10	0.65%
Push Sampling	4:00	0:00	64:59	8.21%
Downhole Hammer Sampling	0:25	0:00	14:19	1.81%
Geobor Coring	0:00	0:00	56:05	7.08%
CPT Operations	2:35	0:00	21:30	2.72%
Wireline Geophys	0:00	0:00	28:35	3.61%
Trip-out Geobor Casing	0:00	0:00	3:40	0.46%
Trip-out 7" Casing	0:00	0:00	5:55	0.75%
Trip-out Conductor Casing	0:00	0:00	6:50	0.86%
Offshore Crew Change	2:00	0:00	2:15	0.28%
Standby Wind Speed - Drilling Operations	0:00	0:00	32:10	4.06%
Standby Current Speed - Casing	0:00	0:00	6:05	0.77%
Total	24:00	202:00	791:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9678	23.1893	Days	51.5318%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	22.0000	N°	48.8889%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
Frank Scotti	Geotechnical Engineer (days)	8
Raquel Francos	Geotechnical Engineer (days)	4
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Jose Fernandez	Wireline Geophys Operator (nights)	7
Megan Magrosky	Wireline Geophys Operator (nights)	5
Tom Cookson	Geotechnical Engineer (Nights)	7
Michael Newton	Geotechnical Engineer (Nights)	5
Aaron Brown	Lab Technician (Nights)	7
Aaron Crighton	Lab Technician (Nights)	5
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1813
Fugro	25	252	/	8318
Total	30	312	/	10131

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Megan Magrosky, Raquel Francos, Aaron Crighton, Michael Newton project ON signers.
Aaron Brown, Jose Fernandez, Frank Scotti, Tom Cookson project OFF signers.

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
22/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative
22/06/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	34	**Date:**	22/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH12 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	64
Environmental Incident	0	/	0
Shift Handover Talk	2	/	65
Permit to Work	4	/	80
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	57
Safety Drills	1	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	51
Vessel Induction	0	/	33
Project Induction	0	/	39
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

Safety muster drill carried out by the DEME and project crew

Activities performed these 24 hours

Continuation of drilling and CPT operations at BH12

Planned Work for Next 24 Hours

Completion of BH12 / Jack-up and proceed to BH16 / Jack-down

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.1	0.4	0.5	0.1	
Wave height (Hs)	m	0.2	0.2	0.1	0.2	
Wind direction	Degrees	NNE	NE	ESE	WSW	
Wind speed (m/s)	m/s	4.0	2.0	1.0	1.9	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
22/0600	NNE	3	4	0.1	SSW	0.1	8	NE	0.1	3	0.2	0.3
22/0900	NNE	4	5	0.1	SSW	0.1	8	NE	0.1	3	0.2	0.3
22/1200	NE	3	4	0.1	NE	0.1	3	SSW	0.1	7	0.2	0.3
22/1500	NE	2	3	0.1	NE	0.1	3	SSW	0.1	7	0.2	0.3
22/1800	ESE	2	2	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
22/2100	S	2	3	0.1	-	0.0	-	-	0.0	-	0.1	0.1
23/0000	WSW	3	4	0.1	-	0.0	-	-	0.0	-	0.1	0.2
23/0300	SW	3	4	0.1	-	0.0	-	-	0.0	-	0.1	0.2
23/0600	SSW	3	3	0.1	-	0.0	-	-	0.0	-	0.1	0.1
23/0900	S	3	4	0.1	-	0.0	-	-	0.0	-	0.1	0.2
23/1200	S	4	5	0.1	-	0.0	-	-	0.0	-	0.1	0.2
23/1500	S	7	9	0.3	-	0.0	-	-	0.0	-	0.3	0.6
23/1800	S	8	10	0.4	-	0.0	-	-	0.0	-	0.4	0.7
23/2100	SSW	7	9	0.5	-	0.0	-	-	0.0	-	0.5	0.9
24/0000	SSW	6	8	0.5	-	0.0	-	-	0.0	-	0.5	0.8
24/0300	S	5	6	0.4	SSW	0.1	5	-	0.0	-	0.4	0.6
24/0600	SW	6	8	0.4	SSW	0.1	5	-	0.0	-	0.4	0.7
24/0900	S	8	10	0.5	SSW	0.1	5	-	0.0	-	0.5	0.9
24/1200	S	10	13	0.6	SSW	0.2	5	-	0.0	-	0.6	1.0
24/1500	WNW	7	9	0.3	SSW	0.4	5	-	0.0	-	0.5	0.9
24/1800	SSW	6	8	0.2	SSW	0.5	5	-	0.0	-	0.5	0.9
24/2100	W	6	8	0.2	SSW	0.4	6	-	0.0	-	0.4	0.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:35	00:35	Fuel up/Wash Down/Break	Lunch
00:35	00:50	00:15	Push Sampling	Shelby thick wall / 17.50m to 18.00m
00:50	01:05	00:15	Push Sampling	Shelby thick wall / tube damaged, client instructed to drill out 18.50m for CPT
01:05	01:25	00:20	Geobor NCD	NCD 18.00m to 18.50m
01:25	02:05	00:40	CPT Operations	CPT9 / 18.50m to 20.00m
02:05	02:20	00:15	Geobor NCD	NCD 18.50m to 19.00m
02:20	02:35	00:15	Push Sampling	Shelby thick wall / 19.00m to 19.30m
02:35	02:50	00:15	Geobor NCD	NCD 19.00m to 20.00m
02:50	03:30	00:40	CPT Operations	CPT10 / 20.00m to 21.50m
03:30	03:55	00:25	Geobor NCD	NCD 20.00m to 21.00m
03:55	04:10	00:15	Push Sampling	Shelby thick wall / 21.00m to 21.50m
04:10	04:25	00:15	Geobor NCD	21.00m to 21.50m
04:25	04:40	00:15	Push Sampling	Shelby thin wall / 21.50m to 22.00m
04:40	04:55	00:15	Push Sampling	Shelby thin wall / 22.00m to 22.50m
04:55	05:10	00:15	Geobor NCD	NCD 21.50m to 22.50m
05:10	05:45	00:35	CPT Operations	CPT11 / 22.50m to 24.00m
05:45	06:00	00:15	Geobor NCD	NCD 22.50m to 23.00m
06:00	06:10	00:10	Push Sampling	Shelby thick wall / 23.00m to 23.40m
06:10	06:30	00:20	Geobor NCD	NCD 23.00m to 24.00m
06:30	06:45	00:15	Fuel up/Wash Down/Break	Fuel up / flush hole and tidy up
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:15	00:15	DEME - Vessel Operations	DEME / Project crew muster drill
07:15	07:30	00:15	Fuel up/Wash Down/Break	TBT and daily checks
07:30	07:55	00:25	CPT Operations	CPT12 / 24.00m to 25.50m
07:55	08:05	00:10	Geobor NCD	NCD 24.00m to 24.50m
08:05	08:20	00:15	Push Sampling	Shelby thick wall with catcher (Over sample of CPT12) / 24.50m to 25.50m
08:20	08:35	00:15	Geobor NCD	NCD 24.50m to 25.50m

DOME

Summary of Events

Begin	End	Duration	Type	Description
08:35	08:45	00:10	Push Sampling	Shelby thin wall / 26.00m to 26.50m
08:45	08:55	00:10	Push Sampling	Shelby thin wall / 26.00m to 26.50m
08:55	09:10	00:15	Geobor NCD	NCD 25.50m to 26.50m
09:10	09:20	00:10	Push Sampling	Shelby thin wall / 26.50m to 27.00m
09:20	09:25	00:05	Push Sampling	Shelby thin wall / 27.00m to 27.50m
09:25	09:35	00:10	Geobor NCD	NCD 26.50m to 27.50m
09:35	10:00	00:25	CPT Operations	CPT13 / 27.50m to 29.00m
10:00	10:10	00:10	Geobor NCD	NCD 27.50m to 28.00m
10:10	10:30	00:20	Push Sampling	Shelby thin wall / 28.00m to 29.00m / Over sample CPT13
10:30	10:45	00:15	Geobor NCD	NCD 28.00m to 29.00m
10:45	11:00	00:15	Push Sampling	Shelby thin wall / 29.00m to 29.50m
11:00	11:10	00:10	Push Sampling	Shelby thin wall / 29.50m to 30.00m
11:10	11:30	00:20	Geobor NCD	NCD 29.00m to 30.00m
11:30	11:40	00:10	Push Sampling	Shelby thin wall / 30.00m to 30.50m
11:40	11:50	00:10	Push Sampling	Shelby thin wall / 30.50m to 31.00m
11:50	12:10	00:20	Geobor NCD	NCD 30.00m to 31.00m
12:10	12:40	00:30	Fuel up/Wash Down/Break	Lunch
12:40	13:15	00:35	CPT Operations	CPT14 / 31.00m to 32.50m
13:15	13:25	00:10	Geobor NCD	NCD 31.00m to 31.50m
13:25	13:35	00:10	Push Sampling	Shelby thin wall / Over sample for CPT 14 / 31.50m to 32.50m
13:35	13:45	00:10	Geobor NCD	NCD 31.50m to 32.50m
13:45	14:05	00:20	Push Sampling	Shelby thin wall / 32.50m to 33.00m
14:05	14:20	00:15	Geobor NCD	NCD 32.50m to 33.00m
14:20	14:35	00:15	Push Sampling	Shelby thin wall / 33.00m to 33.50m
14:35	14:45	00:10	Geobor NCD	NCD 33.00m to 33.50m
14:45	15:05	00:20	CPT Operations	CPT 15 / 33.50m to 33.95m
15:05	15:20	00:15	Push Sampling	Shelby thin wall / Over sample of CPT 15 / 33.50m to 34.00m
15:20	15:30	00:10	Geobor NCD	NCD 33.50m to 34.00m
15:30	15:55	00:25	CPT Operations	CPT16 / 34.00m to 35.50m
15:55	16:10	00:15	Geobor NCD	NCD 34.00m to 34.50m
16:10	16:20	00:10	Push Sampling	Shelby thin wall / 34.50m to 35.20m / Over sample of CPT16
16:20	16:40	00:20	Geobor NCD	NCD 34.50m to 35.20m
16:40	17:00	00:20	Push Sampling	Shelby thick wall with catcher / 35.20m to 36.00m
17:00	17:20	00:20	Geobor NCD	NCD 35.20m to 36.00m
17:20	17:30	00:10	Push Sampling	Shelby thick wall with catcher / 36.00m to 36.50m
17:30	17:40	00:10	Geobor NCD	NCD 36.00m to 36.50m
17:40	17:55	00:15	Push Sampling	Shelby thick wall with catcher / 36.50m to 37.00m
17:55	18:10	00:15	Geobor NCD	NCD 36.50m to 37.00m
18:10	18:20	00:10	Push Sampling	Shelby thick wall with catcher / 37.00m to 37.50m
18:20	18:35	00:15	Geobor NCD	NCD 37.00m to 37.50m
18:35	18:45	00:10	Fuel up/Wash Down/Break	Fuel up plant
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sig onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on drilling operations / pre-start checks
19:15	19:45	00:30	CPT Operations	CPT17 37.50m to 39.00m
19:45	20:05	00:20	Geobor NCD	NCD 37.50m to 38.50m
20:05	20:20	00:15	Push Sampling	Shelby thick wall with catcher / 38.50m to 39.00m
20:20	20:35	00:15	Geobor NCD	NCD 38.50m to 39.00m
20:35	20:50	00:15	Push Sampling	Shelby thin walled 39.00m to 39.50m

Summary of Events

Begin	End	Duration	Type	Description
20:50	21:05	00:15	Push Sampling	Shelby thin walled / 39.50m to 40.00m
21:05	21:25	00:20	Geobor NCD	NCD 39.00m to 40.00m
21:25	21:40	00:15	Push Sampling	Shelby thick wall with catcher / 40.00m to 40.50m
21:40	21:55	00:15	Push Sampling	Shelby thick wall with catcher / 40.50m to 41.00m
21:55	22:15	00:20	Geobor NCD	NCD 40.00m to 41.00m
22:15	22:45	00:30	CPT Operations	CPT18 / 41.00m to 42.50m
22:45	23:15	00:30	Geobor Coring	Core over CPT range
23:15	23:50	00:35	Geobor Coring	Core run 42.50m to 44.00m
23:50	24:00	00:10	Geobor Coring	Core run 42.50m to 44.00m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	6:55	0.85%
Pre-Move Prep	0:00	0:00	18:50	2.31%
MMO Pre-Start Watch	0:00	0:00	0:50	0.10%
DEME - Vessel Operations	0:15	0:00	39:15	4.81%
Geophys - Additional Casing Pull	0:00	0:00	4:10	0.51%
Geophys - 1st Casing Pull	0:00	0:00	2:15	0.28%
Fuel up/Wash Down/Break	2:00	0:00	36:50	4.52%
Geobor NCD	8:00	0:00	82:22	10.10%
Fugro Downtime	0:00	0:00	3:05	0.38%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.96%
Shift Handover Talk	0:30	0:00	10:10	1.25%
Offshore Resupply	0:00	0:00	2:15	0.28%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.82%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.16%
Mobilisation	0:00	168:00	208:25	25.55%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.21%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.57%
Transit between BH	0:00	0:00	11:45	1.44%
Transit from Falmouth to Site	0:00	34:00	44:45	5.49%
Run-in Conductor Casing	0:00	0:00	12:50	1.57%
Vibrohammer Operations	0:00	0:00	8:10	1.00%
Run-in 7" Casing	0:00	0:00	7:15	0.89%
Run-in Geobor Casing	0:00	0:00	5:10	0.63%
Push Sampling	6:55	0:00	71:54	8.81%
Downhole Hammer Sampling	0:00	0:00	14:19	1.76%
Geobor Coring	1:15	0:00	57:20	7.03%
CPT Operations	5:05	0:00	26:35	3.26%
Wireline Geophys	0:00	0:00	28:35	3.50%
Trip-out Geobor Casing	0:00	0:00	3:40	0.45%
Trip-out 7" Casing	0:00	0:00	5:55	0.73%
Trip-out Conductor Casing	0:00	0:00	6:50	0.84%
Offshore Crew Change	0:00	0:00	2:15	0.28%
Standby Wind Speed - Drilling Operations	0:00	0:00	32:10	3.94%
Standby Current Speed - Casing	0:00	0:00	6:05	0.75%
Total	24:00	202:00	815:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	24.1893	Days	53.7540%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	23.0000	N°	51.1111%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
John Davidson	SPL Representative	12
Karl Routledge	Lead Geotechnical Engineer	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1873
Fugro	21	252	/	8570
Total	26	312	/	10443

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Deliverables for BH28 and BH09 are overdue. Clients request to improve the delivery timeframe for deliverables.

DOME

Fugro Representative



James Hills Nearshore Project Manager	23/06/2022

Client Representative



Wouter Zuijderduijn Client Representative	22/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	35	**Date:**	23/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH12 - Transit to BH16 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	66
Environmental Incident	0	/	0
Shift Handover Talk	2	/	67
Permit to Work	4	/	84
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	2	/	59
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	53
Vessel Induction	0	/	33
Project Induction	3	/	42
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME
HOC 1 - request smaller water bottles to fit fridge
HOC 2 - deck galley - give it a tidy at end of shift

Activities performed these 24 hours

EOH at BH12 / Transit to BH 16 / Completed jacking-up, pre-load and vessel at working height / Captain stopped lifting operations at 2200 due to high winds being recorded on the bridge equipment

Planned Work for Next 24 Hours

Run-in 20" , 7" and Geobor casing / Commence drilling and CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.9	0.4	n/a	1.2	1800: Not deployed due jacking ops
Wave height (Hs)	m	0.3	0.3	0.7	0.7	
Wind direction	Degrees	SSW	S	SSW	SSW	
Wind speed (m/s)	m/s	4.0	6.0	10	10	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
23/0600	SSW	4	5	0.2	SSW	0.2	14	-	0.0	-	0.3	0.4
23/0900	S	5	6	0.1	SSW	0.2	14	-	0.0	-	0.2	0.4
23/1200	S	6	8	0.2	SSW	0.2	14	-	0.0	-	0.3	0.5
23/1500	S	7	9	0.3	SSW	0.1	14	-	0.0	-	0.4	0.6
23/1800	SSW	8	10	0.4	SSW	0.1	14	-	0.0	-	0.4	0.7
23/2100	SSW	7	9	0.5	SSW	0.2	14	-	0.0	-	0.5	0.8
24/0000	SSW	7	9	0.5	SSW	0.2	14	-	0.0	-	0.5	0.9
24/0300	SSW	7	9	0.5	SSW	0.2	14	-	0.0	-	0.5	0.9
24/0600	SSW	8	10	0.6	SSW	0.2	13	-	0.0	-	0.6	1.0
24/0900	S	8	11	0.6	SSW	0.3	13	-	0.0	-	0.7	1.1
24/1200	SSE	9	11	0.6	SSW	0.3	13	-	0.0	-	0.7	1.2
24/1500	SSE	10	13	0.7	SSW	0.3	12	-	0.0	-	0.8	1.3
24/1800	S	11	14	0.7	SSW	0.2	12	-	0.0	-	0.8	1.3
24/2100	SSW	12	15	0.8	SSW	0.1	12	-	0.0	-	0.8	1.3
25/0000	SSW	13	17	0.8	-	0.0	-	-	0.0	-	0.8	1.4
25/0300	SSW	14	18	0.9	-	0.0	-	-	0.0	-	0.9	1.5
25/0600	SSW	14	19	0.9	-	0.0	-	-	0.0	-	0.9	1.5
25/0900	SSW	14	19	0.9	S	0.1	6	-	0.0	-	0.9	1.5
25/1200	SSW	14	19	0.9	S	0.3	6	-	0.0	-	0.9	1.6
25/1500	SSW	14	18	0.9	S	0.5	6	-	0.0	-	1.0	1.7
25/1800	S	13	17	0.8	S	0.6	6	-	0.0	-	1.0	1.7
25/2100	S	13	17	0.8	S	0.6	6	-	0.0	-	1.0	1.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:20	00:20	Geobor Coring	Core run 44.00m to 45.50m
00:20	00:45	00:25	Fuel up/Wash Down/Break	Lunch
00:45	01:10	00:25	Geobor Coring	Core-run 45.50m to 47.00m
01:10	01:35	00:25	Geobor Coring	Core-run 47.00m to 48.50m
01:35	02:15	00:40	Geobor Coring	Core run 48.50m to 50.00m
02:15	02:45	00:30	Geobor Coring	Core run 50.00m to 51.00m
02:45	03:15	00:30	Geobor Coring	Core run 51.00m to 52.50m
03:15	03:50	00:35	Geobor Coring	EOH@53.50m, confirmed by the client rep
03:50	04:25	00:35	Geophys - 1st Casing Pull	Flush hole then pull Geobor back to 35.60m and set--up for Geophys
04:25	05:55	01:30	Wireline Geophys	Run-in Caliper
05:55	06:45	00:50	Wireline Geophys	Caliper out / ABI run-in
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift to sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	08:20	01:00	Wireline Geophys	Geophys logging ongoing
08:20	09:00	00:40	Geophys - Additional Casing Pull	Geophys complete / de-rig Geophys equipment and start pulling Geobor
09:00	09:35	00:35	Trip-out Geobor Casing	Geobor on deck / commenced pulling 7" casing
09:35	11:25	01:50	Pre-Move Prep	Lift off CPT RAMS and start clearing cantilever of casing pallets, deck clamp etc
11:25	12:40	01:15	Trip-out Conductor Casing	Start pulling conductor casing
12:40	13:00	00:20	Fuel up/Wash Down/Break	All casing on deck. Lunch
13:00	15:50	02:50	Pre-Move Prep	Crane is put away and and vessel starts jacking down / unable to prepare casing lengths for the next location / sea fasten while jacking down / Conduct crew change with CTV, pushing on 1 x PAX off
15:50	18:45	02:55	DEME - Vessel Operations	Completed transit to BH16 / on DP started lowering legs / pre-loading and jacking
18:45	19:00	00:15	Shift Handover Talk	Shift handover / Day shift to sign onto PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT on setting up 20" casing
19:15	22:00	02:45	DEME - Vessel Operations	Continue pre-loading / commenced jacking up to working height

Summary of Events

Begin	End	Duration	Type	Description
22:00	24:00	02:00	Standby Wind Speed - Drilling Operations	Informed by the bridge that wind speed above limits for craning operations / W.O.W to assemble 20" casing

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	6:55	0.82%
Pre-Move Prep	4:40	0:00	23:30	2.80%
MMO Pre-Start Watch	0:00	0:00	0:50	0.10%
DEME - Vessel Operations	5:40	0:00	44:55	5.35%
Geophys - Additional Casing Pull	0:40	0:00	4:50	0.58%
Geophys - 1st Casing Pull	0:35	0:00	2:50	0.34%
Fuel up/Wash Down/Break	1:20	0:00	38:10	4.55%
Geobor NCD	0:00	0:00	82:22	9.81%
Fugro Downtime	0:00	0:00	3:05	0.37%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.93%
Shift Handover Talk	0:30	0:00	10:40	1.27%
Offshore Resupply	0:00	0:00	2:15	0.27%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.79%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.09%
Mobilisation	0:00	168:00	208:25	24.82%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.21%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.50%
Transit between BH	0:00	0:00	11:45	1.40%
Transit from Falmouth to Site	0:00	34:00	44:45	5.33%
Run-in Conductor Casing	0:00	0:00	12:50	1.53%
Vibrohammer Operations	0:00	0:00	8:10	0.97%
Run-in 7" Casing	0:00	0:00	7:15	0.86%
Run-in Geobor Casing	0:00	0:00	5:10	0.62%
Push Sampling	0:00	0:00	71:54	8.56%
Downhole Hammer Sampling	0:00	0:00	14:19	1.70%
Geobor Coring	3:25	0:00	60:45	7.23%
CPT Operations	0:00	0:00	26:35	3.17%
Wireline Geophys	3:20	0:00	31:55	3.80%
Trip-out Geobor Casing	0:35	0:00	4:15	0.51%
Trip-out 7" Casing	0:00	0:00	5:55	0.70%
Trip-out Conductor Casing	1:15	0:00	8:05	0.96%
Offshore Crew Change	0:00	0:00	2:15	0.27%
Standby Wind Speed - Drilling Operations	2:00	0:00	34:10	4.07%
Standby Current Speed - Casing	0:00	0:00	6:05	0.72%
Total	24:00	202:00	839:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	25.1893	Days	55.9762%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	24.0000	N°	53.3333%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
Wayne Evans	HSE Advisor	7
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1933
Fugro	21	247	/	8817
Total	26	307	/	10750

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Daily 10am management meetings going forward to assist good communications and understanding of planning & ops between all 3 organisations

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

24/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative

23/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	36	**Date:**	24/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH16				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	68
Environmental Incident	0	/	0
Shift Handover Talk	2	/	69
Permit to Work	4	/	88
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	1	/	60
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	55
Vessel Induction	0	/	33
Project Induction	0	/	42
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Hot works / General work / Working at heights / Issued by DEME

HOC's : Inadequate lighting for the CPT winch operator.

Activities performed these 24 hours

Completed preparation work of the 20" casing on deck / Unable to proceed due to high winds above the safe working limit

Planned Work for Next 24 Hours

Weather dependent complete deployment of 20", 7" and Geobor and commence drilling and CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.0	1.6	1.5	1.2	
Wave height (Hs)	m	0.5	0.8	0.9	1.3	
Wind direction	Degrees	SSW	S	S	SW	
Wind speed (m/s)	m/s	5	10	12	14	Significantly higher wind speed observed on crane anemometer ~14-18m/s.

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea Swell 1 Dir		Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
24/0600	SSW	5	7	0.4	SSW	0.2	13	-	0.0	-	0.4	0.7
24/0900	S	8	11	0.6	SSW	0.4	13	-	0.0	-	0.7	1.2
24/1200	S	10	13	0.7	SSW	0.6	13	SSW	0.2	6	0.9	1.6
24/1500	SSE	11	15	0.8	SSW	0.7	12	SSW	0.3	6	1.1	1.8
24/1800	S	12	15	0.8	SSW	1.0	6	SSW	0.4	12	1.3	2.2
24/2100	SW	11	14	0.7	SSW	0.9	6	SSW	0.3	12	1.2	1.9
25/0000	SW	10	13	0.6	SSW	0.8	6	SSW	0.1	12	1.0	1.7
25/0300	SW	9	11	0.5	SSW	0.7	6	-	0.0	-	0.9	1.5
25/0600	SW	8	11	0.5	SSW	0.6	6	-	0.0	-	0.8	1.3
25/0900	SSW	12	16	0.8	SSW	0.6	6	-	0.0	-	1.0	1.7
25/1200	S	14	18	0.9	SSW	0.8	6	-	0.0	-	1.2	2.0
25/1500	S	14	18	0.9	SSW	1.0	6	-	0.0	-	1.3	2.2
25/1800	SSW	15	19	0.9	SSW	1.3	6	-	0.0	-	1.6	2.6
25/2100	SSW	14	19	0.9	SSW	1.6	6	-	0.0	-	1.8	3.1
26/0000	SSW	16	21	1.0	SSW	1.8	6	-	0.0	-	2.0	3.4
26/0300	SW	14	18	0.9	SSW	2.0	6	-	0.0	-	2.2	3.6
26/0600	SW	13	17	0.8	S	1.5	6	-	0.0	-	1.7	2.9
26/0900	SW	12	15	0.8	S	1.3	6	-	0.0	-	1.5	2.5
26/1200	SSW	13	17	0.8	S	1.2	6	-	0.0	-	1.5	2.5
26/1500	SSW	13	16	0.8	S	1.2	6	-	0.0	-	1.5	2.4
26/1800	SSW	11	14	0.7	S	1.1	6	-	0.0	-	1.3	2.2
26/2100	SW	10	13	0.7	S	1.0	6	-	0.0	-	1.2	2.0

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	06:00	05:30	WoW - Wind speed - drilling operations	Unable to carryout any cranage operations / informed by the bridge that wind speed is above limits for craning operations / W.O.W to assemble 20" casing
06:00	06:45	00:45	Post-Move Prep	Bolt 2 x 11m of 20" together / undo 5m from 1m and lay down
06:45	07:00	00:15	Shift Handover Talk	Shift handover / Day shift sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	09:25	02:05	Post-Move Prep	Remove and add lengths of 20" conductor casing on deck to make-up lengths needed for BH16
09:25	14:20	04:55	Standby Current Speed - Casing	Waiting for slack water for deploying conductor casing
14:20	18:45	04:25	WoW - Wind speed - drilling operations	Current within limits / wind on limits HS of 1.0 -1.1m, which is above limits. Forecast is a rising forecast, decision is not to attempt to deploy conductor casing on this slack / Monitoring weather conditions for next opportunity
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover / Night shift sign onto PTW
19:00	24:00	05:00	WoW - Wind speed - drilling operations	Unable to deploy conductor casing due to weather limits being above the safe working limits

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	2:50	0:00	9:45	1.13%
Pre-Move Prep	0:00	0:00	23:30	2.72%
MMO Pre-Start Watch	0:00	0:00	0:50	0.10%
DEME - Vessel Operations	0:00	0:00	44:55	5.20%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.56%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.33%
Fuel up/Wash Down/Break	1:05	0:00	39:15	4.54%
Geobor NCD	0:00	0:00	82:22	9.54%
Fugro Downtime	0:00	0:00	3:05	0.36%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.91%
Shift Handover Talk	0:15	0:00	10:55	1.26%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Offshore Resupply	0:00	0:00	2:15	0.26%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.77%
Neptune arrival to Falmouth	0:00	0:00	17:35	2.04%
Mobilisation	0:00	168:00	208:25	24.13%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.20%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.43%
Transit between BH	0:00	0:00	11:45	1.36%
Transit from Falmouth to Site	0:00	34:00	44:45	5.18%
Run-in Conductor Casing	0:00	0:00	12:50	1.49%
Vibrohammer Operations	0:00	0:00	8:10	0.95%
Run-in 7" Casing	0:00	0:00	7:15	0.84%
Run-in Geobor Casing	0:00	0:00	5:10	0.60%
Push Sampling	0:00	0:00	71:54	8.32%
Downhole Hammer Sampling	0:00	0:00	14:19	1.66%
Geobor Coring	0:00	0:00	60:45	7.03%
CPT Operations	0:00	0:00	26:35	3.08%
Wireline Geophys	0:00	0:00	31:55	3.70%
Trip-out Geobor Casing	0:00	0:00	4:15	0.49%
Trip-out 7" Casing	0:00	0:00	5:55	0.68%
Trip-out Conductor Casing	0:00	0:00	8:05	0.94%
Offshore Crew Change	0:00	0:00	2:15	0.26%
WoW - Wind speed - drilling operations	14:55	0:00	49:05	5.68%
Standby Current Speed - Casing	4:55	0:00	11:00	1.27%
Total	24:00	202:00	863:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	26.1893	Days	58.1984%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	25.0000	N°	55.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
	(days)	
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Karl Routledge	Lead Geotechnical Engineer	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	1993
Fugro	20	240	/	9057
Total	25	300	/	11050

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Weather window this morning was not long enough to both prepare conductor casing and run it in.
Fugro wind recording device is noted to be recording lower than the vessels systems. Mean of vessels wind monitoring systems are being used.
Some deviation in water current measurements across Fugro and DEME systems. Captain requests Fugro check with bridge to ensure DEME system confirms current is workable, UHF radio given to Drillers.
10am management meetings to take place to aid good comms between all parties

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
25/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative
25/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	37	**Date:**	25/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH16 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	1	/	69
Environmental Incident	0	/	0
Shift Handover Talk	2	/	71
Permit to Work	2	/	90
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	60
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	57
Vessel Induction	0	/	33
Project Induction	0	/	42
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / General work Issued by DEME

Activities performed these 24 hours

Unable to deploy 20" Conductor casing due to weather being above safe working limits

Planned Work for Next 24 Hours

Weather dependent complete deployment of 20", 7" and Geobor and commence drilling and CPT operations and offshore crew change, these tasks will only proceed if the weather goes below the safe working limits.

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.5	N/A	N/A	N/A	Current meter inboard due to the increasing sea state
Wave height (Hs)	m	2.2	2.1	2.0		
Wind direction	Degrees	SW	S	S		
Wind speed (m/s)	m/s	11	14	13		Significantly higher wind speed observed on crane anemometer ~14-18m/s.

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
25/0600	SW	11	15	0.7	SSW	2.1	6	-	0.0	-	2.2	3.7
25/0900	SSW	13	17	0.8	SSW	2.0	6	-	0.0	-	2.2	3.6
25/1200	S	14	18	0.9	SSW	1.9	6	-	0.0	-	2.1	3.5
25/1500	S	14	18	0.9	SSW	1.8	6	-	0.0	-	2.0	3.3
25/1800	S	13	17	0.8	SSW	1.8	6	-	0.0	-	2.0	3.3
25/2100	SSW	14	18	0.9	SSW	1.8	6	-	0.0	-	2.0	3.3
26/0000	SSW	16	20	0.9	SSW	1.8	6	-	0.0	-	2.0	3.4
26/0300	S	16	21	1.0	SSW	2.0	6	-	0.0	-	2.2	3.7
26/0600	SSW	15	19	0.9	S	1.9	6	-	0.0	-	2.1	3.5
26/0900	SSW	12	15	0.8	S	1.7	6	-	0.0	-	1.9	3.1
26/1200	SW	11	14	0.7	S	1.5	6	-	0.0	-	1.7	2.8
26/1500	SW	10	13	0.6	S	1.5	6	-	0.0	-	1.6	2.7
26/1800	WSW	8	11	0.5	S	1.4	6	-	0.0	-	1.5	2.5
26/2100	WSW	8	10	0.5	S	1.2	6	-	0.0	-	1.3	2.2
27/0000	W	9	12	0.6	S	1.0	6	-	0.0	-	1.1	1.9
27/0300	WSW	7	9	0.4	S	0.9	6	-	0.0	-	1.0	1.7
27/0600	WSW	6	8	0.4	S	0.8	6	-	0.0	-	0.9	1.5
27/0900	SW	5	7	0.1	S	0.7	6	-	0.0	-	0.7	1.2
27/1200	SSW	12	15	0.7	S	0.5	6	-	0.0	-	0.8	1.4
27/1500	SSW	13	17	0.7	S	0.5	6	-	0.0	-	0.9	1.5
27/1800	SSW	12	15	0.7	S	0.5	6	-	0.0	-	0.8	1.4
27/2100	SSW	12	15	0.7	S	0.6	6	-	0.0	-	0.9	1.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	06:45	06:15	WoW - Wind speed - drilling operations	Winds above safe working limit to deploy the conductor casing
06:45	07:00	00:15	Shift Handover Talk	Shift hand over talk / Day shift to sign onto PTW
07:00	12:00	05:00	WoW - Wind speed - drilling operations	Winds above safe working limit to deploy the conductor casing
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	18:45	06:15	WoW - Wind speed - drilling operations	Winds above safe working limit to deploy the conductor casing
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	24:00	05:00	WoW - Wind speed - drilling operations	Winds above safe working limit to deploy the conductor casing

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	9:45	1.10%
Pre-Move Prep	0:00	0:00	23:30	2.65%
MMO Pre-Start Watch	0:00	0:00	0:50	0.09%
DEME - Vessel Operations	0:00	0:00	44:55	5.06%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.54%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.32%
Fuel up/Wash Down/Break	1:00	0:00	40:15	4.53%
Geobor NCD	0:00	0:00	82:22	9.28%
Fugro Downtime	0:00	0:00	3:05	0.35%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.88%
Shift Handover Talk	0:30	0:00	11:25	1.29%
Offshore Resupply	0:00	0:00	2:15	0.25%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.75%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.98%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Mobilisation	0:00	168:00	208:25	23.48%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.20%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.37%
Transit between BH	0:00	0:00	11:45	1.32%
Transit from Falmouth to Site	0:00	34:00	44:45	5.04%
Run-in Conductor Casing	0:00	0:00	12:50	1.45%
Vibrohammer Operations	0:00	0:00	8:10	0.92%
Run-in 7" Casing	0:00	0:00	7:15	0.82%
Run-in Geobor Casing	0:00	0:00	5:10	0.58%
Push Sampling	0:00	0:00	71:54	8.10%
Downhole Hammer Sampling	0:00	0:00	14:19	1.61%
Geobor Coring	0:00	0:00	60:45	6.84%
CPT Operations	0:00	0:00	26:35	2.99%
Wireline Geophys	0:00	0:00	31:55	3.60%
Trip-out Geobor Casing	0:00	0:00	4:15	0.48%
Trip-out 7" Casing	0:00	0:00	5:55	0.67%
Trip-out Conductor Casing	0:00	0:00	8:05	0.91%
Offshore Crew Change	0:00	0:00	2:15	0.25%
WoW - Wind speed - drilling operations	22:30	0:00	71:35	8.06%
Standby Current Speed - Casing	0:00	0:00	11:00	1.24%
Total	24:00	202:00	887:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	27.1893	Days	60.4207%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	26.0000	N°	57.7778%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Karl Routledge	Lead Geotechnical Engineer	12
John Davidson	SPL Representative	12

Night Shift

Employee Name	Job Title	Hours Worked
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2053
Fugro	20	240	/	9297
Total	25	300	/	11350

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Neptune Captain informed Fugro OPM and SSE representative that DEME Captain Werner Lammens, in an email to SSE and Fugro on 3rd of June stated that following a cargo transfer with CTV Panther the limits for this operation should be 0.7m Hs or 1.1m Hmax with the limit for personnel transfer being lower.
These lower limits may reduce the length and number of useable weather windows for CTV operations

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
26/06/2022

Client Representative



Wouter Zuijderduijn
Client Representative
26/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	38	**Date:**	26/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH16 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	71
Environmental Incident	0	/	0
Shift Handover Talk	2	/	73
Permit to Work	4	/	94
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	60
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	2	/	59
Vessel Induction	2	/	35
Project Induction	2	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Upper deck placed out of bounds by the Neptune bridge crew at 0130 until 0600

Activities performed these 24 hours

Unable to deploy 20" Conductor casing due to weather being above safe working limits

Planned Work for Next 24 Hours

Deploy Conductor / 7" / Geobor casing and commence drilling and CPT operations

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	n/a	n/a	n/a	1.5	Current meter not deployed until 1900
Wave height (Hs)	m	1.9	2.0	1.5	1.1	
Wind direction	Degrees	SSW	SSW	SW	WSW	
Wind speed (m/s)	m/s	15	14	10	8	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
26/0600	SSW	15	19	0.9	S	2.2	6	-	0.0	-	2.4	4.0
26/0900	SSW	13	17	0.8	S	2.0	6	-	0.0	-	2.2	3.6
26/1200	SSW	14	19	0.9	S	1.8	6	-	0.0	-	2.0	3.4
26/1500	SSW	13	17	0.8	S	1.5	6	-	0.0	-	1.7	2.9
26/1800	SW	10	13	0.7	S	1.4	6	-	0.0	-	1.6	2.6
26/2100	SW	9	11	0.5	S	1.2	6	-	0.0	-	1.3	2.2
27/0000	WSW	8	10	0.5	S	1.0	6	-	0.0	-	1.1	1.9
27/0300	W	8	10	0.5	S	0.9	6	-	0.0	-	1.0	1.7
27/0600	WSW	7	9	0.4	S	0.8	6	-	0.0	-	0.9	1.5
27/0900	WSW	7	9	0.3	S	0.7	6	-	0.0	-	0.8	1.3
27/1200	SSW	9	12	0.5	S	0.5	6	-	0.0	-	0.7	1.2
27/1500	SSW	10	14	0.6	S	0.5	6	-	0.0	-	0.8	1.3
27/1800	SSW	12	16	0.7	S	0.5	6	-	0.0	-	0.9	1.4
27/2100	SSW	11	15	0.6	S	0.6	6	-	0.0	-	0.9	1.5
28/0000	SSW	14	18	0.9	S	0.8	6	-	0.0	-	1.2	2.0
28/0300	S	15	20	0.9	S	1.3	6	-	0.0	-	1.6	2.7
28/0600	S	16	21	1.0	S	1.6	7	-	0.0	-	1.9	3.1
28/0900	S	17	22	1.0	S	2.0	7	-	0.0	-	2.2	3.7
28/1200	S	14	18	0.9	S	2.0	7	-	0.0	-	2.2	3.6
28/1500	SSW	13	17	0.8	S	1.9	7	-	0.0	-	2.1	3.5
28/1800	SSW	13	16	0.8	S	1.6	7	-	0.0	-	1.8	3.0
28/2100	SSW	12	15	0.8	S	1.4	7	-	0.0	-	1.6	2.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Fuel up/Wash Down/Break	Lunch
00:30	01:30	01:00	WoW - Wind speed - drilling operations	Winds and sea above safe working limit to deploy the conductor casing
01:30	06:00	04:30	WoW - Wind speed - drilling operations	Upper deck placed out of bounds due to 30+Knts gusts across the deck / Winds and sea above safe working limit to deploy the conductor casing
06:00	06:45	00:45	WoW - Wind speed - drilling operations	Winds and sea above safe working limit to deploy the conductor casing
06:45	07:00	00:15	Shift Handover Talk	Shift handover / Day shift sign PTW
07:00	12:00	05:00	WoW - Wind speed - drilling operations	Winds and sea above safe working limit to deploy the conductor casing
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	18:45	06:15	WoW - Wind speed - drilling operations	Winds and sea above safe working limit to deploy the conductor casing
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	20:15	01:15	WoW - Wind speed - drilling operations	Winds and sea above safe working limit to deploy the conductor casing
20:15	21:15	01:00	DEME - Vessel Operations	Commence jacking down for offshore crew change
21:15	21:30	00:15	Offshore Crew Change	Offshore crew change 2 x PAX off / 2 x PAX on
21:30	22:30	01:00	DEME - Vessel Operations	Jack-up to working height
22:30	24:00	01:30	Standby Current Speed - Casing	Waiting on slack tide to install 20" casing

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	9:45	1.07%
Pre-Move Prep	0:00	0:00	23:30	2.58%
MMO Pre-Start Watch	0:00	0:00	0:50	0.09%
DEME - Vessel Operations	2:00	0:00	46:55	5.15%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.53%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.31%
Fuel up/Wash Down/Break	1:00	0:00	41:15	4.52%
Geobor NCD	0:00	0:00	82:22	9.03%
Fugro Downtime	0:00	0:00	3:05	0.34%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.86%
Shift Handover Talk	0:30	0:00	11:55	1.31%
Offshore Resupply	0:00	0:00	2:15	0.25%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.73%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.93%
Mobilisation	0:00	168:00	208:25	22.86%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.19%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.30%
Transit between BH	0:00	0:00	11:45	1.29%
Transit from Falmouth to Site	0:00	34:00	44:45	4.91%
Run-in Conductor Casing	0:00	0:00	12:50	1.41%
Vibrohammer Operations	0:00	0:00	8:10	0.90%
Run-in 7" Casing	0:00	0:00	7:15	0.80%
Run-in Geobor Casing	0:00	0:00	5:10	0.57%
Push Sampling	0:00	0:00	71:54	7.89%
Downhole Hammer Sampling	0:00	0:00	14:19	1.57%
Geobor Coring	0:00	0:00	60:45	6.66%
CPT Operations	0:00	0:00	26:35	2.92%
Wireline Geophys	0:00	0:00	31:55	3.50%
Trip-out Geobor Casing	0:00	0:00	4:15	0.47%
Trip-out 7" Casing	0:00	0:00	5:55	0.65%
Trip-out Conductor Casing	0:00	0:00	8:05	0.89%
Offshore Crew Change	0:15	0:00	2:30	0.27%
WoW - Wind speed - drilling operations	18:45	0:00	90:20	9.91%
Standby Current Speed - Casing	1:30	0:00	12:30	1.37%
Total	24:00	202:00	911:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	28.1893	Days	62.6429%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	27.0000	N°	60.0000%

Day Shift

Employee Name	Job Title	Hours Worked

Night Shift

Employee Name	Job Title	Hours Worked

DOME

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Karl Routledge	Lead Geotechnical Engineer	12
John Davidson	SPL Representative	12
Stephen Forster	Client Rep (days)	3

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	5
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	3

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	6	56	/	2109
Fugro	21	243	/	9540
Total	27	299	/	11649

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Metocean conditions improve slightly ahead of forecast. CTV operation brought forward to maximize opportunity to run casing at 3am. Transfer completed safely in 1.2m h/s with the Neptune positioned bow into prevailing wind and with favorable current and an improving short term forecast. Vessel used was Adventurer
Off signers are Ian Millard and Wouter Zuijderduijn
On Signers are Nick Buzzard and Stephen Forster

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
27/06/2022

Client Representative



Stephen Forster
Client Representative
27/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	39	**Date:**	27/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH16 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	73
Environmental Incident	0	/	0
Shift Handover Talk	2	/	75
Permit to Work	4	/	98
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	1	/	61
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

WOW. Run 20" casing and recover after excessive movement observed in current. Inspect casing, confirm ok & stby for next location

Planned Work for Next 24 Hours

WOW - Agree next location

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.6	0.5	0.5	0.4	
Wave height (Hs)	m	0.9	0.7	0.8	1.3	
Wind direction	Degrees	W	S	SSW	SSW	
Wind speed (m/s)	m/s	7	12	14	14	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
27/0600	W	7	9	0.4	S	0.8	6	-	0.0	-	0.9	1.5
27/0900	WSW	7	9	0.3	S	0.7	6	-	0.0	-	0.8	1.3
27/1200	S	9	12	0.5	S	0.5	6	-	0.0	-	0.7	1.2
27/1500	SSW	11	15	0.6	S	0.5	6	-	0.0	-	0.8	1.4
27/1800	SSW	11	14	0.6	S	0.5	6	-	0.0	-	0.8	1.3
27/2100	SSW	12	16	0.7	S	0.7	6	-	0.0	-	1.0	1.7
28/0000	SSW	14	18	0.9	S	1.0	6	-	0.0	-	1.3	2.2
28/0300	S	15	20	0.9	S	1.4	6	-	0.0	-	1.7	2.8
28/0600	S	16	21	0.9	S	1.8	7	-	0.0	-	2.0	3.4
28/0900	S	15	20	0.9	S	2.2	7	-	0.0	-	2.4	4.0
28/1200	S	15	20	0.9	S	2.2	7	-	0.0	-	2.4	4.0
28/1500	SSW	13	16	0.8	S	1.9	7	-	0.0	-	2.1	3.5
28/1800	SSW	12	16	0.8	S	1.6	7	-	0.0	-	1.8	3.0
28/2100	SSW	10	13	0.7	S	1.4	7	-	0.0	-	1.6	2.6
29/0000	SSW	7	9	0.5	S	1.3	7	-	0.0	-	1.4	2.3
29/0300	WSW	4	5	0.2	S	1.0	7	-	0.0	-	1.0	1.7
29/0600	SW	3	4	0.1	S	0.9	7	-	0.0	-	0.9	1.5
29/0900	S	3	5	0.1	S	0.8	7	-	0.0	-	0.8	1.3
29/1200	S	6	8	0.2	S	0.7	7	-	0.0	-	0.7	1.2
29/1500	S	7	9	0.2	S	0.6	7	-	0.0	-	0.6	1.1
29/1800	SSE	7	9	0.3	S	0.6	7	S	0.1	15	0.7	1.2
29/2100	SE	7	9	0.3	S	0.5	7	S	0.1	14	0.6	1.0

Summary of Events

Begin	End	Duration	Type	Description
00:00	02:30	02:30	WoW - Wind speed - drilling operations	Weather above safe working limits
02:30	03:45	01:15	Post-Move Prep	Casing prep work
03:45	04:15	00:30	Post-Move Prep	TBT on running out the casings
04:15	05:50	01:35	Run-in Conductor Casing	Run-in 20" conductor casing / DTM =49.80m / Surge to 0.60m
05:50	06:45	00:55	Vibrohammer Operations	Lift on hammer / hammer casing to 2.10 BML
06:45	07:00	00:15	Shift Handover Talk	Shift handover talk / Day shift sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	Daily checks, prepare for drilling ops
07:20	07:45	00:25	Run-in 7" Casing	Preparing deck to run in 7" casing. 20" casing is seen to be moving excessively in current. Scour suspected
07:45	09:30	01:45	Standby Current Speed - Casing	Waiting on current speed to recover 20" casing
09:30	12:00	02:30	Trip-out Conductor Casing	Pull 20" casing to deck and inspect all joints and bolts. Look for damage. All normal
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	18:45	06:15	Standby Wave Height - Vessel Move	SSE instruct next move will be either bump over or new location. Neptune does not have safe weather window for this move.
18:45	19:00	00:15	Shift Handover Talk	Shift handover talk / Night shift sign onto PTW
19:00	24:00	05:00	Standby Wave Height - Vessel Move	Secure deck items for expected weather

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	1:45	0:00	11:30	1.23%
Pre-Move Prep	0:00	0:00	23:30	2.51%
MMO Pre-Start Watch	0:00	0:00	0:50	0.09%
DEME - Vessel Operations	0:00	0:00	46:55	5.01%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.52%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.30%
Fuel up/Wash Down/Break	0:50	0:00	42:05	4.50%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Geobor NCD	0:00	0:00	82:22	8.80%
Fugro Downtime	0:00	0:00	3:05	0.33%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.84%
Shift Handover Talk	0:30	0:00	12:25	1.33%
Offshore Resupply	0:00	0:00	2:15	0.24%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.71%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.88%
Mobilisation	0:00	168:00	208:25	22.27%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.19%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.24%
Transit between BH	0:00	0:00	11:45	1.26%
Transit from Falmouth to Site	0:00	34:00	44:45	4.78%
Run-in Conductor Casing	1:35	0:00	14:25	1.54%
Vibrohammer Operations	0:55	0:00	9:05	0.97%
Run-in 7" Casing	0:25	0:00	7:40	0.82%
Run-in Geobor Casing	0:00	0:00	5:10	0.55%
Push Sampling	0:00	0:00	71:54	7.68%
Downhole Hammer Sampling	0:00	0:00	14:19	1.53%
Geobor Coring	0:00	0:00	60:45	6.49%
CPT Operations	0:00	0:00	26:35	2.84%
Wireline Geophys	0:00	0:00	31:55	3.41%
Trip-out Geobor Casing	0:00	0:00	4:15	0.45%
Trip-out 7" Casing	0:00	0:00	5:55	0.63%
Trip-out Conductor Casing	2:30	0:00	10:35	1.13%
Offshore Crew Change	0:00	0:00	2:30	0.27%
WoW - Wind speed - drilling operations	2:30	0:00	92:50	9.92%
Standby Current Speed - Casing	1:45	0:00	14:15	1.52%
Standby Wave Height - Vessel Move	11:15	0:00	11:15	1.20%
Total	24:00	202:00	935:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	29.1893	Days	64.8651%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	28.0000	N°	62.2222%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Karl Routledge	Lab Technician (Days)	12
John Davidson	SPL Representative	12
Stephen Foster	Client Rep (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Nick Buzzard	HSE Advisor	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick McDonnell	Client Rep (nights)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2169
Fugro	20	240	/	9780
Total	25	300	/	11949

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

The 20" conduct casing movement was unexpected. Scour to +2.0m in a short period is considered unusual by both Fugro and SSE but could not be ruled out. Another 20" casing deployment into the same hole could lack lateral stability. Abandon hole agreed as safest option with information available on board at this time. Fugro engineering dept. to investigate further.

1 HOC - request for more things in project welfare room, games etc for weather down.

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
28/06/2022

Client Representative



Stephen Forster
Client Representative
28/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	40	**Date:**	28/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH16 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	75
Environmental Incident	0	/	0
Shift Handover Talk	2	/	77
Permit to Work	4	/	102
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	61
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

WOW. Winds too high for deck work during day shift.

Planned Work for Next 24 Hours

Waterjet Neptune legs, move from BH16 to BH10 completing a CTV operation with Adventurer when Neptune's hull is in water

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.2	n/a	n/a	meter on deck in 3.3m Hs
Wave height (Hs)	m	2.0	3.3	3	2.5	waves on site are above forecast
Wind direction	Degrees	S	S	SSW	SSW	
Wind speed (m/s)	m/s	20+	20+	15	12	wind on site above forecast

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
28/0600	S	14	18	0.9	S	2.0	7	-	0.0	-	2.2	3.6
28/0900	S	15	19	0.9	S	2.3	7	-	0.0	-	2.5	4.1
28/1200	S	14	19	0.9	S	2.4	7	SSW	0.1	16	2.6	4.3
28/1500	S	13	17	0.8	S	2.2	7	SSW	0.1	16	2.4	3.9
28/1800	SSW	11	14	0.7	S	1.8	7	SSW	0.1	16	2.0	3.3
28/2100	SSW	9	11	0.6	S	1.5	7	SSW	0.1	16	1.6	2.7
29/0000	SSW	7	9	0.3	S	1.2	7	SSW	0.1	16	1.3	2.1
29/0300	WSW	5	6	0.1	S	1.1	6	SSW	0.1	16	1.1	1.8
29/0600	WSW	3	4	0.0	S	0.9	6	SSW	0.1	16	0.9	1.5
29/0900	S	4	6	0.1	S	0.8	6	SSW	0.1	16	0.8	1.3
29/1200	S	6	8	0.2	S	0.7	6	SSW	0.1	16	0.7	1.1
29/1500	S	7	9	0.3	S	0.6	6	SSW	0.1	16	0.7	1.2
29/1800	S	6	7	0.1	S	0.6	6	SSW	0.1	16	0.6	1.0
29/2100	W	3	3	0.0	S	0.5	6	SSW	0.1	16	0.5	0.9
30/0000	NW	5	6	0.1	S	0.5	6	SSW	0.1	15	0.5	0.8
30/0300	NNW	6	8	0.2	S	0.4	6	SSW	0.1	15	0.5	0.8
30/0600	NW	6	8	0.2	S	0.4	6	SSW	0.1	15	0.4	0.7
30/0900	WNW	4	5	0.1	S	0.3	6	SSW	0.1	15	0.3	0.6
30/1200	WSW	4	5	0.1	SSW	0.3	5	SSW	0.1	14	0.3	0.6
30/1500	SSW	7	10	0.4	SSW	0.3	5	SSW	0.1	14	0.5	0.8
30/1800	SSW	9	12	0.5	SSW	0.3	5	SSW	0.1	14	0.6	1.0
30/2100	W	5	7	0.1	SSW	0.4	5	SSW	0.1	14	0.4	0.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Standby Wave Height - Vessel Move	WOW for vessel move. Forecast swell prevents move
06:45	07:00	00:15	Shift Handover Talk	Shift handover
07:00	07:20	00:20	Standby Wave Height - Vessel Move	Captain shuts deck in high winds, all crew are off deck
07:20	13:30	06:10	Standby Wave Height - Vessel Move	Deck closed in high winds
13:30	18:45	05:15	Standby Wave Height - Vessel Move	Deck open, weather still beyond limits for crane.
18:45	19:00	00:15	Shift Handover Talk	Shift handover / night shift sign onto PTW's
19:00	24:00	05:00	Standby Wave Height - Vessel Move	Waiting for swell to pass and wind to drop

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	11:30	1.20%
Pre-Move Prep	0:00	0:00	23:30	2.45%
MMO Pre-Start Watch	0:00	0:00	0:50	0.09%
DEME - Vessel Operations	0:00	0:00	46:55	4.89%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.50%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.30%
Fuel up/Wash Down/Break	0:00	0:00	42:05	4.38%
Geobor NCD	0:00	0:00	82:22	8.58%
Fugro Downtime	0:00	0:00	3:05	0.32%
Advance/Washbore 7" casing	0:00	0:00	7:50	0.82%
Shift Handover Talk	0:30	0:00	12:55	1.35%
Offshore Resupply	0:00	0:00	2:15	0.23%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.69%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	1.83%
Mobilisation	0:00	168:00	208:25	21.72%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.18%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.19%
Transit between BH	0:00	0:00	11:45	1.22%
Transit from Falmouth to Site	0:00	34:00	44:45	4.66%
Run-in Conductor Casing	0:00	0:00	14:25	1.50%
Vibrohammer Operations	0:00	0:00	9:05	0.95%
Run-in 7" Casing	0:00	0:00	7:40	0.80%
Run-in Geobor Casing	0:00	0:00	5:10	0.54%
Push Sampling	0:00	0:00	71:54	7.49%
Downhole Hammer Sampling	0:00	0:00	14:19	1.49%
Geobor Coring	0:00	0:00	60:45	6.33%
CPT Operations	0:00	0:00	26:35	2.77%
Wireline Geophys	0:00	0:00	31:55	3.33%
Trip-out Geobor Casing	0:00	0:00	4:15	0.44%
Trip-out 7" Casing	0:00	0:00	5:55	0.62%
Trip-out Conductor Casing	0:00	0:00	10:35	1.10%
Offshore Crew Change	0:00	0:00	2:30	0.26%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	9.67%
Standby Current Speed - Casing	0:00	0:00	14:15	1.48%
Standby Wave Height - Vessel Move	23:30	0:00	34:45	3.62%
Total	24:00	202:00	959:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	30.1893	Days	67.0873%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	29.0000	N°	64.4444%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Ian Milward	Project Engineer (Nights)	12
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Wouter Zuijderduijn	Client Rep (days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Karl Routledge	Lead Geotechnical Engineer	12
John Davidson	SPL Representative	12
Stephen Forster	Client Rep (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	6	72	/	2237
Fugro	21	252	/	10035
Total	27	324	/	12272

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Weather observed to be above forecast again for wind and swell. We would have been beyond the limits of the 3.0m casing had we continued on BH16 with waves +3.3m hs. Largest capping waves coincided with higher current flow @ 13:00 - 14:00

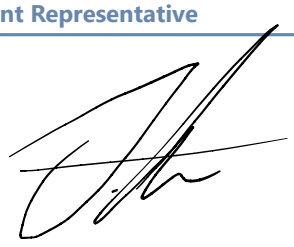
Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
28/06/2022

Client Representative



Stephen Forster
Client Representative
28/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	41	**Date:**	29/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH10 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	79
Environmental Incident	0	/	0
Shift Handover Talk	2	/	79
Permit to Work	4	/	106
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	61
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

Vessel move from BH16 to BH10, CTV ops, Run 20" casing and start drilling

Planned Work for Next 24 Hours

Drilling Ops at BH10, food resupply by CTV

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.2	0.4	0.3	0.2	
Wave height (Hs)	m	1.2	1.0	0.8	0.4	
Wind direction	Degrees	S	S	SSW	SSW	
Wind speed (m/s)	m/s	11	11	9	6	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
29/0600	SSW	5	7	0.1	S	1.1	7	SSW	0.1	16	1.1	1.9
29/0900	S	5	7	0.1	S	1.0	7	SSW	0.1	16	1.0	1.7
29/1200	SSW	6	7	0.2	S	0.9	7	SSW	0.1	16	0.9	1.5
29/1500	S	7	9	0.3	S	0.8	7	SSW	0.1	16	0.9	1.5
29/1800	S	5	6	0.1	S	0.7	7	SSW	0.1	16	0.7	1.2
29/2100	W	3	4	0.1	S	0.6	6	SSW	0.1	16	0.6	1.0
30/0000	WNW	3	4	0.1	S	0.5	6	SSW	0.1	15	0.5	0.9
30/0300	NW	3	4	0.1	S	0.4	6	SSW	0.1	15	0.4	0.7
30/0600	WNW	3	4	0.1	S	0.4	6	SSW	0.1	15	0.4	0.7
30/0900	W	3	4	0.1	S	0.3	6	SSW	0.1	13	0.3	0.5
30/1200	S	5	7	0.1	SSW	0.3	6	S	0.1	12	0.3	0.6
30/1500	S	8	10	0.4	SSW	0.3	6	S	0.1	12	0.5	0.9
30/1800	SSW	7	9	0.3	SSW	0.3	6	S	0.1	13	0.5	0.8
30/2100	W	6	7	0.2	SSW	0.4	6	SSW	0.1	15	0.4	0.7
01/0000	WSW	5	6	0.1	SSW	0.4	5	SSW	0.1	15	0.4	0.7
01/0300	W	4	6	0.1	SSW	0.3	5	SSW	0.1	15	0.3	0.6
01/0600	WSW	5	6	0.1	SSW	0.3	5	S	0.1	11	0.3	0.6
01/0900	SSW	6	7	0.4	SSW	0.2	5	-	0.0	-	0.5	0.8
01/1200	SSW	9	11	0.6	SSW	0.3	5	-	0.0	-	0.7	1.1
01/1500	SSW	10	13	0.7	S	0.6	6	-	0.0	-	0.9	1.5
01/1800	SSW	10	13	0.7	S	0.7	7	-	0.0	-	1.0	1.7
01/2100	SSW	10	13	0.7	S	0.7	7	-	0.0	-	1.0	1.7

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Standby Current Speed - Vessel Move	Waiting on vessel move. Wind dropping
00:30	01:45	01:15	Pre-Move Prep	Wind within crane limits. TBT on casing set up. Adjust casing length
01:45	03:15	01:30	Standby Current Speed - Vessel Move	Waiting for current for vessel move
03:15	05:10	01:55	DEME - Vessel Operations	TBT Leg jetting. Jack down & pull legs, Fugro crew assist leg jetting
05:10	06:45	01:35	Transit between BH	Move from BH16 to BH10
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / sign on PTW
07:00	07:55	00:55	DEME - Vessel Operations	BH10 Preload and jacking. CTV ladder transfer. 3 OFF / 2 ON
07:55	11:45	03:50	DEME - Vessel Operations	Barge is jacking and preloading
11:45	12:00	00:15	Post-Move Prep	Vessel at working height - prepare drill floor
12:00	12:30	00:30	Fuel up/Wash Down/Break	Current window too short to deploy casing. Vessel reports water depth approx 2.0m shallower than charted. Lunch stop
12:30	13:30	01:00	Post-Move Prep	Adjust 20" casing length for water depth
13:30	17:15	03:45	Standby Current Speed - Casing	Waiting on current to run 20"
17:15	18:45	01:30	Run-in Conductor Casing	Run conductor casing and surge in
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover / TBT / sign on PTW
19:00	20:50	01:50	Post-Move Prep	Prepare deck, crane on CPT beam, move pallets, casings and hammer
20:50	21:35	00:45	Run-in 7" Casing	Run 7" to mudline
21:35	21:55	00:20	Downhole Hammer Sampling	ML to 0.45m
21:55	22:10	00:15	Advance/Washbore 7" casing	Advance 7" ML to 0.5m
22:10	22:25	00:15	Downhole Hammer Sampling	0.5m to 0.95m
22:25	22:45	00:20	Advance/Washbore 7" casing	Advance 7" to 1.0m
22:45	23:05	00:20	Downhole Hammer Sampling	1.0m to 1.45m
23:05	23:20	00:15	Advance/Washbore 7" casing	Advance 7" to 1.5m
23:20	23:35	00:15	Downhole Hammer Sampling	1.5m to 1.95m
23:35	24:00	00:25	Advance/Washbore 7" casing	Advance 7" to 2.0m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	3:05	0:00	14:35	1.48%
Pre-Move Prep	1:15	0:00	24:45	2.52%
MMO Pre-Start Watch	0:00	0:00	0:50	0.08%
DEME - Vessel Operations	6:40	0:00	53:35	5.45%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.49%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.29%
Fuel up/Wash Down/Break	0:45	0:00	42:50	4.35%
Geobor NCD	0:00	0:00	82:22	8.37%
Fugro Downtime	0:00	0:00	3:05	0.31%
Advance/Washbore 7" casing	1:15	0:00	9:05	0.92%
Shift Handover Talk	0:15	0:00	13:10	1.34%
Offshore Resupply	0:00	0:00	2:15	0.23%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.68%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.79%
Mobilisation	0:00	168:00	208:25	21.19%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.18%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.13%
Transit between BH	1:35	0:00	13:20	1.36%
Transit from Falmouth to Site	0:00	34:00	44:45	4.55%
Run-in Conductor Casing	1:30	0:00	15:55	1.62%
Vibrohammer Operations	0:00	0:00	9:05	0.92%
Run-in 7" Casing	0:45	0:00	8:25	0.86%
Run-in Geobor Casing	0:00	0:00	5:10	0.53%
Push Sampling	0:00	0:00	71:54	7.31%
Downhole Hammer Sampling	1:10	0:00	15:29	1.57%
Geobor Coring	0:00	0:00	60:45	6.18%
CPT Operations	0:00	0:00	26:35	2.70%
Wireline Geophys	0:00	0:00	31:55	3.24%
Trip-out Geobor Casing	0:00	0:00	4:15	0.43%
Trip-out 7" Casing	0:00	0:00	5:55	0.60%
Trip-out Conductor Casing	0:00	0:00	10:35	1.08%
Offshore Crew Change	0:00	0:00	2:30	0.25%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	9.44%
Standby Current Speed - Vessel Move	2:00	0:00	2:00	0.20%
Standby Current Speed - Casing	3:45	0:00	18:00	1.83%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.53%
Total	24:00	202:00	983:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	31.1893	Days	69.3096%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	30.0000	N°	66.6667%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
John Davidson	SPL Representative	2
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Nick McDonnell	Client Rep (nights)	9
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	5

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	7	64	/	2301
Fugro	20	240	/	10275
Total	27	304	/	12576

Lost & Damaged

Deliverables

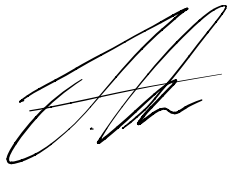
Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

John Davidson & Nick McDonnell (SSE) + 1 x DEME Crew Offsign
Liam Whittles (SSE) & Richard Tidmarsh (Fugro) Onsign
Karl Routledge offsigns for Fugro and onsigns as SSE Rep
CTV was unable to scout BH10 due to high waves on 28th and lack of time on morning of 29th

Client Representative Comments

Fugro Representative	Client Representative
	
James Hills Nearshore Project Manager 30/06/2022	Stephen Forster Client Representative 30/06/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	42	**Date:**	30/06/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH10 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	83
Environmental Incident	0	/	0
Shift Handover Talk	2	/	81
Permit to Work	4	/	110
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	61
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

1 x Covid case onboard is DEME crew member. Quarantined to cabin with regular checks. All ships & project crew tested negative with LFT tests & nobody onboard presents with symptoms. Next LFT test will be Saturday

Activities performed these 24 hours

Drilling Ops at BH10, food resupply by CTV

Planned Work for Next 24 Hours

Continue Drilling Ops

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.2	0.4	0.3	0.2	
Wave height (Hs)	m	0.2	0.2	0.2	0.2	observation. Northstar down
Wind direction	Degrees	W	SSE	SS	W	
Wind speed (m/s)	m/s	5	4	3	2	

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
30/0600	W	4	5	0.1	S	0.4	6	SSW	0.1	15	0.4	0.7
30/0900	W	3	4	0.1	S	0.4	6	SSW	0.1	15	0.4	0.6
30/1200	SSE	5	6	0.1	SSW	0.3	6	SSW	0.1	15	0.3	0.6
30/1500	S	7	9	0.2	SSW	0.2	6	SSW	0.1	15	0.3	0.5
30/1800	SW	7	9	0.3	SSW	0.2	6	SSW	0.1	15	0.4	0.7
30/2100	W	6	7	0.2	SSW	0.4	6	SSW	0.1	15	0.4	0.7
01/0000	WNW	6	8	0.2	SSW	0.3	5	SSW	0.1	15	0.4	0.6
01/0300	W	5	7	0.1	SSW	0.3	5	SSW	0.1	15	0.4	0.6
01/0600	W	5	6	0.1	SSW	0.3	5	SSW	0.1	15	0.3	0.6
01/0900	SW	6	8	0.4	SSW	0.2	5	-	0.0	-	0.4	0.7
01/1200	SSW	9	12	0.5	SSW	0.3	5	-	0.0	-	0.6	1.0
01/1500	SSW	11	15	0.7	SSW	0.3	5	-	0.0	-	0.8	1.3
01/1800	SSW	12	16	0.8	SSW	0.4	5	-	0.0	-	0.9	1.5
01/2100	SSW	11	15	0.8	SSW	0.6	5	-	0.0	-	1.0	1.6
02/0000	SW	9	12	0.6	SSW	0.7	5	SSW	0.1	13	0.9	1.5
02/0300	WSW	7	9	0.4	S	0.8	5	SSW	0.1	13	0.9	1.5
02/0600	SW	6	8	0.4	S	0.7	5	SSW	0.1	13	0.8	1.3
02/0900	SSW	7	9	0.5	S	0.6	5	SSW	0.1	13	0.8	1.3
02/1200	SSW	7	9	0.5	S	0.5	5	SSW	0.1	13	0.7	1.2
02/1500	W	6	7	0.3	S	0.6	5	SSW	0.1	12	0.7	1.2
02/1800	WSW	5	6	0.2	S	0.7	5	SSW	0.1	13	0.7	1.1
02/2100	W	5	6	0.1	S	0.7	5	SSW	0.1	13	0.7	1.1

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:20	00:20	Downhole Hammer Sampling	2.00m to 2.45m
00:20	00:50	00:30	Advance/Washbore 7" casing	Advance 7" to 2.5m
00:50	01:15	00:25	Downhole Hammer Sampling	2.5m 2.95m
01:15	01:30	00:15	Advance/Washbore 7" casing	Advance 7" to 3.0m. 20" casing follows on to 3.2m
01:30	02:00	00:30	CPT Operations	Set up for CPT operations. Fit and plumb rams
02:00	02:50	00:50	CPT Operations	Run in geobor and set up for CPT
02:50	03:30	00:40	CPT Operations	CPT - 3.0m to 4.5m
03:30	03:45	00:15	Geobor NCD	Open hole 3.0m to 3.5m
03:45	03:55	00:10	Push Sampling	3.5m to 4.5m Thick wall & catcher. Over sample CPT
03:55	04:10	00:15	Geobor NCD	3.0m to 4.5m
04:10	04:55	00:45	Advance/Washbore 7" casing	7" casing is advancing past geobor to 5.1m. Pull back to 4.5m and clamp.
04:55	05:15	00:20	CPT Operations	CPT - 4.5m to 6.0m
05:15	05:50	00:35	DEME - Vessel Operations	Bridge instructs stop all operations until lighting risk passes
05:50	06:05	00:15	Geobor NCD	4.5m to 5.0m
06:05	06:20	00:15	Push Sampling	5.0m to 6.0m Thick wall with catcher. Over sample CPT
06:20	06:45	00:25	Geobor NCD	5.0m to 6.0m
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / sign on PTW
07:00	07:20	00:20	Shift Handover Talk	TBT on drilling ops
07:20	07:50	00:30	Downhole Hammer Sampling	6.0m to 6.45m. Hole collapsing - mix and run pure bore
07:50	08:05	00:15	Geobor NCD	6.0m to 6.5m
08:05	08:20	00:15	Downhole Hammer Sampling	6.5m to 6.95m
08:20	08:30	00:10	Geobor NCD	6.5m to 7.0m
08:30	08:55	00:25	CPT Operations	CPT push 7.0m to 8.42m
08:55	09:05	00:10	Geobor NCD	7.0m to 7.5m
09:05	09:20	00:15	Push Sampling	7.5m to 8.5m. Thick wall & catcher. Over sample CPT
09:20	09:30	00:10	Geobor NCD	7.5m to 8.5m

Summary of Events

Begin	End	Duration	Type	Description
09:30	09:50	00:20	CPT Operations	CPT 5 - 8.5m to 10.0m
09:50	10:00	00:10	Geobor NCD	8.5m to 9.0m
10:00	10:15	00:15	Push Sampling	9.0m to 10.0m Thick wall and catcher. Over sample CPT.
10:15	10:25	00:10	Geobor NCD	9.0m to 10.0m
10:25	10:35	00:10	Push Sampling	10.0m to 10.5m Thin wall
10:35	10:55	00:20	Push Sampling	10.5m to 11.0m Thin Wall
10:55	11:10	00:15	Run-in Geobor Casing	Adjust geobore casing removing short lengths
11:10	11:25	00:15	Geobor NCD	10.0m to 11.0m
11:25	11:45	00:20	CPT Operations	CPT - 11.0m to 12.5m
11:45	12:00	00:15	Geobor NCD	11.0m to 11.5m
12:00	12:55	00:55	DEME - Vessel Operations	Captain informs DEME have 1 Covid case on board. Lateral flow test all day shift. All Fugro day shift are negative
12:55	13:10	00:15	Push Sampling	11.5m to 12.5m Thick wall & catcher. Over sample CPT
13:10	13:25	00:15	Geobor NCD	11.5m to 12.5m
13:25	13:45	00:20	CPT Operations	CPT - 12.5m to 14.0m
13:45	14:00	00:15	Geobor NCD	12.5m to 13.0m
14:00	14:10	00:10	Push Sampling	13.0m to 14.0m Thick wall & catcher. Over sample CPT
14:10	14:20	00:10	Geobor NCD	13.0m to 14.0m
14:20	14:35	00:15	Push Sampling	14.0m to 15.0m Thin wall
14:35	14:55	00:20	Geobor NCD	14.0m to 15.0m
14:55	15:05	00:10	Push Sampling	15.0 to 15.5m Thin wall
15:05	15:15	00:10	Push Sampling	15.5m to 16.0m Thin wall
15:15	15:30	00:15	Geobor NCD	15.0m to 16.0m
15:30	15:50	00:20	CPT Operations	CPT - 16.0m to 17.0m
15:50	16:05	00:15	Geobor NCD	16.0m to 16.5m
15:50	16:05	00:15	Geobor NCD	16.0m to 16.5m
16:05	16:15	00:10	Push Sampling	16.5m to 17.5m Thick wall & catcher. Over sample CPT
16:15	16:25	00:10	Geobor NCD	16.5m to 17.5m
16:25	16:35	00:10	Push Sampling	17.5m to 18.0m Thin wall
16:35	16:45	00:10	Push Sampling	18.0m to 18.5m Thin wall
16:45	17:00	00:15	Geobor NCD	17.5m to 18.5m
17:00	17:15	00:15	Push Sampling	18.5m to 18.8m Thin wall
17:15	17:35	00:20	Geobor NCD	18.5m to 19.0m
17:15	17:35	00:20	Geobor NCD	18.5m to 19.0m
17:35	18:05	00:30	Push Sampling	19.0m to 19.4m Thick wall & catcher
18:05	18:20	00:15	Geobor NCD	19.0m to 19.5m
18:20	18:45	00:25	CPT Operations	CPT - 19.5m to 21.0m
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / sign on PTW
19:00	19:25	00:25	DEME - Vessel Operations	All crew are now Lateral flow tested. All Fugro project crew have attended TBT on anti Covid measures
19:25	19:50	00:25	Geobor Over-Coring of Test	19.5m to 21.0m
19:50	20:20	00:30	Geobor Over-Coring of Test	21.0m to 22.5m
20:20	20:50	00:30	CPT Operations	CPT - 22.50m to 22.77m
20:50	21:15	00:25	Geobor Coring	22.5m to 24.0m
21:15	21:35	00:20	Geobor Coring	24.0m to 25.5m
21:35	22:00	00:25	CPT Operations	CPT - 25.5m to 26.85m
22:00	22:20	00:20	Geobor Coring	25.5m to 27.0m
22:20	23:20	01:00	Geobor Coring	27.0m to 28.5m Core slipped, retrieve 0.5m, core stuck in outer barrel, clear

Summary of Events

Begin	End	Duration	Type	Description
23:20	24:00	00:40	Geobor Coring	28.5m to 29.0m 0.5m core run to retrieve previously slipped core.

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.45%
Pre-Move Prep	0:00	0:00	24:45	2.46%
MMO Pre-Start Watch	0:00	0:00	0:50	0.08%
DEME - Vessel Operations	1:55	0:00	55:30	5.51%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.48%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.28%
Fuel up/Wash Down/Break	0:00	0:00	42:50	4.25%
Geobor NCD	5:50	0:00	88:12	8.75%
Fugro Downtime	0:00	0:00	3:05	0.31%
Advance/Washbore 7" casing	1:30	0:00	10:35	1.05%
Shift Handover Talk	0:50	0:00	14:00	1.39%
Offshore Resupply	0:00	0:00	2:15	0.22%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.66%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.74%
Mobilisation	0:00	168:00	208:25	20.67%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.17%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.08%
Transit between BH	0:00	0:00	13:20	1.32%
Transit from Falmouth to Site	0:00	34:00	44:45	4.44%
Run-in Conductor Casing	0:00	0:00	15:55	1.58%
Vibrohammer Operations	0:00	0:00	9:05	0.90%
Run-in 7" Casing	0:00	0:00	8:25	0.83%
Run-in Geobor Casing	0:15	0:00	5:25	0.54%
Push Sampling	3:40	0:00	75:34	7.50%
Downhole Hammer Sampling	1:30	0:00	16:59	1.68%
Geobor Over-Coring of Test	0:55	0:00	0:55	0.09%
Geobor Coring	2:45	0:00	63:30	6.30%
CPT Operations	5:25	0:00	31:45	3.15%
Wireline Geophys	0:00	0:00	31:55	3.17%
Trip-out Geobor Casing	0:00	0:00	4:15	0.42%
Trip-out 7" Casing	0:00	0:00	5:55	0.59%
Trip-out Conductor Casing	0:00	0:00	10:35	1.05%
Offshore Crew Change	0:00	0:00	2:30	0.25%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	9.21%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.20%
Standby Current Speed - Casing	0:00	0:00	18:00	1.79%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.45%
Total	24:35	202:00	1008:05	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	32.1893	Days	71.5318%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	31.0000	N°	68.8889%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2361
Fugro	20	240	/	10515
Total	25	300	/	12876

Lost & Damaged

Deliverables

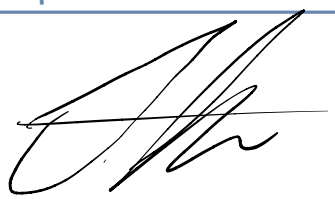
Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Northstar weather station went down yesterday - attempting a remote fix this morning

Client Representative Comments

Fugro Representative	Client Representative
	
James Hills Nearshore Project Manager 01/07/2022	Stephen Forster Client Representative 01/07/2022

DOME

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	43	**Date:**	01/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH10 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	87
Environmental Incident	0	/	0
Shift Handover Talk	2	/	83
Permit to Work	4	/	114
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	1	/	62
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

1 HOC- Covid safety. More hand-wash products needed. Closed with more items placed in wash areas

Activities performed these 24 hours

Drilling Ops at BH10

Planned Work for Next 24 Hours

Continue Drilling Ops at BH10. Send CTV to recce BH13

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	-	-	-	-	observation. Northstar down. Fix pending
Wave height (Hs)	m	0.2	0.2	0.2	0.2	observation. Northstar down
Wind direction	Degrees	W	SSW	SSW	SW	
Wind speed (m/s)	m/s	4	10	11	8	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
30/0600	W	4	5	0.1	S	0.4	6	SSW	0.1	15	0.4	0.7
30/0900	W	3	4	0.1	S	0.4	6	SSW	0.1	15	0.4	0.6
30/1200	SSE	5	6	0.1	SSW	0.3	6	SSW	0.1	15	0.3	0.6
30/1500	S	7	9	0.2	SSW	0.2	6	SSW	0.1	15	0.3	0.5
30/1800	SW	7	9	0.3	SSW	0.2	6	SSW	0.1	15	0.4	0.7
30/2100	W	6	7	0.2	SSW	0.4	6	SSW	0.1	15	0.4	0.7
01/0000	WNW	6	8	0.2	SSW	0.3	5	SSW	0.1	15	0.4	0.6
01/0300	W	5	7	0.1	SSW	0.3	5	SSW	0.1	15	0.4	0.6
01/0600	W	5	6	0.1	SSW	0.3	5	SSW	0.1	15	0.3	0.6
01/0900	SW	6	8	0.4	SSW	0.2	5	-	0.0	-	0.4	0.7
01/1200	SSW	9	12	0.5	SSW	0.3	5	-	0.0	-	0.6	1.0
01/1500	SSW	11	15	0.7	SSW	0.3	5	-	0.0	-	0.8	1.3
01/1800	SSW	12	16	0.8	SSW	0.4	5	-	0.0	-	0.9	1.5
01/2100	SSW	11	15	0.8	SSW	0.6	5	-	0.0	-	1.0	1.6
02/0000	SW	9	12	0.6	SSW	0.7	5	SSW	0.1	13	0.9	1.5
02/0300	WSW	7	9	0.4	S	0.8	5	SSW	0.1	13	0.9	1.5
02/0600	SW	6	8	0.4	S	0.7	5	SSW	0.1	13	0.8	1.3
02/0900	SSW	7	9	0.5	S	0.6	5	SSW	0.1	13	0.8	1.3
02/1200	SSW	7	9	0.5	S	0.5	5	SSW	0.1	13	0.7	1.2
02/1500	W	6	7	0.3	S	0.6	5	SSW	0.1	12	0.7	1.2
02/1800	WSW	5	6	0.2	S	0.7	5	SSW	0.1	13	0.7	1.1
02/2100	W	5	6	0.1	S	0.7	5	SSW	0.1	13	0.7	1.1

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:20	00:20	Geobor NCD	28.5m to 29.0m Core slipped, unable to retrieve. NCD & flush
00:20	01:20	01:00	CPT Operations	CPT - 29.0m to 29.29m
01:20	01:55	00:35	Downhole Hammer Sampling	29.0m to 29.3m shoe backed off down hole
01:55	02:20	00:25	Geobor Over-Coring of Test	29.0m to 29.5m Over core test to retrieve shoe, NCD and flush
02:20	02:45	00:25	CPT Operations	CPT - 29.5m to 29.81m
02:45	03:55	01:10	Geobor Coring	29.5m to 31.0m. Slipped core, retrieved
03:55	04:25	00:30	CPT Operations	CPT - 31.0m to 32.5m
04:25	04:40	00:15	Geobor NCD	31.0m to 31.5m
04:40	05:00	00:20	Push Sampling	31.5m to 32.0m Thick wall & catcher
05:00	05:25	00:25	Geobor Over-Coring of Test	31.5m to 32.5m
05:25	05:55	00:30	CPT Operations	CPT - 32.5m to 34.0m
05:55	06:20	00:25	Geobor Over-Coring of Test	32.5m to 33.6m
06:20	06:45	00:25	Geobor Over-Coring of Test	33.6m to 34.5m
06:45	07:00	00:15	Fuel up/Wash Down/Break	Shift handover / TBT / sign on PTW
07:00	07:20	00:20	Shift Handover Talk	TBT Drilling ops
07:20	08:50	01:30	Geobor Coring	34.5m to 35.0m Core slipped. Make 3 attempts with fingers to recover.
08:50	09:00	00:10	Geobor NCD	34.5m to 35.0m
09:00	09:45	00:45	Geobor Coring	35.0m to 36.5m Core slipped, retrieve with long fingers
09:45	10:10	00:25	CPT Operations	CPT - 36.5m to 38.0m
10:10	10:25	00:15	Geobor NCD	36.5m to 37.0m
10:25	10:35	00:10	Push Sampling	37.0m to 38.0m Thick wall & catcher. Oversample CPT
10:35	10:50	00:15	Geobor NCD	37.0m to 38.0m
10:50	11:00	00:10	Push Sampling	38.0m to 38.4m Thin wall - damaged
11:00	11:15	00:15	Geobor NCD	38.0m to 38.5m
11:15	11:35	00:20	Push Sampling	38.5m to 38.6m Thick wall. Cobble damages tube. Client agrees 1.5m core run
11:35	12:15	00:40	Geobor Coring	38.5m to 40.0m

Summary of Events

Begin	End	Duration	Type	Description
12:15	12:45	00:30	Fuel up/Wash Down/Break	Break - Lunch
12:45	13:15	00:30	CPT Operations	CPT - 40.0m to 40.43m
13:15	13:35	00:20	Geobor Coring	40.0m to 41.0m
13:35	13:55	00:20	Push Sampling	41.0m to 41.1m Thin wall, no recovery - tube damaged
13:55	14:25	00:30	Geobor Coring	41.0m to 41.75m
14:25	14:50	00:25	Geobor Coring	41.75m to 42.5m
14:50	15:20	00:30	CPT Operations	CPT - 42.5m to 43.2m
15:20	15:35	00:15	Geobor Over-Coring of Test	42.5m to 43.5m
15:35	15:55	00:20	Geobor Coring	43.5m to 44.5m
15:55	16:20	00:25	Geobor Coring	44.5m to 45.0m
16:20	16:40	00:20	Geobor Coring	45.0m to 46.5m
16:40	16:55	00:15	Geobor Coring	46.5m to 48.0m
16:55	17:10	00:15	DEME - Vessel Operations	Barge reloads legs and levels deck
17:10	17:25	00:15	Geobor Coring	48.0m to 49.5m
17:25	18:00	00:35	CPT Operations	49.5m 50.8m
18:00	18:30	00:30	Geobor Over-Coring of Test	49.5m to 51.0m
18:30	18:45	00:15	Fuel up/Wash Down/Break	Fuel up
18:45	19:00	00:15	Fuel up/Wash Down/Break	Shift handover / TBT / sign on PTW
19:00	19:15	00:15	DEME - Vessel Operations	Vessel jacking. TBT on drilling ops
19:15	19:30	00:15	MMO Pre-Start Watch	Waiting on MMO clearance to start
19:30	20:10	00:40	Geobor Coring	51.5m to 52.5m Retrieve slipped core with short fingers. Bedrock @ 51.5m
20:10	20:45	00:35	Geobor Coring	52.5m to 54.0m Core snagged liner, pump out
20:45	21:15	00:30	Geobor Coring	54.0m to 55.5m
21:15	21:35	00:20	DEME - Vessel Operations	Vessel jacking
21:35	22:00	00:25	Geobor Coring	55.5m to 56.5m
22:00	22:25	00:25	Geobor Coring	56.5m to 58.0m
22:25	22:50	00:25	Geobor Coring	58.0m to 59.5m
22:50	23:10	00:20	Geobor Coring	59.5m to 60.5m
23:10	23:35	00:25	Geobor Coring	60.5m to 61.5m
23:35	24:00	00:25	Geobor Coring	61.5m to 62.5m Client rep confirms EOH

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.41%
Pre-Move Prep	0:00	0:00	24:45	2.40%
MMO Pre-Start Watch	0:15	0:00	1:05	0.10%
DEME - Vessel Operations	0:50	0:00	56:20	5.46%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.47%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.27%
Fuel up/Wash Down/Break	1:15	0:00	44:05	4.27%
Geobor NCD	1:30	0:00	89:42	8.69%
Fugro Downtime	0:00	0:00	3:05	0.30%
Advance/Washbore 7" casing	0:00	0:00	10:35	1.03%
Shift Handover Talk	0:20	0:00	14:20	1.39%
Offshore Resupply	0:00	0:00	2:15	0.22%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.65%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.70%
Mobilisation	0:00	168:00	208:25	20.19%

Activity Summary

Activity	Today	Planned	To Date	Progress
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.17%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	2.03%
Transit between BH	0:00	0:00	13:20	1.29%
Transit from Falmouth to Site	0:00	34:00	44:45	4.34%
Run-in Conductor Casing	0:00	0:00	15:55	1.54%
Vibrohammer Operations	0:00	0:00	9:05	0.88%
Run-in 7" Casing	0:00	0:00	8:25	0.82%
Run-in Geobor Casing	0:00	0:00	5:25	0.52%
Push Sampling	1:20	0:00	76:54	7.45%
Downhole Hammer Sampling	0:35	0:00	17:34	1.70%
Geobor Over-Coring of Test	2:25	0:00	3:20	0.32%
Geobor Coring	11:05	0:00	74:35	7.23%
CPT Operations	4:25	0:00	36:10	3.50%
Wireline Geophys	0:00	0:00	31:55	3.09%
Trip-out Geobor Casing	0:00	0:00	4:15	0.41%
Trip-out 7" Casing	0:00	0:00	5:55	0.57%
Trip-out Conductor Casing	0:00	0:00	10:35	1.03%
Offshore Crew Change	0:00	0:00	2:30	0.24%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.99%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.19%
Standby Current Speed - Casing	0:00	0:00	18:00	1.74%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.37%
Total	24:00	202:00	1032:05	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	33.1893	Days	73.7540%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	32.0000	N°	71.1111%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12

Day Shift

Employee Name	Job Title	Hours Worked
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2421
Fugro	20	240	/	10755
Total	25	300	/	13176

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Due to continued damage to the cutting shoes of Shelby tubes, it has was deemed impractical to continue sampling with this method until ground conditions changed. The nature of the material (with pockets and lenses of sand, and gravels causing disturbance during coring) has also impaired recovery in rotary cores, in some cases to below 50% even with a reduction to 0.75m runs. Fugro did not believe it was beneficial to reduce run lengths below 0.75m as this is just as likely to have material washed out from the barrel as they are being recovered to deck.

Northstar fixed in afternoon

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
02/07/2022

Client Representative



Stephen Forster
Client Representative
02/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	44	**Date:**	02/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH10 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	91
Environmental Incident	0	/	0
Shift Handover Talk	2	/	85
Permit to Work	4	/	118
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	62
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

LFT test of all project and vessel crew is negative

Activities performed these 24 hours

Wireline ops at BH10, pull casing & prepare for move

Planned Work for Next 24 Hours

Move to BH13. Run casing on BH13, set up for drilling. Drilling and testing

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.2	0.2	0.2	0.2	
Wave height (Hs)	m	0.8	0.7	0.7	0.6	
Wind direction	Degrees	W	SSW	WSW	W	
Wind speed (m/s)	m/s	7	6	6	6	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
02/0600	WSW	7	9	0.4	S	0.7	5	SSW	0.1	13	0.8	1.4
02/0900	SW	6	8	0.4	S	0.6	5	SSW	0.1	13	0.8	1.3
02/1200	S	7	9	0.5	S	0.5	5	SSW	0.1	13	0.7	1.2
02/1500	SSW	6	8	0.4	S	0.5	5	SSW	0.1	12	0.7	1.1
02/1800	WSW	6	7	0.3	S	0.6	5	SSW	0.1	13	0.7	1.2
02/2100	W	6	7	0.2	S	0.5	5	SSW	0.1	13	0.5	0.9
03/0000	W	6	7	0.2	S	0.4	5	SSW	0.1	12	0.4	0.7
03/0300	NW	6	7	0.3	S	0.4	5	SSW	0.1	12	0.5	0.9
03/0600	NW	5	7	0.2	S	0.3	4	SSW	0.1	12	0.4	0.6
03/0900	NNW	5	6	0.2	S	0.2	4	SSW	0.2	12	0.3	0.6
03/1200	SE	4	5	0.1	S	0.2	4	SSW	0.2	12	0.3	0.5
03/1500	SSW	4	5	0.1	SSW	0.2	4	SSW	0.1	12	0.3	0.4
03/1800	SSW	5	6	0.2	SSW	0.2	4	SSW	0.1	12	0.3	0.5
03/2100	W	5	7	0.3	SSW	0.2	4	SSW	0.1	12	0.4	0.6
04/0000	W	6	8	0.3	SSW	0.2	4	SSW	0.1	12	0.4	0.7
04/0300	WNW	6	8	0.3	SSW	0.2	4	SSW	0.1	12	0.4	0.7
04/0600	WSW	6	7	0.2	SSW	0.2	4	-	0.0	-	0.3	0.4
04/0900	W	5	7	0.1	SSW	0.2	4	-	0.0	-	0.2	0.4
04/1200	W	5	6	0.1	SSW	0.2	4	-	0.0	-	0.2	0.4
04/1500	SSW	4	5	0.1	SSW	0.3	4	-	0.0	-	0.3	0.5
04/1800	SW	4	5	0.1	SSW	0.3	4	-	0.0	-	0.3	0.5
04/2100	NW	5	6	0.1	SSW	0.2	4	-	0.0	-	0.2	0.4

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:40	00:40	Wireline Geophys	Flush hole. Lunch
00:40	01:25	00:45	Wireline Geophys	Pull geobore back to 43.1m and prepare for logging
01:25	02:55	01:30	Wireline Geophys	Set up and run caliper
02:55	03:55	01:00	Wireline Geophys	Run ABI
03:55	05:45	01:50	Wireline Geophys	Run P & S
05:45	06:15	00:30	Wireline Geophys	Pull geobore to 13.1m
06:15	06:45	00:30	Wireline Geophys	Run Caliper
06:45	07:00	00:15	Advance/Washbore 7" casing	Shift handover / TBT / Sign PTW
07:00	07:25	00:25	DEME - Vessel Operations	Covid testing of all project team with LFT. All tests read negative
07:25	10:00	02:35	Wireline Geophys	Continue testing
10:00	12:00	02:00	Wireline Geophys	Testing completed to 13.1m, pull Geobor to deck and start logging back to 7" casing at 5.1m
12:00	12:30	00:30	Fuel up/Wash Down/Break	Lunch
12:30	13:20	00:50	Wireline Geophys	Hole logged to 5.1m, pull 7" inside 20" & run caliper. Hole stays open. Continue logging to 3.2m
13:20	15:20	02:00	Trip-out 7" Casing	Pull 7" to deck, un-plumb CPT rams & secure deck equipment for transit
15:20	18:45	03:25	Standby Current Speed - Casing	Waiting on current to pull 20" casing
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign PTW
19:00	19:20	00:20	Shift Handover Talk	TBT with night shift on casing pull operation
19:20	20:30	01:10	Trip-out Conductor Casing	Pull 20" casing to deck
20:30	24:00	03:30	Pre-Move Prep	Adjust 20" for water depth @ BH13. Secure deck equipment for move

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.38%
Pre-Move Prep	3:30	0:00	28:15	2.68%
MMO Pre-Start Watch	0:00	0:00	1:05	0.10%
DEME - Vessel Operations	0:25	0:00	56:45	5.38%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.46%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.27%
Fuel up/Wash Down/Break	0:30	0:00	44:35	4.22%
Geobor NCD	0:00	0:00	89:22	8.46%
Fugro Downtime	0:00	0:00	3:05	0.29%
Advance/Washbore 7" casing	0:15	0:00	10:50	1.03%
Shift Handover Talk	0:35	0:00	14:55	1.41%
Offshore Resupply	0:00	0:00	2:15	0.21%
Fugro Downtime - Breakdown	0:00	0:00	6:40	0.63%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.67%
Mobilisation	0:00	168:00	208:25	19.74%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.17%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.99%
Transit between BH	0:00	0:00	13:20	1.26%
Transit from Falmouth to Site	0:00	34:00	44:45	4.24%
Run-in Conductor Casing	0:00	0:00	15:55	1.51%
Vibrohammer Operations	0:00	0:00	9:05	0.86%
Run-in 7" Casing	0:00	0:00	8:25	0.80%
Run-in Geobor Casing	0:00	0:00	5:25	0.51%
Push Sampling	0:00	0:00	76:54	7.28%
Downhole Hammer Sampling	0:00	0:00	17:34	1.66%
Geobor Over-Coring of Test	0:00	0:00	3:20	0.32%
Geobor Coring	0:00	0:00	74:35	7.06%
CPT Operations	0:00	0:00	36:10	3.43%
Wireline Geophys	12:10	0:00	44:05	4.18%
Trip-out Geobor Casing	0:00	0:00	4:15	0.40%
Trip-out 7" Casing	2:00	0:00	7:55	0.75%
Trip-out Conductor Casing	1:10	0:00	11:45	1.11%
Offshore Crew Change	0:00	0:00	2:30	0.24%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.79%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.19%
Standby Current Speed - Casing	3:25	0:00	21:25	2.03%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.29%
Total	24:00	202:00	1055:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	34.1893	Days	75.9762%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	33.0000	N°	73.3333%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2481
Fugro	20	240	/	10995
Total	25	300	/	13476

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
03/07/2022

Client Representative



Stephen Forster
Client Representative
03/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	45	**Date:**	03/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH13 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	95
Environmental Incident	0	/	0
Shift Handover Talk	2	/	87
Permit to Work	4	/	122
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	62
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Night move and jacking was extremely noisy so many crew reported disrupted sleep

Activities performed these 24 hours

Move from BH10 to BH13. Run casing and commence drilling ops

Planned Work for Next 24 Hours

BH13 Drilling and testing

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.8	1.0	1.2	1.0	
Wave height (Hs)	m	0.7	0.7	0.7	0.6	
Wind direction	Degrees	WSW	S	WSW	W	
Wind speed (m/s)	m/s	7	6	6	6	

48 Hours Forecast

DOME

Summary of Events

Begin	End	Duration	Type	Description
00:00	03:25	03:25	DEME - Vessel Operations	Jack down and move from BH10 to BH13
03:25	06:45	03:20	DEME - Vessel Operations	BH13 Jacking and preloading
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign PTW
07:00	07:45	00:45	Standby Current Speed - Casing	Wait on current to run casing. TBT on days operations.
07:45	09:15	01:30	Run-in Conductor Casing	Run in conductor casing. DTM is 54.5m, LAT 39m. Casing set in 2.3m
09:15	12:00	02:45	Run-in 7" Casing	Set up CPT rams, lift pallets and run in 7" casing
12:00	13:00	01:00	Fuel up/Wash Down/Break	Extended lunch break to rest crew.
13:00	13:45	00:45	Push Sampling	0.0m to 0.5m Thick wall with catcher
13:45	14:00	00:15	Run-in 7" Casing	Advance 7"
14:00	15:00	01:00	Fugro Downtime - Breakdown	Jean Lutz cable snapped. Lay mast down and repair
15:00	15:20	00:20	Run-in 7" Casing	Advance 7" to 0.5m
15:20	15:50	00:30	Push Sampling	0.5m to 1.0m Thick wall with catcher
15:50	16:05	00:15	Downhole Hammer Sampling	0.5m to 0.95m
16:05	16:15	00:10	Run-in 7" Casing	Advance 7"
16:15	16:30	00:15	Downhole Hammer Sampling	1.0m to 1.45m
16:30	16:40	00:10	Run-in 7" Casing	Advance 7"
16:40	16:50	00:10	Downhole Hammer Sampling	1.5m to 1.95m
16:50	17:10	00:20	Run-in 7" Casing	Advance 7"
17:10	17:50	00:40	Run-in Geobor Casing	Prepare deck for Geobor, move casings
17:50	18:30	00:40	Run-in Geobor Casing	Run in geobor to 2.0m
18:30	18:50	00:20	CPT Operations	CPT 2.5m - 4.0m Drillers change out Jean Lutz box
18:50	19:00	00:10	Shift Handover Talk	Shift handover / TBT / Sign PTW
19:00	20:00	01:00	Fugro Downtime - Breakdown	Complete set up of replacement Jean Lutz box
20:00	20:25	00:25	Geobor NCD	2.5m to 3.0m
20:25	20:40	00:15	Push Sampling	3.0m to 4.0m Thick wall & catcher
20:40	20:51	00:11	Geobor NCD	3.0m to 4.0m
20:51	21:20	00:29	Push Sampling	4.0m to 4.5m Thin walled
21:20	21:40	00:20	Geobor NCD	4.0m to 4.5m
21:40	22:00	00:20	Push Sampling	4.5m to 5.0m Thin walled & catcher
22:00	22:20	00:20	Geobor NCD	4.5m to 5.0m
22:20	22:40	00:20	CPT Operations	CPT - 5.0m to 5.6m
22:40	22:55	00:15	Geobor NCD	5.0m to 5.5m
22:55	23:10	00:15	Push Sampling	5.5m to 6.3m Thick walled & catcher
23:10	23:25	00:15	Geobor NCD	5.5m to 6.5m
23:25	23:45	00:20	CPT Operations	6.5m to 8.0m Tool is difficult to delatch
23:45	24:00	00:15	Geobor NCD	6.5m to 7.0m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.35%
Pre-Move Prep	0:00	0:00	28:15	2.62%
MMO Pre-Start Watch	0:00	0:00	1:05	0.10%
DEME - Vessel Operations	6:45	0:00	63:30	5.88%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.45%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.26%
Fuel up/Wash Down/Break	1:00	0:00	45:35	4.22%
Geobor NCD	2:01	0:00	91:23	8.46%
Fugro Downtime	0:00	0:00	3:05	0.29%

Activity Summary

Activity	Today	Planned	To Date	Progress
Advance/Washbore 7" casing	0:00	0:00	10:50	1.00%
Shift Handover Talk	0:25	0:00	15:20	1.42%
Offshore Resupply	0:00	0:00	2:15	0.21%
Fugro Downtime - Breakdown	2:00	0:00	8:40	0.80%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.63%
Mobilisation	0:00	168:00	208:25	19.30%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.16%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.94%
Transit between BH	0:00	0:00	13:20	1.23%
Transit from Falmouth to Site	0:00	34:00	44:45	4.14%
Run-in Conductor Casing	1:30	0:00	17:25	1.61%
Vibrohammer Operations	0:00	0:00	9:05	0.84%
Run-in 7" Casing	4:00	0:00	12:25	1.15%
Run-in Geobor Casing	1:20	0:00	6:45	0.63%
Push Sampling	2:34	0:00	79:28	7.36%
Downhole Hammer Sampling	0:40	0:00	18:14	1.69%
Geobor Over-Coring of Test	0:00	0:00	3:20	0.31%
Geobor Coring	0:00	0:00	74:35	6.91%
CPT Operations	1:00	0:00	37:10	3.44%
Wireline Geophys	0:00	0:00	44:05	4.08%
Trip-out Geobor Casing	0:00	0:00	4:15	0.39%
Trip-out 7" Casing	0:00	0:00	7:55	0.73%
Trip-out Conductor Casing	0:00	0:00	11:45	1.09%
Offshore Crew Change	0:00	0:00	2:30	0.23%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.60%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.19%
Standby Current Speed - Casing	0:45	0:00	22:10	2.05%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.22%
Total	24:00	202:00	1079:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.9167	35.1060	Days	78.0133%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	34.0000	N°	75.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12

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Day Shift

Employee Name	Job Title	Hours Worked
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2541
Fugro	20	240	/	11235
Total	25	300	/	13776

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Weather upload function in DPR is not working

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
03/07/2022

Client Representative



Stephen Forster
Client Representative
03/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	46	**Date:**	04/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH13 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	99
Environmental Incident	0	/	0
Shift Handover Talk	2	/	89
Permit to Work	4	/	126
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	2	/	64
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

2 HOC - 1. Crew are doing long rotations 2. Good housekeeping in Lab

Activities performed these 24 hours

BH13 drilling ops

Planned Work for Next 24 Hours

BH13 Drilling and testing, CTV transfer off - 1 pax

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.8	1.0	10.9	1.0	
Wave height (Hs)	m	0.3	0.2	0.3	0.2	
Wind direction	Degrees	WSW	WSW	NW	WNW	
Wind speed (m/s)	m/s	7	6	6	6	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
04/0600	WSW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/0900	W	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1200	WSW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1500	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
04/1800	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/2100	WNW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0000	WNW	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0300	W	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0600	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0900	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1200	ESE	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1500	SSE	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/1800	S	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/2100	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.3
06/0000	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.2	0.3
06/0300	W	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.3	0.4
06/0600	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/0900	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1200	W	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1500	WNW	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1800	WNW	5	7	0.1	SSW	0.3	4	NNE	0.1	4	0.3	0.5
06/2100	N	5	6	0.1	SSW	0.2	4	NNE	0.2	4	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:05	00:05	Push Sampling	7.0m to 7.7m Thick wall & catcher
00:05	00:15	00:10	Geobor NCD	7.0m to 8.0m
00:15	00:45	00:30	Fuel up/Wash Down/Break	Food break
00:45	01:00	00:15	Push Sampling	8.0m to 8.5m Thick wall
01:00	01:20	00:20	Push Sampling	8.5m to 9.0m Thick wall
01:20	01:30	00:10	Geobor NCD	8.0m to 9.0m
01:30	01:55	00:25	CPT Operations	CPT - 9.0m to 10.5m
01:55	02:05	00:10	Geobor NCD	9.0m to 9.5m
02:05	02:15	00:10	Push Sampling	9.5m to 10.2m Thick wall & catcher
02:15	02:25	00:10	Geobor NCD	9.5m to 10.5m
02:25	02:50	00:25	CPT Operations	CPT - 10.5m to 12.0m
02:50	03:00	00:10	Geobor NCD	10.5m to 11.0m
03:00	03:10	00:10	Push Sampling	11.0m to 11.7m Thick wall & catcher
03:10	03:25	00:15	Geobor NCD	11.0m to 12.0m
03:25	03:40	00:15	Push Sampling	12.0m to 13.0m Thick wall & catcher
03:40	04:00	00:20	Geobor NCD	12.0m to 13.0m
04:00	04:15	00:15	Push Sampling	13.0m to 13.5m Thin wall
04:15	04:30	00:15	Push Sampling	13.5m to 14.0m Thin wall
04:30	04:45	00:15	Geobor NCD	13.0m to 14.0m
04:45	05:30	00:45	CPT Operations	14.0m to 15.5m
05:30	06:05	00:35	Geobor Coring	14.0m to 14.5m
06:05	06:45	00:40	Geobor Coring	14.5m to 15.5m
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / sign PTW
07:00	07:40	00:40	Push Sampling	15.5m to 16.0m Thin wall
07:40	07:50	00:10	Push Sampling	16.0m to 16.5m Thin wall
07:50	08:15	00:25	Geobor NCD	15.5m to 16.5m
08:15	08:25	00:10	Push Sampling	16.5m to 17.0m Thin wall

DOME

Summary of Events

Begin	End	Duration	Type	Description
08:25	08:35	00:10	Push Sampling	17.0m 17.5m Thin wall
08:35	08:50	00:15	Geobor NCD	16.5m 17.5m
08:50	09:15	00:25	CPT Operations	CPT - 17.5m to 19.0m
09:15	09:50	00:35	Geobor Over-Coring of Test	17.5m to 19.0m Core slipped, recover with long fingers
09:50	10:00	00:10	Push Sampling	19.0m to 19.5m
10:00	10:10	00:10	Push Sampling	19.5m to 20.0m Thin wall
10:10	10:30	00:20	Geobor NCD	19.0m to 20.0m
10:30	10:40	00:10	Push Sampling	20.0m to 20.5m Thin wall
10:40	10:50	00:10	Push Sampling	20.5m 21.0m Thin wall
10:50	11:05	00:15	Geobor NCD	20.0m to 21.0m
11:05	11:35	00:30	CPT Operations	CPT - 21.0m to 22.1m
11:35	11:50	00:15	Push Sampling	21.0m to 21.6m Over sample test. Thick wall & catcher
11:50	12:15	00:25	Geobor Over-Coring of Test	21.0m to 22.5m Over core test +0.5m
12:15	12:45	00:30	Fuel up/Wash Down/Break	Food break
12:45	13:05	00:20	MMO Sighting	MMO standby. Marine mammal in area
13:05	13:20	00:15	Push Sampling	22.5m to 23.0m Thin wall - damaged
13:20	13:55	00:35	Geobor Coring	22.5m to 23.5m
13:55	14:30	00:35	Geobor Coring	23.5m to 24.5m No recovery. Try with fingers. No recovery
14:30	14:45	00:15	Geobor NCD	23.5m to 24.5m
14:45	15:05	00:20	CPT Operations	CPT - 24.5m to 26.0m
15:05	15:30	00:25	Geobor Coring	24.5m to 26.0m
15:30	15:40	00:10	Push Sampling	26.0m to 26.5m Thin wall
15:40	15:50	00:10	Push Sampling	26.5m to 27.0m Thin wall
15:50	16:10	00:20	Geobor NCD	26.0m to 27.0m
16:10	16:20	00:10	Push Sampling	27.0m to 27.4m Thin wall
16:20	16:30	00:10	Push Sampling	27.5m to 27.9m Thin wall
16:30	16:50	00:20	Geobor NCD	27.0m to 28.0m
16:50	17:15	00:25	CPT Operations	CPT - 28.0m to 29.48m
17:15	17:45	00:30	Geobor NCD	28.0m to 28.5m
17:45	18:00	00:15	Push Sampling	28.5m to 29.5m Oversample CPT. Thick wall & catcher
18:00	18:15	00:15	Geobor NCD	Flush and clear hole of sand
18:15	18:45	00:30	CPT Operations	CPT - 29.5m to 30.92m
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / sign PTW
19:00	19:15	00:15	Shift Handover Talk	TBT on drilling ops
19:15	19:55	00:40	Geobor NCD	29.5m to 30.0m
19:55	20:35	00:40	Push Sampling	30.0m to 30.5m Thick wall with catcher. Hole collapsing
20:35	20:50	00:15	Geobor NCD	30.0m to 31.0m
20:50	21:15	00:25	Push Sampling	31.0m to 31.4m Thick wall
21:15	21:45	00:30	Geobor Coring	31.0m to 32.0m
21:45	22:20	00:35	Geobor Coring	32.0m to 33.0m
22:20	23:00	00:40	Geobor Coring	33.0m to 34.5m Mudstone @ 33.5m
23:00	23:45	00:45	Geobor Coring	34.5m to 35.5m
23:45	24:00	00:15	Geobor Coring	35.5m to 37.0m

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.32%
Pre-Move Prep	0:00	0:00	28:15	2.56%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
MMO Pre-Start Watch	0:00	0:00	1:05	0.10%
DEME - Vessel Operations	0:00	0:00	63:30	5.75%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.44%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.26%
Fuel up/Wash Down/Break	1:00	0:00	46:35	4.22%
Geobor NCD	5:30	0:00	96:53	8.78%
Fugro Downtime	0:00	0:00	3:05	0.28%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.98%
Shift Handover Talk	0:45	0:00	16:05	1.46%
Offshore Resupply	0:00	0:00	2:15	0.20%
Fugro Downtime - Breakdown	0:00	0:00	8:40	0.79%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.59%
Mobilisation	0:00	168:00	208:25	18.88%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.16%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.90%
Transit between BH	0:00	0:00	13:20	1.21%
Transit from Falmouth to Site	0:00	34:00	44:45	4.05%
Run-in Conductor Casing	0:00	0:00	17:25	1.58%
Vibrohammer Operations	0:00	0:00	9:05	0.82%
Run-in 7" Casing	0:00	0:00	12:25	1.12%
Run-in Geobor Casing	0:00	0:00	6:45	0.61%
Push Sampling	6:05	0:00	85:33	7.75%
Downhole Hammer Sampling	0:00	0:00	18:14	1.65%
Geobor Over-Coring of Test	1:00	0:00	4:20	0.39%
Geobor Coring	5:35	0:00	80:10	7.26%
CPT Operations	3:45	0:00	40:55	3.71%
Wireline Geophys	0:00	0:00	44:05	3.99%
Trip-out Geobor Casing	0:00	0:00	4:15	0.39%
Trip-out 7" Casing	0:00	0:00	7:55	0.72%
Trip-out Conductor Casing	0:00	0:00	11:45	1.06%
Offshore Crew Change	0:00	0:00	2:30	0.23%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.41%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.18%
Standby Current Speed - Casing	0:00	0:00	22:10	2.01%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.15%
MMO Sighting	0:20	0:00	0:20	0.03%
Total	24:00	202:00	1103:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	36.1060	Days	80.2356%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	35.0000	N°	77.7778%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2601
Fugro	20	240	/	11475
Total	25	300	/	14076

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

1 Fugro driller requests immediate off sign due to welfare issue. CTV transfer on 5th is confirmed

Fugro Representative		Client Representative	
			
James Hills Nearshore Project Manager	05/07/2022	Stephen Forster Client Representative	05/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	47	**Date:**	05/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH13 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	103
Environmental Incident	0	/	0
Shift Handover Talk	2	/	91
Permit to Work	4	/	130
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	2	/	66
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Project HSE meeting held at 18:45

Activities performed these 24 hours

BH13 drilling ops

Planned Work for Next 24 Hours

Move to BH20

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.8	1.0	0.9	1.0	
Wave height (Hs)	m	0.3	0.6	0.5	0.4	
Wind direction	Degrees	WNW	WNW	WNW	W	
Wind speed (m/s)	m/s	6	5	6	6	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
04/0600	WSW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/0900	W	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1200	WSW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1500	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
04/1800	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/2100	WNW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0000	WNW	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0300	W	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0600	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0900	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1200	ESE	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1500	SSE	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/1800	S	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/2100	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.3
06/0000	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.2	0.3
06/0300	W	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.3	0.4
06/0600	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/0900	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1200	W	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1500	WNW	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1800	WNW	5	7	0.1	SSW	0.3	4	NNE	0.1	4	0.3	0.5
06/2100	N	5	6	0.1	SSW	0.2	4	NNE	0.2	4	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	Geobor Coring	35.5m to 37.0m
00:30	01:00	00:30	Fuel up/Wash Down/Break	Food break
01:00	02:00	01:00	Geobor Coring	37.0m to 38.5m
02:00	02:50	00:50	Geobor Coring	38.5m to 40.0m
02:50	03:40	00:50	Geobor Coring	40.0m to 41.5m
03:40	04:05	00:25	Geobor Coring	41.5m to 43.0m Sandstone @ 42.1m
04:05	04:35	00:30	Geobor Coring	43.0m to 44.5m
04:35	05:05	00:30	Geobor Coring	44.5m to 46.0m
05:05	05:35	00:30	Geobor Coring	46.0m to 47.5m
05:35	06:00	00:25	Geobor Coring	47.5m to 49.0m
06:00	06:45	00:45	Geobor Coring	49.0m to 50.0m
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
07:00	07:30	00:30	Shift Handover Talk	Covid test of all crew - TBT
07:30	07:45	00:15	Run-in 7" Casing	Add 2.0m as 7" was following on
07:45	08:40	00:55	DEME - Vessel Operations	1 PAX off by Frog transfer
08:40	09:45	01:05	Geobor Coring	50.0m to 51.5m
09:45	10:00	00:15	Geobor Coring	Client confirms EOH at 51.5m
10:00	10:20	00:20	Wireline Geophys	Pull back Geobor to 35.5m for logging
10:20	13:55	03:35	Wireline Geophys	Wireline logging to 33.5m
13:55	14:40	00:45	Wireline Geophys	Client instructs pull geobor to 28.0m. Hole collapse at 29.5m, client instructs pull geobor to 7.0m
14:40	15:35	00:55	Wireline Geophys	Hole collapse. Client instructs NCD hole open back to 40m
15:35	17:20	01:45	Geobor NCD	NCD 7.2m to 40m. Pull casing back to 31.0m
17:20	18:10	00:50	Wireline Geophys	Log 40.0m to 31.0m. Client instructs pull pipe ready for catching this evenings tide for 20" casing pull
18:10	18:55	00:45	Trip-out 7" Casing	Pull 7" to deck
18:55	19:20	00:25	Shift Handover Talk	Shift handover / TBT / Monthly safety meeting held on drill floor
19:20	19:25	00:05	Shift Handover Talk	TBT on craning ops

DOME

Summary of Events

Begin	End	Duration	Type	Description
19:25	21:00	01:35	Standby Current Speed - Casing	Clear cantilever and prepare for move
21:00	22:30	01:30	Trip-out Conductor Casing	Pull to deck and seafasten
22:30	24:00	01:30	Pre-Move Prep	Set up 20" casing for next move

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	14:35	1.29%
Pre-Move Prep	1:30	0:00	29:45	2.64%
MMO Pre-Start Watch	0:00	0:00	1:05	0.10%
DEME - Vessel Operations	0:55	0:00	64:25	5.71%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.43%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.25%
Fuel up/Wash Down/Break	0:30	0:00	47:05	4.17%
Geobor NCD	1:45	0:00	98:38	8.75%
Fugro Downtime	0:00	0:00	3:05	0.27%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.96%
Shift Handover Talk	1:15	0:00	17:20	1.54%
Offshore Resupply	0:00	0:00	2:15	0.20%
Fugro Downtime - Breakdown	0:00	0:00	8:40	0.77%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.56%
Mobilisation	0:00	168:00	208:25	18.48%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.16%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.86%
Transit between BH	0:00	0:00	13:20	1.18%
Transit from Falmouth to Site	0:00	34:00	44:45	3.97%
Run-in Conductor Casing	0:00	0:00	17:25	1.54%
Vibrohammer Operations	0:00	0:00	9:05	0.81%
Run-in 7" Casing	0:15	0:00	12:40	1.12%
Run-in Geobor Casing	0:00	0:00	6:45	0.60%
Push Sampling	0:00	0:00	85:33	7.59%
Downhole Hammer Sampling	0:00	0:00	18:14	1.62%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.38%
Geobor Coring	7:35	0:00	87:45	7.78%
CPT Operations	0:00	0:00	40:55	3.63%
Wireline Geophys	6:25	0:00	50:30	4.48%
Trip-out Geobor Casing	0:00	0:00	4:15	0.38%
Trip-out 7" Casing	0:45	0:00	8:40	0.77%
Trip-out Conductor Casing	1:30	0:00	13:15	1.17%
Offshore Crew Change	0:00	0:00	2:30	0.22%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.23%
Standby Current Speed - Vessel Move	0:00	0:00	2:00	0.18%
Standby Current Speed - Casing	1:35	0:00	23:45	2.11%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.08%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1127:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	37.1060	Days	82.4578%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	36.0000	N°	80.0000%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Karl Hack	Driller (Nights)	8
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	12
Karl Routledge	Client Rep (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2661
Fugro	20	236	/	11711
Total	25	296	/	14372

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Karl Hack signs off for compassionate leave

Client Representative Comments

DOME

Fugro Representative



James Hills
Nearshore Project Manager

06/07/2022

Client Representative



Stephen Forster
Client Representative

06/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	48	**Date:**	06/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	107
Environmental Incident	0	/	0
Shift Handover Talk	2	/	93
Permit to Work	4	/	134
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	66
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

Completed BH 13 moved to BH20. Preloading. CTV ops, set casing and start drilling and testing

Planned Work for Next 24 Hours

Drilling and testing at BH20

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1.0	0.2	1.0	0.3	
Wave height (Hs)	m	0.3	0.6	0.5	0.4	
Wind direction	Degrees	W	WNW	WNW	WNW	
Wind speed (m/s)	m/s	6	5	8	6	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
04/0600	WSW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/0900	W	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1200	WSW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/1500	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
04/1800	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
04/2100	WNW	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0000	WNW	5	7	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0300	W	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0600	W	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/0900	NW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1200	ESE	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/1500	SSE	5	6	0.1	SSW	0.2	4	SSW	0.1	11	0.3	0.4
05/1800	S	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.4
05/2100	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	11	0.2	0.3
06/0000	WNW	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.2	0.3
06/0300	W	4	5	0.1	SSW	0.2	4	SSW	0.1	10	0.3	0.4
06/0600	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/0900	W	5	7	0.1	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1200	W	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1500	WNW	6	7	0.2	SSW	0.3	4	SSW	0.1	10	0.3	0.5
06/1800	WNW	5	7	0.1	SSW	0.3	4	NNE	0.1	4	0.3	0.5
06/2100	N	5	6	0.1	SSW	0.2	4	NNE	0.2	4	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	02:00	02:00	Standby Current Speed - Vessel Move	Sea-fasten & stby for move
02:00	03:00	01:00	DEME - Vessel Operations	Neptune is jacking down
03:00	04:25	01:25	DEME - Vessel Operations	Transit from BH13 to BH20
04:25	06:45	02:20	DEME - Vessel Operations	Neptune is preloading
06:45	07:00	00:15	Shift Handover Talk	Shifty handover / TBT / Sign onto PTW
07:00	14:40	07:40	DEME - Vessel Operations	Preloading and jacking to working height
14:40	15:45	01:05	Run-in Conductor Casing	Run in 20" casing - CTV on worksite standing by
15:45	17:15	01:30	DEME - Vessel Operations	Conductor casing in at 1.1m. Drilling stops to complete CTV crane ops
17:15	18:10	00:55	Run-in Conductor Casing	Lift on Vibro hammer, set conductor casing to 2.2m
18:10	18:45	00:35	Post-Move Prep	Move pallets and prepare for drilling operations
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
19:00	20:20	01:20	Run-in 7" Casing	Stop to complete CTV transfer
20:20	21:55	01:35	DEME - Vessel Operations	Complete CTV transfer + transfer food and luggage
21:55	22:30	00:35	Run-in 7" Casing	Complete run in of 7"
22:30	22:50	00:20	MMO Pre-Start Watch	Wait for ok to start
22:50	23:20	00:30	Cable Percussive sample	0.0m to 0.5m Bulk sample
23:20	23:40	00:20	Cable Percussive sample	0.5m to 1.0m Bulk sample
23:40	24:00	00:20	Cable Percussive sample	1.0m to 1.5m Bulk sample

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	1:10	0:00	1:10	0.10%
Post-Move Prep	0:35	0:00	15:10	1.32%
Pre-Move Prep	0:00	0:00	29:45	2.58%
MMO Pre-Start Watch	0:20	0:00	1:25	0.12%
DEME - Vessel Operations	15:30	0:00	79:55	6.94%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.42%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.25%
Fuel up/Wash Down/Break	0:00	0:00	47:05	4.09%
Geobor NCD	0:00	0:00	98:38	8.56%
Fugro Downtime	0:00	0:00	3:05	0.27%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.94%
Shift Handover Talk	0:30	0:00	17:50	1.55%
Offshore Resupply	0:00	0:00	2:15	0.20%
Fugro Downtime - Breakdown	0:00	0:00	8:40	0.75%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.53%
Mobilisation	0:00	168:00	208:25	18.10%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.15%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.82%
Transit between BH	0:00	0:00	13:20	1.16%
Transit from Falmouth to Site	0:00	34:00	44:45	3.89%
Run-in Conductor Casing	2:00	0:00	19:25	1.69%
Vibrohammer Operations	0:00	0:00	9:05	0.79%
Run-in 7" Casing	1:55	0:00	14:35	1.27%
Run-in Geobor Casing	0:00	0:00	6:45	0.59%
Push Sampling	0:00	0:00	85:33	7.43%
Downhole Hammer Sampling	0:00	0:00	18:14	1.58%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.38%
Geobor Coring	0:00	0:00	87:45	7.62%
CPT Operations	0:00	0:00	40:55	3.55%
Wireline Geophys	0:00	0:00	50:30	4.38%
Trip-out Geobor Casing	0:00	0:00	4:15	0.37%
Trip-out 7" Casing	0:00	0:00	8:40	0.75%
Trip-out Conductor Casing	0:00	0:00	13:15	1.15%
Offshore Crew Change	0:00	0:00	2:30	0.22%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	8.06%
Standby Current Speed - Vessel Move	2:00	0:00	4:00	0.35%
Standby Current Speed - Casing	0:00	0:00	23:45	2.06%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	3.02%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1151:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	38.1060	Days	84.6800%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	37.0000	N°	82.2222%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Megan Magrosky	Wireline Geophys Operator (nights)	7
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Nick Buzzard	HSE Advisor	7
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	6

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2721
Fugro	20	224	/	11935
Total	25	284	/	14656

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Offsigners Nick Buzzard & Mega Magrosky
Onsigner Wayne Evans
SSE Rep Joe Walsh makes visit on first CTV at 16:30 and leaves on second CTV at 20:30

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
06/07/2022

Client Representative



Stephen Forster
Client Representative
06/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	49	**Date:**	07/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	111
Environmental Incident	0	/	0
Shift Handover Talk	2	/	95
Permit to Work	4	/	138
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	66
Safety Drills	0	/	3
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

BH20 - drilling and testing

Planned Work for Next 24 Hours

Drilling and testing at BH20

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.7	0.6	0.7	
Wave height (Hs)	m	0.3	0.3	0.3	0.3	
Wind direction	Degrees	NNW	NNE	SSW	N	
Wind speed (m/s)	m/s	4	4	3	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
07/0600	NNW	4	5	0.1	SSW	0.3	4	NNE	0.1	4	0.3	0.6
07/0900	NNE	5	6	0.1	SSW	0.3	4	NNE	0.1	4	0.3	0.6
07/1200	ENE	5	6	0.1	SSW	0.4	4	NNE	0.1	4	0.4	0.7
07/1500	SSE	3	3	0.0	NNE	0.3	4	SSW	0.1	4	0.3	0.5
07/1800	SSW	4	5	0.1	NNE	0.2	4	SSW	0.1	4	0.2	0.4
07/2100	SSW	4	5	0.1	NNE	0.2	4	SSW	0.1	4	0.3	0.4
08/0000	N	3	4	0.0	NNE	0.2	4	SSW	0.1	4	0.2	0.4
08/0300	NNW	4	5	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
08/0600	NNW	4	5	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
08/0900	NE	3	4	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
08/1200	E	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1500	SSE	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1800	S	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
08/2100	ESE	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.2	0.4
09/0000	NNW	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.2	0.4
09/0300	N	5	6	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
09/0600	N	5	6	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
09/0900	NNE	5	6	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
09/1200	NE	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.2	0.4
09/1500	E	3	4	0.1	NNE	0.2	3	SSW	0.1	10	0.2	0.4
09/1800	NE	3	3	0.0	NNE	0.2	3	SSW	0.1	10	0.2	0.4
09/2100	NW	2	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3

Summary of Events

Begin	End	Duration	Type	Description
00:00	01:30	01:30	Cable Percussive sample	1.5m to 2.2m Bulk Sample
01:30	04:40	03:10	Geobor Coring	Set up for geobor coring, move pallets, set up CPT beam and run in casing
04:40	05:10	00:30	CPT Operations	CPT - 2.2m Tool not latching due to sand
05:10	06:00	00:50	Geobor NCD	Clean hole
06:00	06:35	00:35	CPT Operations	CPT - 2.2m to 3.65m
06:35	06:45	00:10	Fuel up/Wash Down/Break	Fuel up and tidy up
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
07:00	07:20	00:20	Shift Handover Talk	TBT / Shift handover / Sign on to PTW
07:20	07:40	00:20	Geobor NCD	2.2m to 2.6m
07:40	08:18	00:38	Push Sampling	2.6m to 3.6m Thick wall with catcher. Over Sample CPT
08:18	08:35	00:17	Geobor NCD	Washbore
08:35	09:15	00:40	CPT Operations	CPT - 3.6m to 5.02m
09:15	09:30	00:15	Geobor NCD	Washbore
09:30	09:40	00:10	Downhole Hammer Sampling	4.1m to 4.55m Oversample CPT
09:40	10:05	00:25	Geobor NCD	Washbore
10:05	10:15	00:10	Downhole Hammer Sampling	4.6m to 5.05m Oversample CPT
10:15	10:30	00:15	Geobor NCD	4.6m to 5.1m
10:30	10:45	00:15	Push Sampling	5.1m to 5.6m Thin wall
10:45	11:00	00:15	Geobor NCD	5.1m to 5.6m
11:00	11:10	00:10	Push Sampling	5.6m to 6.1m Thin wall
11:10	11:30	00:20	Geobor NCD	5.6m to 6.1m
11:30	11:50	00:20	CPT Operations	CPT - 6.1m to 7.6m
11:50	12:00	00:10	Geobor NCD	6.1m to 6.6m
12:00	12:20	00:20	Push Sampling	6.6m to 7.6m Thick wall & catcher. Oversample CPT
12:20	12:50	00:30	Fuel up/Wash Down/Break	Lunch break
12:50	13:15	00:25	Geobor NCD	6.6m to 7.6m
13:15	13:25	00:10	Push Sampling	7.6m to 8.1m Thin wall

DOME

Summary of Events

Begin	End	Duration	Type	Description
13:25	13:30	00:05	Push Sampling	8.1m to 8.6m Thin wall
13:30	13:50	00:20	Geobor NCD	7.6m to 8.6m
13:50	14:00	00:10	Push Sampling	8.6m to 9.1m Thin wall
14:00	14:10	00:10	Push Sampling	9.1m to 9.6m Thin wall
14:10	14:30	00:20	Geobor NCD	8.6m to 9.6m
14:30	14:55	00:25	CPT Operations	CPT - 9.6m to 11.1m
14:55	15:10	00:15	Geobor NCD	9.6m to 10.1m
15:10	15:20	00:10	Push Sampling	10.1m to 11.1m Thick wall & catcher. Over sample CPT
15:20	15:35	00:15	Geobor NCD	10.1m to 11.1m
15:35	15:45	00:10	Push Sampling	11.1m to 11,6m Thin wall
15:45	15:50	00:05	Push Sampling	11.6m to 12.1m This wall
15:50	16:10	00:20	Geobor NCD	11.1m to 12.1m
16:10	16:20	00:10	Push Sampling	12.1m to 12.6m Thin wall
16:20	16:35	00:15	Push Sampling	12.6m to 13.1m Thin wall
16:35	16:50	00:15	Geobor NCD	12.1m to 13.1m
16:50	17:10	00:20	CPT Operations	CPT - 13.1m to 13.6m
17:10	17:25	00:15	Geobor NCD	13.1m to 13.6m
17:25	17:30	00:05	Push Sampling	13.6m to 14.6m Thick wall & catcher. Oversample CPT
17:30	17:50	00:20	Geobor NCD	13.6m to 14.6m
17:50	18:00	00:10	Push Sampling	14.6m to15.1m Thin wall
18:00	18:05	00:05	Push Sampling	15.1m to 15.6m Thin wall
18:05	18:15	00:10	Geobor NCD	14.6m to 15.6m
18:15	18:25	00:10	Push Sampling	15.6m to 16.1m Thin wall
18:25	18:35	00:10	Push Sampling	16.1m to 16.6m Thin wall
18:35	18:48	00:13	Geobor NCD	15.6m to 16.6m
18:48	19:00	00:12	Shift Handover Talk	TBT / Shift handover / Sign on to PTW
19:00	19:16	00:16	Shift Handover Talk	TBT on drilling operations
19:16	19:50	00:34	CPT Operations	CPT - 16.6m to 18.1m
19:50	20:05	00:15	Geobor NCD	16.6m to 17.1m
20:05	20:20	00:15	Push Sampling	17.1m & 17.2m Thick wall & catcher
20:20	20:35	00:15	Geobor NCD	17.1m to 17.6
20:35	20:50	00:15	Push Sampling	17.6m to 18.0m. Thick wall & catcher
20:50	21:00	00:10	Geobor NCD	17.6m to 18.1m
21:00	21:45	00:45	CPT Operations	CPT - 18.1m to 19.6m
21:45	22:00	00:15	Geobor NCD	18.1m to 18.6m
22:00	22:15	00:15	Push Sampling	18.6m to 19.0m. Thick wall
22:15	22:25	00:10	Geobor NCD	18.6m to 19.6m
22:25	22:40	00:15	Push Sampling	19.6m to 20.0m Thick wall
22:40	22:50	00:10	Geobor NCD	19.6m to 20.1m
22:50	23:00	00:10	Push Sampling	20.1m to 20.5m Thick wall
23:00	24:00	01:00	Geobor NCD	21.1m to 22.1m

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	1:30	0:00	2:40	0.23%
Post-Move Prep	0:00	0:00	15:10	1.29%
Pre-Move Prep	0:00	0:00	29:45	2.53%
MMO Pre-Start Watch	0:00	0:00	1:25	0.12%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
DEME - Vessel Operations	0:00	0:00	79:55	6.80%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.41%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.24%
Fuel up/Wash Down/Break	0:40	0:00	47:45	4.06%
Geobor NCD	8:30	0:00	107:08	9.11%
Fugro Downtime	0:00	0:00	3:05	0.26%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.92%
Shift Handover Talk	1:03	0:00	18:53	1.61%
Offshore Resupply	0:00	0:00	2:15	0.19%
Fugro Downtime - Breakdown	0:00	0:00	8:40	0.74%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.50%
Mobilisation	0:00	168:00	208:25	17.73%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.15%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.79%
Transit between BH	0:00	0:00	13:20	1.13%
Transit from Falmouth to Site	0:00	34:00	44:45	3.81%
Run-in Conductor Casing	0:00	0:00	19:25	1.65%
Vibrohammer Operations	0:00	0:00	9:05	0.77%
Run-in 7" Casing	0:00	0:00	14:35	1.24%
Run-in Geobor Casing	0:00	0:00	6:45	0.57%
Push Sampling	4:38	0:00	90:11	7.67%
Downhole Hammer Sampling	0:20	0:00	18:34	1.58%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.37%
Geobor Coring	3:10	0:00	90:55	7.73%
CPT Operations	4:09	0:00	45:04	3.83%
Wireline Geophys	0:00	0:00	50:30	4.30%
Trip-out Geobor Casing	0:00	0:00	4:15	0.36%
Trip-out 7" Casing	0:00	0:00	8:40	0.74%
Trip-out Conductor Casing	0:00	0:00	13:15	1.13%
Offshore Crew Change	0:00	0:00	2:30	0.21%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.90%
Standby Current Speed - Vessel Move	0:00	0:00	4:00	0.34%
Standby Current Speed - Casing	0:00	0:00	23:45	2.02%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.96%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1175:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	39.1060	Days	86.9022%
3.2 - Daily Operational Rate Support Vessel	DR	45.0000	1.0000	38.0000	N°	84.4444%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
(rate for when operational performing CTV operations / Sample transfers etc)						

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	6

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2781
Fugro	18	210	/	12133
Total	23	270	/	14914

Lost & Damaged

Deliverables

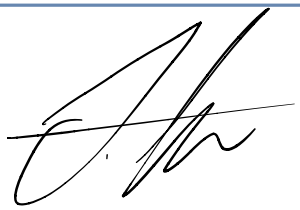
Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Additional hole will be confirmed or cancelled by tomorrow 9:30am

Client Representative Comments

Fugro Representative		Client Representative	
			
James Hills Nearshore Project Manager	08/07/2022	Stephen Forster Client Representative	08/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	50	**Date:**	08/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	115
Environmental Incident	0	/	0
Shift Handover Talk	2	/	97
Permit to Work	4	/	142
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	66
Safety Drills	1	/	4
Near miss	0	/	0
Equipment Damage	0	/	1
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME
Muster drill

Activities performed these 24 hours

BH20 - drilling and testing

Planned Work for Next 24 Hours

Drilling and testing at BH20 - wireline logging

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.7	0.6	0.7	
Wave height (Hs)	m	0.2	0.2	0.2	0.2	
Wind direction	Degrees	NNW	E	SSW	NNW	
Wind speed (m/s)	m/s	3	5	5	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
08/0600	NNW	2	3	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
08/0900	E	2	3	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
08/1200	E	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1500	SSE	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1800	S	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
08/2100	SSW	2	3	0.0	NNE	0.2	3	SSW	0.1	8	0.2	0.4
09/0000	NNW	4	5	0.1	NNE	0.1	3	SSW	0.1	9	0.2	0.3
09/0300	N	4	5	0.1	NNE	0.2	3	SSW	0.1	9	0.3	0.4
09/0600	N	4	5	0.1	NNE	0.2	3	SSW	0.1	9	0.3	0.4
09/0900	NNE	4	5	0.2	NNE	0.2	3	-	0.0	-	0.3	0.4
09/1200	ESE	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
09/1500	S	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
09/1800	SSW	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
09/2100	SW	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
10/0000	WSW	3	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0300	N	2	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0600	NNE	3	4	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0900	ENE	3	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/1200	SSE	2	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/1500	E	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
10/1800	E	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
10/2100	E	2	2	0.0	NE	0.1	3	-	0.0	-	0.1	0.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:05	00:05	Geobor NCD	21.1m to 22.1m
00:05	00:30	00:25	CPT Operations	CPT - 22.1m to 23.6m
00:30	01:00	00:30	Fuel up/Wash Down/Break	Lunch break
01:00	01:15	00:15	Geobor NCD	22.1m to 22.6m
01:15	01:25	00:10	Push Sampling	22.6m to 23.1m
01:25	01:35	00:10	Geobor NCD	22.6m to 23.6m
01:35	01:45	00:10	Push Sampling	23.6m to 24.0m. Thick wall
01:45	01:55	00:10	Geobor NCD	23.6m to 24.1m
01:55	02:00	00:05	Push Sampling	24.1m to 24.5m. Thick wall
02:00	02:05	00:05	Geobor NCD	24.1m to 24.6m
02:05	02:40	00:35	CPT Operations	24.6m to 26.1m. Tool de-latched x 2
02:40	02:55	00:15	Geobor NCD	24.6m to 25.1m
02:55	03:10	00:15	Push Sampling	25.1m to 25.5m. Thick wall, de-latched
03:10	03:15	00:05	Geobor NCD	25.1m to 26.1m
03:15	03:50	00:35	CPT Operations	26.1m to 26.6m. Tool de-latched
03:50	04:00	00:10	Geobor NCD	26.1m to 26.6m
04:00	04:10	00:10	Push Sampling	26.6m to 27.1m. Thick walled
04:10	04:20	00:10	Geobor NCD	26.6m to 27.6m
04:20	04:40	00:20	Push Sampling	27.6m to 28.0m. Thick wall
04:40	04:50	00:10	Geobor NCD	27.6m to 28.1m
04:50	05:00	00:10	Push Sampling	28.1m to 28.5m. Thick wall
05:00	05:05	00:05	Geobor NCD	28.1m to 28.6m
05:05	05:35	00:30	CPT Operations	CPT - 28.6m to 29.1m
05:35	05:45	00:10	Geobor NCD	28.6m to 29.1m
05:45	05:55	00:10	Push Sampling	29.1m to 29.5m Thick walled
05:55	06:05	00:10	Geobor NCD	29.1m to 30.1m
06:05	06:30	00:25	CPT Operations	CPT - 30.1m to 31.6m

Summary of Events

Begin	End	Duration	Type	Description
06:30	06:45	00:15	Fugro Downtime - Breakdown	CPT tool is not de-latching
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign on to PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	Daily checks and TBT
07:20	10:45	03:25	Fugro Downtime - Breakdown	CPT still wont de-latch. Shear pins and pull Geobor. Clear tool and run Geobor back to depth
10:45	10:50	00:05	Geobor NCD	30.1m to 30.6m
10:50	11:00	00:10	Push Sampling	30.6m to 31.6m. Thick wall with catcher. Over sample CPT
11:00	11:10	00:10	Geobor NCD	30.6m to 31.6m
11:10	11:20	00:10	Push Sampling	31.6m to 32.1m Thick wall
11:20	11:30	00:10	Push Sampling	32.1m to 32.6m Thick wall
11:30	11:40	00:10	Geobor NCD	31.6m to 32.6m
11:40	12:15	00:35	CPT Operations	CPT - 32.6m to 34.03m
12:15	12:45	00:30	Fuel up/Wash Down/Break	Lunch break
12:45	13:10	00:25	Geobor NCD	32.6m to 33.1m
13:10	13:25	00:15	Push Sampling	33.1m to 34.1m Thick wall & catcher. Over sample CPT
13:25	13:35	00:10	Geobor NCD	33.1m to 34.1m
13:35	14:00	00:25	CPT Operations	CPT - 34.1m to 35.56m
14:00	14:10	00:10	Geobor NCD	34.1m to 34.6m
14:10	14:25	00:15	Push Sampling	34.6m to 35.6m Thick wall & catcher. Over sample CPT
14:25	14:35	00:10	Geobor NCD	34.6m to 35.6m
14:35	14:50	00:15	Push Sampling	35.6m to 36.1m. Thick wall
14:50	15:00	00:10	Push Sampling	36.1m to 36.6m. Thick wall
15:00	15:10	00:10	Geobor NCD	35.6m to 36.6m
15:10	15:45	00:35	CPT Operations	CPT - 36.6m to 38.06m
15:45	15:50	00:05	Geobor NCD	36.6m to 37.1m
15:50	16:00	00:10	Push Sampling	37.1m to 38.1m Thick wall & catcher. Over sample CPT
16:00	16:10	00:10	Geobor NCD	37.1m to 38.1m
16:10	16:35	00:25	CPT Operations	CPT - 38.1m to 39.57m
16:35	16:40	00:05	Geobor NCD	38.1m to 38.6m
16:40	16:55	00:15	Push Sampling	38.6m to 39.6m Thick wall & catcher. Over sample CPT
16:55	17:10	00:15	Geobor NCD	38.6m to 39.6m
17:10	17:15	00:05	Push Sampling	39.6m to 40.1m Thick wall
17:15	17:25	00:10	Push Sampling	40.1m to 40.6m Thick wall
17:25	17:45	00:20	Geobor NCD	39.6m to 40.6m
17:45	18:05	00:20	CPT Operations	CPT - 40.6m to 42.0m
18:05	18:15	00:10	Geobor NCD	40.6m to 41.1m
18:15	18:30	00:15	Push Sampling	41.1m to 42.1m Thick wall & catcher. Over sample CPT
18:30	18:45	00:15	Geobor NCD	41.1m to 42.1m
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign on to PTW
19:00	19:25	00:25	DEME - Vessel Operations	Muster drill
19:25	19:55	00:30	CPT Operations	CPT - 42.1m to 43.6m
19:55	20:05	00:10	Geobor NCD	42.1m to 43.6m
20:05	20:15	00:10	Push Sampling	42.6m to 43.1m. Thick wall
20:15	20:25	00:10	Geobor NCD	42.6m to 43.6m
20:25	20:40	00:15	Push Sampling	43.6m to 44.1m.Thick wall
20:40	20:55	00:15	Push Sampling	44.1m to 44.6m. Thick wall
20:55	21:05	00:10	Geobor NCD	43.6m to 44.6m
21:05	21:45	00:40	CPT Operations	44.6m to 46.1m
21:45	21:55	00:10	Geobor NCD	44.6m to 45.1m

Summary of Events

Begin	End	Duration	Type	Description
21:55	22:05	00:10	Push Sampling	45.1m to 45.5m. Thick wall
22:05	22:15	00:10	Geobor NCD	45.1m to 46.1m
22:15	22:40	00:25	CPT Operations	46.1m to 47.6m
22:40	22:50	00:10	Geobor NCD	46.1m to 46.6m
22:50	23:00	00:10	Push Sampling	46.6m to 47.2m. Thick wall
23:00	23:10	00:10	Geobor NCD	46.6m to 47.6m
23:10	23:20	00:10	Push Sampling	47.6m to 48.0m. Thick wall
23:20	23:30	00:10	Push Sampling	48.0m to 48.5m. Thick wall
23:30	23:45	00:15	Geobor NCD	47.6m to 48.6m
23:45	24:00	00:15	CPT Operations	CPT - 48.6m to 50.1m

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	2:40	0.22%
Post-Move Prep	0:00	0:00	15:10	1.26%
Pre-Move Prep	0:00	0:00	29:45	2.48%
MMO Pre-Start Watch	0:00	0:00	1:25	0.12%
DEME - Vessel Operations	0:25	0:00	80:20	6.69%
Geophys - Additional Casing Pull	0:00	0:00	4:50	0.40%
Geophys - 1st Casing Pull	0:00	0:00	2:50	0.24%
Fuel up/Wash Down/Break	1:20	0:00	49:05	4.09%
Geobor NCD	6:15	0:00	113:23	9.45%
Fugro Downtime	0:00	0:00	3:05	0.26%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.90%
Shift Handover Talk	0:30	0:00	19:23	1.62%
Offshore Resupply	0:00	0:00	2:15	0.19%
Fugro Downtime - Breakdown	3:40	0:00	12:20	1.03%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.47%
Mobilisation	0:00	168:00	208:25	17.37%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.15%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.75%
Transit between BH	0:00	0:00	13:20	1.11%
Transit from Falmouth to Site	0:00	34:00	44:45	3.73%
Run-in Conductor Casing	0:00	0:00	19:25	1.62%
Vibrohammer Operations	0:00	0:00	9:05	0.76%
Run-in 7" Casing	0:00	0:00	14:35	1.22%
Run-in Geobor Casing	0:00	0:00	6:45	0.56%
Push Sampling	5:25	0:00	95:36	7.97%
Downhole Hammer Sampling	0:00	0:00	18:34	1.55%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.36%
Geobor Coring	0:00	0:00	90:55	7.58%
CPT Operations	6:40	0:00	51:44	4.31%
Wireline Geophys	0:00	0:00	50:30	4.21%
Trip-out Geobor Casing	0:00	0:00	4:15	0.35%
Trip-out 7" Casing	0:00	0:00	8:40	0.72%
Trip-out Conductor Casing	0:00	0:00	13:15	1.10%
Offshore Crew Change	0:00	0:00	2:30	0.21%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.74%

Activity Summary

Activity	Today	Planned	To Date	Progress
Standby Current Speed - Vessel Move	0:00	0:00	4:00	0.33%
Standby Current Speed - Casing	0:00	0:00	23:45	1.98%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.90%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:15	202:00	1200:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.0000	39.1060	Days	86.9022%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	38.0000	N°	84.4444%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	6

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2841
Fugro	18	210	/	12343
Total	23	270	/	15184

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Additional hole added - BH8

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
09/07/2022

Client Representative



Stephen Forster
Client Representative
09/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	51	**Date:**	09/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	119
Environmental Incident	0	/	0
Shift Handover Talk	2	/	99
Permit to Work	4	/	146
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	66
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	1	/	2
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

BH20 - Drilling, testing , wireline logging

Planned Work for Next 24 Hours

CTV ops, move to final location, CTV ops, jacking and preloading, run in casing & start drilling

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.7	0.6	0.7	
Wave height (Hs)	m	0.2	0.2	0.2	0.2	
Wind direction	Degrees	N	E	SE	W	
Wind speed (m/s)	m/s	3	5	2	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
08/0600	NNW	2	3	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
08/0900	E	2	3	0.0	NNE	0.2	4	-	0.0	-	0.2	0.3
08/1200	E	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1500	SSE	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
08/1800	S	4	5	0.1	NNE	0.2	3	SSW	0.1	10	0.3	0.4
08/2100	SSW	2	3	0.0	NNE	0.2	3	SSW	0.1	8	0.2	0.4
09/0000	NNW	4	5	0.1	NNE	0.1	3	SSW	0.1	9	0.2	0.3
09/0300	N	4	5	0.1	NNE	0.2	3	SSW	0.1	9	0.3	0.4
09/0600	N	4	5	0.1	NNE	0.2	3	SSW	0.1	9	0.3	0.4
09/0900	NNE	4	5	0.2	NNE	0.2	3	-	0.0	-	0.3	0.4
09/1200	ESE	4	5	0.1	NNE	0.2	3	-	0.0	-	0.2	0.4
09/1500	S	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
09/1800	SSW	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
09/2100	SW	3	3	0.0	NNE	0.2	3	-	0.0	-	0.2	0.3
10/0000	WSW	3	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0300	N	2	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0600	NNE	3	4	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
10/0900	ENE	3	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/1200	SSE	2	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
10/1500	E	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
10/1800	E	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
10/2100	E	2	2	0.0	NE	0.1	3	-	0.0	-	0.1	0.2

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:45	00:45	Fuel up/Wash Down/Break	Meal time
00:45	00:55	00:10	Geobor NCD	48.6m to 49.1
00:55	01:05	00:10	Push Sampling	49.1m to 49.5m. Thick wall
01:05	01:15	00:10	Geobor NCD	49.1m to 50.1m
01:15	01:45	00:30	CPT Operations	CPT - 50.1m to 51.6m
01:45	01:55	00:10	Geobor NCD	50.1m to 50.6m
01:55	02:05	00:10	Push Sampling	50.6m to 51.6m. Thick wall
02:05	02:15	00:10	Geobor NCD	50.6m to 51.6m
02:15	02:25	00:10	Push Sampling	51.6m to 52.1m
02:25	02:40	00:15	Geobor NCD	51.6m to 52.1m
02:40	02:50	00:10	Push Sampling	52.1m to 52.6m. Thick wall
02:50	03:05	00:15	Geobor NCD	52.1m to 52.6m
03:05	03:35	00:30	CPT Operations	CPT - 52.6m to 54.1m
03:35	03:45	00:10	Geobor NCD	52.6m to 53.1m
03:45	03:55	00:10	Push Sampling	53.1m to 53.7m. Thick wall
03:55	04:10	00:15	Geobor NCD	53.1m to 54.1m
04:10	04:35	00:25	CPT Operations	CPT - 54.1m to 55.6m
04:35	04:45	00:10	Geobor NCD	54.1m to 54.6m
04:45	05:05	00:20	Push Sampling	54.6m to 55.2m. Thick wall
05:05	05:20	00:15	Geobor NCD	54.6m to 55.6m
05:20	05:35	00:15	Push Sampling	55.6m to 56.4m. Thick wall
05:35	05:45	00:10	Push Sampling	56.4m to 56.6m. Thick wall
05:45	06:00	00:15	Geobor NCD	55.6m to 56.6m
06:00	06:25	00:25	CPT Operations	CPT - 56.6m to 58.05m
06:25	06:45	00:20	Fuel up/Wash Down/Break	Flush hole & fuel up
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	Daily checks & TBT

DOME

Summary of Events

Begin	End	Duration	Type	Description
07:20	07:35	00:15	Geobor NCD	56.6m to 57.1m
07:35	07:50	00:15	Push Sampling	57.1m to 58.1m. Thick wall and catcher. Over sample CPT
07:50	08:05	00:15	Geobor NCD	57.1m to 58.1m
08:05	08:35	00:30	CPT Operations	CPT - 58.1m to 58.6m
08:35	08:50	00:15	Geobor NCD	58.1m to 58.6m
08:50	09:05	00:15	Push Sampling	58.6m to 59.6m. Thick wall & catcher. Over sample CPT
09:05	09:15	00:10	Geobor NCD	58.6m to 59.6m
09:15	09:30	00:15	Push Sampling	59.6m to 60.1m. Thick wall, Client confirms EOH
09:30	10:05	00:35	Geophys - 1st Casing Pull	Flush hole and pull casing to 50.1m
10:05	12:40	02:35	Wireline Geophys	Log back to 50.1m
12:40	13:00	00:20	Geophys - Additional Casing Pull	Pull casing back to 35.1m
13:00	14:40	01:40	Wireline Geophys	Log back to 35.1m
14:40	15:00	00:20	Geophys - Additional Casing Pull	Pull casing back to 20.1m
15:00	16:15	01:15	Wireline Geophys	Log back to 20.1m - hole collapses on PS tool just as it re-enters geobore.
16:15	18:45	02:30	Wireline Geophys	PS logging tool is stuck at 20m bml. Make 1 attempt to recover with T bar and 2 attempts to over drill with geobor. Recover one piece 0.7m long. Tool is lost
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
19:00	19:40	00:40	Trip-out Geobor Casing	Geobor to deck
19:40	20:40	01:00	Trip-out 7" Casing	Pull 7" casing to deck
20:40	20:50	00:10	Pre-Move Prep	TBT on crane ops with 20" casing
20:50	24:00	03:10	Standby Current Speed - Casing	Prepare deck, CPT beam off. Set up to move 20" casings

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	2:40	0.22%
Post-Move Prep	0:00	0:00	15:10	1.24%
Pre-Move Prep	0:10	0:00	29:55	2.44%
MMO Pre-Start Watch	0:00	0:00	1:25	0.12%
DEME - Vessel Operations	0:00	0:00	80:20	6.56%
Geophys - Additional Casing Pull	0:40	0:00	5:30	0.45%
Geophys - 1st Casing Pull	0:35	0:00	3:25	0.28%
Fuel up/Wash Down/Break	1:25	0:00	50:30	4.13%
Geobor NCD	3:10	0:00	116:33	9.52%
Fugro Downtime	0:00	0:00	3:05	0.25%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.89%
Shift Handover Talk	0:30	0:00	19:53	1.62%
Offshore Resupply	0:00	0:00	2:15	0.18%
Fugro Downtime - Breakdown	0:00	0:00	12:20	1.01%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.44%
Mobilisation	0:00	168:00	208:25	17.03%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.14%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.72%
Transit between BH	0:00	0:00	13:20	1.09%
Transit from Falmouth to Site	0:00	34:00	44:45	3.66%
Run-in Conductor Casing	0:00	0:00	19:25	1.59%
Vibrohammer Operations	0:00	0:00	9:05	0.74%
Run-in 7" Casing	0:00	0:00	14:35	1.19%

Activity Summary

Activity	Today	Planned	To Date	Progress
Run-in Geobor Casing	0:00	0:00	6:45	0.55%
Push Sampling	2:20	0:00	97:56	8.00%
Downhole Hammer Sampling	0:00	0:00	18:34	1.52%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.35%
Geobor Coring	0:00	0:00	90:55	7.43%
CPT Operations	2:20	0:00	54:04	4.42%
Wireline Geophys	8:00	0:00	58:30	4.78%
Trip-out Geobor Casing	0:40	0:00	4:55	0.40%
Trip-out 7" Casing	1:00	0:00	9:40	0.79%
Trip-out Conductor Casing	0:00	0:00	13:15	1.08%
Offshore Crew Change	0:00	0:00	2:30	0.20%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.58%
Standby Current Speed - Vessel Move	0:00	0:00	4:00	0.33%
Standby Current Speed - Casing	3:10	0:00	26:55	2.20%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.84%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1224:00	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.0000	39.1060	Days	86.9022%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	38.0000	N°	84.4444%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Day Shift

Employee Name	Job Title	Hours Worked
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2901
Fugro	18	216	/	12571
Total	23	276	/	15472

Lost & Damaged

BH20 - PS logging tool lost at 20m below seabed. Nothing is left on seabed, all pieces are at 20m - 25m below seabed.
PS logger tool is a wave form acoustic probe, approx 5m length and 75mm diameter. It is steel and rubber with internal electronics.

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Weather shown is yesterdays - problem with DPR sheet

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

10/07/2022

Client Representative



Stephen Forster
Client Representative

10/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	52	**Date:**	10/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 move to BH08 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	123
Environmental Incident	0	/	0
Shift Handover Talk	2	/	101
Permit to Work	4	/	150
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	1	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	1	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

1 HOC - Positive. Good comms crane to banksman

Activities performed these 24 hours

Neptune moves BH20 to BH08, CTV transfer x 2, jack to working height & prepare for drilling ops

Planned Work for Next 24 Hours

Set 20" casing, start drilling ops at BH08

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	0.5	0.7	0.6	0.7	
Wave height (Hs)	m	0.1	0.1	0.1	0.1	
Wind direction	Degrees	ENE	ENE	ENE	SSW	
Wind speed (m/s)	m/s	3	2	2	3	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
10/0600	NE	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
10/0900	ENE	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
10/1200	ENE	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
10/1500	ENE	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
10/1800	ENE	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
10/2100	S	2	2	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
11/0000	SSW	2	2	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
11/0300	SW	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
11/0600	SSW	2	3	0.0	NE	0.1	3	-	0.0	-	0.1	0.2
11/0900	SSE	5	6	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1200	S	5	7	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1500	S	8	10	0.4	-	0.0	-	-	0.0	-	0.4	0.6
11/1800	SSW	7	9	0.5	S	0.1	4	-	0.0	-	0.5	0.8
11/2100	SSW	7	9	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0000	SSW	6	7	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0300	SW	4	5	0.3	S	0.1	4	-	0.0	-	0.3	0.6
12/0600	SW	4	5	0.2	S	0.2	4	-	0.0	-	0.3	0.4
12/0900	SW	3	4	0.1	S	0.2	4	-	0.0	-	0.2	0.4
12/1200	SSW	4	6	0.3	S	0.2	4	-	0.0	-	0.4	0.6
12/1500	SSW	6	8	0.4	S	0.2	4	-	0.0	-	0.4	0.7
12/1800	SSW	8	10	0.2	S	0.2	4	-	0.0	-	0.3	0.5
12/2100	WSW	4	5	0.1	S	0.3	4	-	0.0	-	0.3	0.5

Summary of Events

Begin	End	Duration	Type	Description
00:00	01:10	01:10	Standby Current Speed - Casing	Waiting on tide for 20" casing pull
01:10	02:20	01:10	Trip-out Conductor Casing	Pull 20" casing to deck
02:20	04:30	02:10	Pre-Move Prep	Adjust 20" casing length for expected water depths at next location
04:30	05:30	01:00	Pre-Move Prep	Tidy away tool, secure deck and sea fasten
05:30	06:45	01:15	Standby Current Speed - Vessel Move	Waiting on tide for vessel move
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign PTW
07:00	07:30	00:30	DEME - Vessel Operations	Neptune is jacking down
07:30	07:45	00:15	Offshore Crew Change	CTV alongside - 3 off 1 on via ladder transfer
07:45	09:10	01:25	DEME - Vessel Operations	Leg jetting and jacking down
09:10	12:20	03:10	DEME - Vessel Operations	Transit around Arklow bank to BH08
12:20	16:10	03:50	DEME - Vessel Operations	Neptune is on location BH08. Jacking and pre-loading
16:10	16:45	00:35	DEME - Vessel Operations	CTV alongside - 1 on via ladder transfer
16:45	18:45	02:00	DEME - Vessel Operations	Jacking and pre-loading
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign on to PTW
19:00	21:00	02:00	DEME - Vessel Operations	Neptune is jacking and preloading
21:00	24:00	03:00	Standby Current Speed - Casing	Green light for 20" casing crane ops - wait on tide

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	2:40	0.21%
Post-Move Prep	0:00	0:00	15:10	1.22%
Pre-Move Prep	3:10	0:00	33:05	2.65%
MMO Pre-Start Watch	0:00	0:00	1:25	0.11%
DEME - Vessel Operations	13:30	0:00	93:50	7.52%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.44%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.27%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Fuel up/Wash Down/Break	0:00	0:00	50:30	4.05%
Geobor NCD	0:00	0:00	116:18	9.32%
Fugro Downtime	0:00	0:00	3:05	0.25%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.87%
Shift Handover Talk	0:30	0:00	20:23	1.63%
Offshore Resupply	0:00	0:00	2:15	0.18%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.99%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.41%
Mobilisation	0:00	168:00	208:25	16.70%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.14%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.68%
Transit between BH	0:00	0:00	13:20	1.07%
Transit from Falmouth to Site	0:00	34:00	44:45	3.59%
Run-in Conductor Casing	0:00	0:00	19:25	1.56%
Vibrohammer Operations	0:00	0:00	9:05	0.73%
Run-in 7" Casing	0:00	0:00	14:35	1.17%
Run-in Geobor Casing	0:00	0:00	6:45	0.54%
Push Sampling	0:00	0:00	97:56	7.85%
Downhole Hammer Sampling	0:00	0:00	18:34	1.49%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.35%
Geobor Coring	0:00	0:00	90:55	7.29%
CPT Operations	0:00	0:00	54:04	4.33%
Wireline Geophys	0:00	0:00	58:30	4.69%
Trip-out Geobor Casing	0:00	0:00	4:55	0.39%
Trip-out 7" Casing	0:00	0:00	9:40	0.77%
Trip-out Conductor Casing	1:10	0:00	14:25	1.16%
Offshore Crew Change	0:15	0:00	2:45	0.22%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.44%
Standby Current Speed - Vessel Move	1:15	0:00	5:15	0.42%
Standby Current Speed - Casing	4:10	0:00	31:05	2.49%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.79%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1247:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	40.1060	Days	89.1244%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	39.0000	N°	86.6667%

DOME

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Liam Whittles	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Jack Green	Assistant Driller (Nights)	7
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Tomasz Lesniak	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12
Matt Tierney	Driller (Nights)	5
Dave Tindall	CPT Operator (nights)	5

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	5	60	/	2961
Fugro	20	221	/	12792
Total	25	281	/	15753

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

12/07/2022

Client Representative



Stephen Forster
Client Representative

11/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	53	**Date:**	11/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH20 move to BH08 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	127
Environmental Incident	0	/	0
Shift Handover Talk	2	/	103
Permit to Work	4	/	154
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

Set 20" casing, start drilling ops at BH08

Planned Work for Next 24 Hours

Drilling and testing

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1	0.5	0.9	0.6	
Wave height (Hs)	m	0.1	0.1	0.1	0.1	
Wind direction	Degrees	SSW	SSE	S	SSW	
Wind speed (m/s)	m/s	3	4	5	8	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
11/0600	SSW	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
11/0900	S	4	5	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1200	SSE	5	7	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1500	S	8	10	0.4	-	0.0	-	-	0.0	-	0.4	0.6
11/1800	S	8	10	0.5	S	0.1	4	-	0.0	-	0.5	0.9
11/2100	SSW	7	9	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0000	SSW	6	7	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0300	SW	5	7	0.4	S	0.2	4	-	0.0	-	0.4	0.7
12/0600	SSW	4	5	0.2	S	0.3	4	-	0.0	-	0.3	0.6
12/0900	SW	3	4	0.1	S	0.3	4	-	0.0	-	0.3	0.5
12/1200	SSW	6	8	0.3	S	0.2	4	-	0.0	-	0.4	0.6
12/1500	SSW	6	8	0.2	S	0.2	4	-	0.0	-	0.3	0.5
12/1800	SW	2	3	0.0	S	0.2	4	-	0.0	-	0.2	0.4
12/2100	NW	4	6	0.1	S	0.3	4	-	0.0	-	0.3	0.5
13/0000	NNW	7	10	0.2	S	0.2	4	-	0.0	-	0.3	0.5
13/0300	NNW	7	9	0.0	S	0.2	4	-	0.0	-	0.2	0.3
13/0600	NW	4	5	0.1	NNE	0.2	4	S	0.1	4	0.3	0.4
13/0900	S	2	2	0.0	NNE	0.2	4	S	0.1	10	0.2	0.4
13/1200	SSE	5	7	0.1	NNE	0.2	4	S	0.1	10	0.3	0.5
13/1500	S	8	11	0.2	NNE	0.2	4	S	0.1	4	0.3	0.6
13/1800	S	6	8	0.2	S	0.2	4	NNE	0.1	4	0.3	0.5
13/2100	NW	4	6	0.1	S	0.2	4	NNE	0.1	4	0.3	0.4

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:45	00:45	Standby Current Speed - Casing	Waiting on current to deploy casing
00:45	03:45	03:00	Run-in Conductor Casing	Run 20" casing to depth, hammer to 2.5m
03:45	04:28	00:43	Post-Move Prep	Move pallets and prepare for drilling
04:28	05:25	00:57	Run-in 7" Casing	Run 7" to mudline
05:25	05:45	00:20	Cable Percussive sample	0.0m to 0.5m
05:45	06:00	00:15	Cable Percussive sample	0.5m to 1.0m
06:00	06:15	00:15	Cable Percussive sample	1.0m to 1.5m
06:15	06:30	00:15	Cable Percussive sample	1.5m to 2.0m
06:30	06:45	00:15	Cable Percussive sample	2.0m to 2.5m
06:45	07:00	00:15	Shift Handover Talk	Shift hand over / TBT / Sign on PTW
07:00	07:20	00:20	Fuel up/Wash Down/Break	TBT and daily checks
07:20	08:40	01:20	Post-Move Prep	Lift on CPT rams and move geobor to cantilever
08:40	09:10	00:30	Geobor Coring	Run geobor to 2.5m
09:10	09:25	00:15	CPT Operations	CPT - 2.5m to 3.72m
09:25	09:40	00:15	Geobor NCD	2.5m to 2.8m
09:40	09:45	00:05	Push Sampling	2.8m to 3.8m. Thick wall & catcher. Over sample CPT
09:45	10:00	00:15	Geobor NCD	2.8m to 3.8m
10:00	10:15	00:15	CPT Operations	CPT - 3.8m to 5.27m
10:15	10:30	00:15	Geobor NCD	3.8m to 4.3m
10:30	10:35	00:05	Push Sampling	4.3m to 5.3m Thick wall with catcher. Over sample CPT
10:35	10:45	00:10	Geobor NCD	4.3m to 5.3m
10:45	10:55	00:10	Push Sampling	5.3m to 5.8m. Thick wall & catcher
10:55	11:00	00:05	Push Sampling	5.8m to 6.3m. Thick wall & catcher
11:00	11:15	00:15	Geobor NCD	5.3m to 6.3m
11:15	11:30	00:15	CPT Operations	CPT - 6.3m to 7.77m
11:30	11:45	00:15	Geobor NCD	6.3m to 6.8m

DOME

Summary of Events

Begin	End	Duration	Type	Description
11:45	12:05	00:20	Push Sampling	6.8m to 7.8m. Thick wall & catcher. Over sample CPT
12:05	12:40	00:35	Fuel up/Wash Down/Break	Meal break
12:40	13:00	00:20	Geobor NCD	6.8m to 7.8m
13:00	13:20	00:20	CPT Operations	CPT - 7.8m to 9.17m
13:20	13:35	00:15	Geobor NCD	7.8m to 8.3m
13:35	13:50	00:15	Push Sampling	8.3m to 9.3m. Thick wall & catcher. Over sample of CPT
13:50	14:00	00:10	Geobor NCD	8.3m to 9.3m
14:00	14:10	00:10	Push Sampling	9.3m to 9.8m. Thick wall
14:10	14:18	00:08	Push Sampling	9.8m to 10.3m. Thick wall
14:18	14:35	00:17	Geobor NCD	9.3m to 10.3m
14:35	15:00	00:25	CPT Operations	CPT - 10.3m to 11.68m
15:00	15:15	00:15	Geobor NCD	10.3m to 10.8m
15:15	15:20	00:05	Push Sampling	10.8m to 11.8m. Thick wall & catcher. Over sample CPT
15:20	15:35	00:15	Geobor NCD	10.8m to 11.8m
15:35	16:00	00:25	CPT Operations	CPT - 11.8m to 13.26m
16:00	16:15	00:15	Geobor NCD	11.8m to 12.3m
16:15	16:30	00:15	Push Sampling	12.3m to 13.3m. Thick wall & catcher. Over sample CPT
16:30	16:45	00:15	Geobor NCD	12.3m to 13.3m
16:45	16:53	00:08	Push Sampling	13.3m to 13.8m. Thick wall
16:53	17:03	00:10	Geobor NCD	13.3m to 13.8m
17:03	17:10	00:07	Push Sampling	13.8m to 14.3m. Thick wall
17:10	17:25	00:15	Geobor NCD	13.8m to 14.3m
17:25	17:45	00:20	CPT Operations	CPT - 14.3m to 14.8m
17:45	18:00	00:15	Geobor NCD	14.3m to 14.8m
18:00	18:07	00:07	Push Sampling	14.8m to 15.8m. Thick wall & catcher. Over sample CPT
18:07	18:25	00:18	Geobor NCD	14.8m to 15.8m
18:25	18:45	00:20	CPT Operations	CPT - 15.8m to 17.3m
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign PTW
19:00	19:15	00:15	Fuel up/Wash Down/Break	TBT Drilling ops
19:15	19:25	00:10	Geobor NCD	15.8m to 16.3m
19:25	19:35	00:10	Push Sampling	16.3m to 17.3m. Thick wall & catcher. Over sample CPT
19:35	19:55	00:20	Geobor NCD	16.3m to 17.3m
19:55	20:05	00:10	Push Sampling	17.3m to 17.8m. Thin wall
20:05	20:20	00:15	Push Sampling	17.8m to 18.3m
20:20	20:35	00:15	Geobor NCD	17.3m to 18.3m
20:35	20:50	00:15	Push Sampling	18.3m to 18.8m. Thin wall
20:50	21:00	00:10	Push Sampling	18.8m to 19.3m. Thin walled
21:00	21:20	00:20	Geobor NCD	18.3m to 19.3m
21:20	21:50	00:30	CPT Operations	CPT - 19.3m to 20.8m
21:50	22:00	00:10	Geobor NCD	19.3m to 19.8m
22:00	22:15	00:15	Push Sampling	19.8m to 20.8m. Thick walled
22:15	22:30	00:15	Geobor NCD	19.8m to 20.8m
22:30	22:45	00:15	Push Sampling	20.8m to 21.3m. Thin wall
22:45	23:00	00:15	Push Sampling	21.3m to 21.8m. Thin wall
23:00	23:20	00:20	Geobor NCD	20.8m to 21.8m
23:20	23:30	00:10	Push Sampling	21.8m to 22.3m. Thin wall
23:30	23:40	00:10	Push Sampling	22.3m to 22.8m Thin wall
23:40	24:00	00:20	Geobor NCD	21.8m to 22.8m

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	1:20	0:00	4:00	0.31%
Post-Move Prep	2:03	0:00	17:13	1.35%
Pre-Move Prep	0:00	0:00	33:05	2.60%
MMO Pre-Start Watch	0:00	0:00	1:25	0.11%
DEME - Vessel Operations	0:00	0:00	93:50	7.38%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.43%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.27%
Fuel up/Wash Down/Break	1:10	0:00	51:40	4.06%
Geobor NCD	6:35	0:00	122:53	9.66%
Fugro Downtime	0:00	0:00	3:05	0.24%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.85%
Shift Handover Talk	0:30	0:00	20:53	1.64%
Offshore Resupply	0:00	0:00	2:15	0.18%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.97%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.38%
Mobilisation	0:00	168:00	208:25	16.39%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.14%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.65%
Transit between BH	0:00	0:00	13:20	1.05%
Transit from Falmouth to Site	0:00	34:00	44:45	3.52%
Run-in Conductor Casing	3:00	0:00	22:25	1.76%
Vibrohammer Operations	0:00	0:00	9:05	0.71%
Run-in 7" Casing	0:57	0:00	15:32	1.22%
Run-in Geobor Casing	0:00	0:00	6:45	0.53%
Push Sampling	4:05	0:00	102:01	8.02%
Downhole Hammer Sampling	0:00	0:00	18:34	1.46%
Geobor Over-Coring of Test	0:00	0:00	4:20	0.34%
Geobor Coring	0:30	0:00	91:25	7.19%
CPT Operations	3:05	0:00	57:09	4.49%
Wireline Geophys	0:00	0:00	58:30	4.60%
Trip-out Geobor Casing	0:00	0:00	4:55	0.39%
Trip-out 7" Casing	0:00	0:00	9:40	0.76%
Trip-out Conductor Casing	0:00	0:00	14:25	1.13%
Offshore Crew Change	0:00	0:00	2:45	0.22%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.30%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.41%
Standby Current Speed - Casing	0:45	0:00	31:50	2.50%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.73%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1271:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	41.1060	Days	91.3467%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	40.0000	N°	88.8889%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Dave Tindall	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3009
Fugro	18	216	/	13008
Total	22	264	/	16017

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative		Client Representative	
			
James Hills Nearshore Project Manager	12/07/2022	Stephen Forster Client Representative	12/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	54	**Date:**	12/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH08 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	131
Environmental Incident	0	/	0
Shift Handover Talk	2	/	105
Permit to Work	4	/	158
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

TBT focus today - gloves / hand injuries

Activities performed these 24 hours

Drilling and testing at BH08

Planned Work for Next 24 Hours

Drilling and testing at BH08

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1	0.5	0.9	0.6	
Wave height (Hs)	m	0.5	0.5	0.6	0.5	
Wind direction	Degrees	SSW	SSW	SSW	NNW	
Wind speed (m/s)	m/s	7	7	9	7	

48 Hours Forecast

DOME

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
11/0600	SSW	3	4	0.1	NE	0.1	3	-	0.0	-	0.1	0.2
11/0900	S	4	5	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1200	SSE	5	7	0.1	-	0.0	-	-	0.0	-	0.1	0.2
11/1500	S	8	10	0.4	-	0.0	-	-	0.0	-	0.4	0.6
11/1800	S	8	10	0.5	S	0.1	4	-	0.0	-	0.5	0.9
11/2100	SSW	7	9	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0000	SSW	6	7	0.4	S	0.1	4	-	0.0	-	0.4	0.7
12/0300	SW	5	7	0.4	S	0.2	4	-	0.0	-	0.4	0.7
12/0600	SSW	4	5	0.2	S	0.3	4	-	0.0	-	0.3	0.6
12/0900	SW	3	4	0.1	S	0.3	4	-	0.0	-	0.3	0.5
12/1200	SSW	6	8	0.3	S	0.2	4	-	0.0	-	0.4	0.6
12/1500	SSW	6	8	0.2	S	0.2	4	-	0.0	-	0.3	0.5
12/1800	SW	2	3	0.0	S	0.2	4	-	0.0	-	0.2	0.4
12/2100	NW	4	6	0.1	S	0.3	4	-	0.0	-	0.3	0.5
13/0000	NNW	7	10	0.2	S	0.2	4	-	0.0	-	0.3	0.5
13/0300	NNW	7	9	0.0	S	0.2	4	-	0.0	-	0.2	0.3
13/0600	NW	4	5	0.1	NNE	0.2	4	S	0.1	4	0.3	0.4
13/0900	S	2	2	0.0	NNE	0.2	4	S	0.1	10	0.2	0.4
13/1200	SSE	5	7	0.1	NNE	0.2	4	S	0.1	10	0.3	0.5
13/1500	S	8	11	0.2	NNE	0.2	4	S	0.1	4	0.3	0.6
13/1800	S	6	8	0.2	S	0.2	4	NNE	0.1	4	0.3	0.5
13/2100	NW	4	6	0.1	S	0.2	4	NNE	0.1	4	0.3	0.4

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:30	00:30	CPT Operations	CPT - 22.8m to 24.3m
00:30	01:00	00:30	Fuel up/Wash Down/Break	Meal break
01:00	01:40	00:40	Geobor NCD	22.8m to 23.2m
01:40	01:55	00:15	Push Sampling	23.2m to 24.3m. Thick wall
01:55	02:15	00:20	Geobor NCD	23.3m to 24.3m
02:15	02:30	00:15	Push Sampling	24.3m to 24.8m
02:30	02:45	00:15	Push Sampling	24.8m to 25.3m
02:45	03:15	00:30	Geobor NCD	24.3m to 25.3m
03:15	03:25	00:10	Push Sampling	25.3m to 25.8m
03:25	03:35	00:10	Push Sampling	25.8m to 26.3m
03:35	04:05	00:30	Geobor NCD	25.3m to 26.3m
04:05	04:45	00:40	CPT Operations	CPT - 26.3m to 27.8m
04:45	05:00	00:15	Geobor NCD	26.3m to 27.8m
05:00	05:10	00:10	Push Sampling	26.8m to 27.8m
05:10	05:30	00:20	Geobor NCD	26.8m to 27.8m
05:30	05:45	00:15	Push Sampling	27.8m to 28.3m
05:45	06:00	00:15	Push Sampling	28.3m to 28.8m
06:00	06:20	00:20	Geobor NCD	27.8m to 28.8m
06:20	06:30	00:10	Push Sampling	28.8m to 29.3m
06:30	06:45	00:15	Push Sampling	29.3m to 29.6m
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign on to PTW
07:00	07:25	00:25	Fuel up/Wash Down/Break	TBT and daily checks
07:25	07:55	00:30	Geobor NCD	28.8m to 29.8m
07:55	08:20	00:25	CPT Operations	CPT - 29.8m to 31.1m
08:20	08:50	00:30	Geobor Over-Coring of Test	29.8m to 31.3m
08:50	09:15	00:25	Geobor Coring	31.3m t0 32.3m

Summary of Events

Begin	End	Duration	Type	Description
09:15	09:35	00:20	Geobor Coring	32.3m to 33.3m
09:35	10:00	00:25	CPT Operations	CPT - 33.3m to 34.8m
10:00	10:25	00:25	Geobor Over-Coring of Test	33.3m to 34.8m
10:25	10:50	00:25	Geobor Coring	34.8m to 35.8m
10:50	11:00	00:10	Push Sampling	35.8m to 36.3m
11:00	11:10	00:10	Push Sampling	36.3m to 36.7m
11:10	11:25	00:15	Geobor NCD	35.8m to 36.8m
11:25	11:50	00:25	CPT Operations	CPT - 36.8m to 37.1m
11:50	12:15	00:25	Geobor Over-Coring of Test	36.8m to 38.3m
12:15	12:46	00:31	Fuel up/Wash Down/Break	Meal break
12:46	13:05	00:19	CPT Operations	CPT - 38.3m to 39.54m
13:05	13:30	00:25	Geobor Over-Coring of Test	38.3m to 39.8m
13:30	13:45	00:15	Geobor Coring	39.8m to 40.8m
13:45	14:05	00:20	CPT Operations	CPT - 40.8m to 42.2m
14:05	14:20	00:15	Geobor NCD	40.8m to 41.3m
14:20	14:35	00:15	Push Sampling	41.3m to 42.3m. Thick wall & catcher. Over sample CPT
14:35	14:50	00:15	Geobor NCD	41.30m to 42.3m
14:50	15:15	00:25	CPT Operations	CPT - 42.3m to 43.78
15:15	15:30	00:15	Geobor NCD	42.3m to 42.8m
15:30	15:40	00:10	Push Sampling	42.8m to 43.8m. Thick wall & catcher. Over sample CPT
15:40	15:55	00:15	Geobor NCD	42.8m to 43.8m
15:55	16:35	00:40	DEME - Vessel Operations	CTV Jule is alongside on DEME charter to deliver food & stores
16:35	16:43	00:08	Push Sampling	43.8m to 44.3m. Thin wall
16:43	16:50	00:07	Push Sampling	44.3m to 44.8m. Thin wall
16:50	17:10	00:20	Geobor NCD	43.8m to 44.8m
17:10	17:33	00:23	CPT Operations	CPT - 44.8m to 46.3m
17:33	17:40	00:07	Geobor NCD	44.8m to 45.3m
17:40	17:55	00:15	Push Sampling	45.3m to 46.3m. Thick wall & catcher. Over sample CPT
17:55	18:05	00:10	Geobor NCD	45.3m to 46.3m
18:05	18:25	00:20	CPT Operations	46.3m to 47.75m
18:25	18:45	00:20	Geobor Coring	Remove short casings and adjust string with 3m length
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
19:00	19:30	00:30	Shift Handover Talk	Shift handover / TBT / Sign onto PTW. Neptune will work on generators from 20:00hrs, drill deck switches to its own auxiliary power system
19:30	19:45	00:15	Geobor NCD	46.3m to 46.8m
19:45	19:55	00:10	Push Sampling	46.8m to 47.3m. Thick wall & catcher
19:55	20:15	00:20	Geobor NCD	46.8m to 47.8m
20:15	20:25	00:10	Push Sampling	47.8m to 48.3m. Thick wall
20:25	20:40	00:15	Push Sampling	48.3m to 48.8m
20:40	21:00	00:20	Geobor NCD	47.8m to 48.8m
21:00	21:30	00:30	Geobor Coring	48.8m to 49.8m
21:30	22:00	00:30	CPT Operations	49.8m to 51.2m
22:00	22:45	00:45	Geobor Over-Coring of Test	49.8m to 51.3m
22:45	23:15	00:30	Geobor Coring	51.3m to 52.3m
23:15	24:00	00:45	Geobor Coring	52.3m to 53.3m - No recovery

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.31%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Post-Move Prep	0:00	0:00	17:13	1.33%
Pre-Move Prep	0:00	0:00	33:05	2.55%
MMO Pre-Start Watch	0:00	0:00	1:25	0.11%
DEME - Vessel Operations	0:40	0:00	94:30	7.29%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.42%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.26%
Fuel up/Wash Down/Break	1:26	0:00	53:06	4.10%
Geobor NCD	6:12	0:00	129:05	9.96%
Fugro Downtime	0:00	0:00	3:05	0.24%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.84%
Shift Handover Talk	1:00	0:00	21:53	1.69%
Offshore Resupply	0:00	0:00	2:15	0.17%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.95%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.36%
Mobilisation	0:00	168:00	208:25	16.08%
Drill and Cantilever - Deconstruct	0:00	0:00	1:45	0.14%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.62%
Transit between BH	0:00	0:00	13:20	1.03%
Transit from Falmouth to Site	0:00	34:00	44:45	3.45%
Run-in Conductor Casing	0:00	0:00	22:25	1.73%
Vibrohammer Operations	0:00	0:00	9:05	0.70%
Run-in 7" Casing	0:00	0:00	15:32	1.20%
Run-in Geobor Casing	0:00	0:00	6:45	0.52%
Push Sampling	4:00	0:00	106:01	8.18%
Downhole Hammer Sampling	0:00	0:00	18:34	1.43%
Geobor Over-Coring of Test	2:30	0:00	6:50	0.53%
Geobor Coring	3:30	0:00	94:55	7.33%
CPT Operations	4:42	0:00	61:51	4.77%
Wireline Geophys	0:00	0:00	58:30	4.51%
Trip-out Geobor Casing	0:00	0:00	4:55	0.38%
Trip-out 7" Casing	0:00	0:00	9:40	0.75%
Trip-out Conductor Casing	0:00	0:00	14:25	1.11%
Offshore Crew Change	0:00	0:00	2:45	0.21%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.16%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.41%
Standby Current Speed - Casing	0:00	0:00	31:50	2.46%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.68%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1295:45	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%

DOME

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	42.1060	Days	93.5689%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	41.0000	N°	91.1111%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Dave Tindall	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3057
Fugro	18	216	/	13224
Total	22	264	/	16281

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative	Client Representative
	
James Hills Nearshore Project Manager 13/07/2022	Stephen Forster Client Representative 13/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	55	**Date:**	13/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH08 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	135
Environmental Incident	0	/	0
Shift Handover Talk	2	/	107
Permit to Work	4	/	162
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

Drilling and testing at BH08, Pull casing

Planned Work for Next 24 Hours

Dismantle drill and cantilever, secure in sea-fasten position

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1	0.5	0.9	0.6	
Wave height (Hs)	m	0.4	0.4	0.4	0.5	
Wind direction	Degrees	SSW	SSW	SSW	NNW	
Wind speed (m/s)	m/s	7	7	9	7	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
13/0600	NNW	6	7	0.2	S	0.3	4	SSW	0.1	13	0.4	0.6
13/0900	NNE	4	5	0.1	S	0.3	4	SSW	0.1	13	0.3	0.6
13/1200	SE	3	4	0.1	S	0.3	4	SSW	0.1	12	0.3	0.5
13/1500	SSE	5	6	0.1	S	0.2	4	SSW	0.1	12	0.3	0.4
13/1800	S	6	7	0.2	S	0.2	4	SSW	0.1	11	0.3	0.5
13/2100	WNW	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0000	NW	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0300	NW	6	7	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0600	NW	4	5	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/0900	NNW	4	5	0.1	S	0.2	3	SSW	0.1	11	0.2	0.4
14/1200	ESE	4	5	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/1500	SSE	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/1800	S	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/2100	SW	5	6	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0000	WNW	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0300	WNW	6	7	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
15/0600	W	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0900	SW	4	5	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1200	S	5	6	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1500	S	5	7	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1800	S	5	6	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/2100	SSE	4	5	0.1	SSW	0.3	3	SSW	0.1	11	0.3	0.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	00:45	00:45	Fuel up/Wash Down/Break	Meal break
00:45	01:20	00:35	CPT Operations	CPT - 53.3m to 53.45m
01:20	01:45	00:25	Geobor Over-Coring of Test	Short run to try and pick up cobble
01:45	02:15	00:30	CPT Operations	CPT - 53.8m to 54.06m
02:15	02:45	00:30	Geobor Over-Coring of Test	53.8 to 54.8m
02:45	03:15	00:30	CPT Operations	54.8m to 55.8m
03:15	03:50	00:35	Geobor Over-Coring of Test	54.8m to 56.3m
03:50	04:30	00:40	CPT Operations	56.3m to 56.67m
04:30	05:15	00:45	Geobor Over-Coring of Test	56.3m to 57.8m
05:15	06:45	01:30	Geobor Coring	Geobor becomes stuck due to ground conditions. Likely boulders. Replace drill head carriage chain and attempt to free casing
06:45	07:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
07:00	08:15	01:15	Geobor Coring	Continue to try and free geobore
08:15	08:35	00:20	DEME - Vessel Operations	Vessel adjust pressures on legs
08:35	09:10	00:35	Geobor Coring	Continue to work geobor free, gain rotation and flush
09:10	10:20	01:10	Geobor Coring	Geobor free, inner barrel on deck. Conclusion from examining sample = very likely a boulder was the cause of stuck casing
10:20	10:50	00:30	Wireline Geophys	Client instructs EOH at 57.8m. Prepare for wireline
10:50	12:30	01:40	Wireline Geophys	Geobor is at 56.0m, run ABI through casing
12:30	12:55	00:25	DEME - Vessel Operations	ABI complete. Vessel adjusts legs
12:55	13:20	00:25	Trip-out Geobor Casing	Pull geobor back 18.3m
13:20	16:00	02:40	Wireline Geophys	Geobor at 18.3m, hole dipped to 44.0m. Continue logging
16:00	16:30	00:30	Trip-out Geobor Casing	Pull geobor and secure
16:30	18:15	01:45	Trip-out 7" Casing	Pull 7" casing, breakdown and secure.
18:15	18:45	00:30	Post-Move Prep	Prepare deck for 20" casing pull
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign onto PTW
19:00	22:30	03:30	Drill and Cantilever - Deconstruct	Prepare for cantilever deconstruct. Strip cantilever. Stow equipment

DOME

Summary of Events

Begin	End	Duration	Type	Description
22:30	23:20	00:50	Trip-out Conductor Casing	Pull 20" casing and secure
23:20	24:00	00:40	Drill and Cantilever - Deconstruct	Prepare for cantilever lift

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.30%
Post-Move Prep	0:30	0:00	17:43	1.34%
Pre-Move Prep	0:00	0:00	33:05	2.51%
MMO Pre-Start Watch	0:00	0:00	1:25	0.11%
DEME - Vessel Operations	0:45	0:00	95:15	7.22%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.42%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.26%
Fuel up/Wash Down/Break	0:45	0:00	53:51	4.08%
Geobor NCD	0:00	0:00	129:05	9.78%
Fugro Downtime	0:00	0:00	3:05	0.23%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.82%
Shift Handover Talk	0:30	0:00	22:23	1.70%
Offshore Resupply	0:00	0:00	2:15	0.17%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.93%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.33%
Mobilisation	0:00	168:00	208:25	15.80%
Drill and Cantilever - Deconstruct	4:10	0:00	5:55	0.45%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.59%
Transit between BH	0:00	0:00	13:20	1.01%
Transit from Falmouth to Site	0:00	34:00	44:45	3.39%
Run-in Conductor Casing	0:00	0:00	22:25	1.70%
Vibrohammer Operations	0:00	0:00	9:05	0.69%
Run-in 7" Casing	0:00	0:00	15:32	1.18%
Run-in Geobor Casing	0:00	0:00	6:45	0.51%
Push Sampling	0:00	0:00	105:46	8.02%
Downhole Hammer Sampling	0:00	0:00	18:34	1.41%
Geobor Over-Coring of Test	2:15	0:00	9:05	0.69%
Geobor Coring	4:30	0:00	99:25	7.53%
CPT Operations	2:15	0:00	64:06	4.86%
Wireline Geophys	4:50	0:00	63:20	4.80%
Trip-out Geobor Casing	0:55	0:00	5:50	0.44%
Trip-out 7" Casing	1:45	0:00	11:25	0.87%
Trip-out Conductor Casing	0:50	0:00	15:15	1.16%
Offshore Crew Change	0:00	0:00	2:45	0.21%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	7.04%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.40%
Standby Current Speed - Casing	0:00	0:00	31:50	2.41%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.63%
MMO Sighting	0:00	0:00	0:20	0.03%
Total	24:00	202:00	1319:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.0000	42.1060	Days	93.5689%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	41.0000	N°	91.1111%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12
Aaron Crighton	Lab Technician (Nights)	12
Dave Tindall	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3105
Fugro	18	216	/	13440
Total	22	264	/	16545

Lost & Damaged

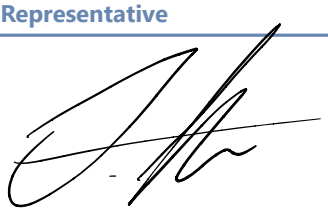
Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative	Client Representative
	
James Hills Nearshore Project Manager 14/07/2022	Stephen Forster Client Representative 14/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	56	**Date:**	14/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	BH08 Arklow Bank				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	139
Environmental Incident	0	/	0
Shift Handover Talk	2	/	109
Permit to Work	4	/	166
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / Lifting / Working at heights / General works PTW issued by DEME

Activities performed these 24 hours

Dismantle drill, cantilever and fix drill spread for sea transit. CTV ops (4 off)

Planned Work for Next 24 Hours

Transit to Falmouth, light deck work only

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Current (m/s)	m/s	1	0.5	0.9	0.6	
Wave height (Hs)	m	0.4	0.4	0.4	0.5	
Wind direction	Degrees	NNW	SE	S	WNW	
Wind speed (m/s)	m/s	7	7	9	7	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
13/0600	NNW	6	7	0.2	S	0.3	4	SSW	0.1	13	0.4	0.6
13/0900	NNE	4	5	0.1	S	0.3	4	SSW	0.1	13	0.3	0.6
13/1200	SE	3	4	0.1	S	0.3	4	SSW	0.1	12	0.3	0.5
13/1500	SSE	5	6	0.1	S	0.2	4	SSW	0.1	12	0.3	0.4
13/1800	S	6	7	0.2	S	0.2	4	SSW	0.1	11	0.3	0.5
13/2100	WNW	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0000	NW	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0300	NW	6	7	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/0600	NW	4	5	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/0900	NNW	4	5	0.1	S	0.2	3	SSW	0.1	11	0.2	0.4
14/1200	ESE	4	5	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/1500	SSE	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
14/1800	S	6	8	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
14/2100	SW	5	6	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0000	WNW	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0300	WNW	6	7	0.2	S	0.2	3	SSW	0.1	11	0.3	0.5
15/0600	W	5	7	0.1	S	0.2	3	SSW	0.1	11	0.3	0.4
15/0900	SW	4	5	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1200	S	5	6	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1500	S	5	7	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/1800	S	5	6	0.1	SSW	0.2	3	SSW	0.1	11	0.3	0.4
15/2100	SSE	4	5	0.1	SSW	0.3	3	SSW	0.1	11	0.3	0.6

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Drill and Cantilever - Deconstruct	Remove CR2 and drill to sea transit position, break down and sea fasten drill pipes and equipment
06:45	07:00	00:15	Shift Handover Talk	Shift hand over / TBT / sign on to PTW
07:00	09:10	02:10	Drill and Cantilever - Deconstruct	Land cantilever platform to sea transit position, land cantilever frame on deck stands and secure
09:10	16:40	07:30	Pre-Move Prep	Tidy deck, stow equipment and sea fasten for this evenings transit
16:40	17:10	00:30	DEME - Vessel Operations	CTV is alongside - 4 Fugro off via ladder transfer
17:10	18:45	01:35	DEME - Vessel Operations	Pull legs and final preparations to sail
18:45	19:00	00:15	Shift Handover Talk	Neptune leaves site. Shift hand over / TBT / PTW
19:00	24:00	05:00	Transit from Site to Falmouth	Transit to Falmouth, deck work is until last light only

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.30%
Post-Move Prep	0:00	0:00	17:43	1.32%
Pre-Move Prep	7:30	0:00	40:35	3.02%
MMO Pre-Start Watch	0:00	0:00	1:25	0.11%
DEME - Vessel Operations	2:05	0:00	97:20	7.24%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.41%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.25%
Fuel up/Wash Down/Break	0:00	0:00	53:51	4.01%
Geobor NCD	0:00	0:00	129:05	9.61%
Fugro Downtime	0:00	0:00	3:05	0.23%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.81%
Shift Handover Talk	0:30	0:00	22:53	1.70%
Offshore Resupply	0:00	0:00	2:15	0.17%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.92%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Neptune arrival to Falmouth	0:00	0:00	17:35	1.31%
Mobilisation	0:00	168:00	208:25	15.51%
Drill and Cantilever - Deconstruct	8:55	0:00	14:50	1.10%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.56%
Transit between BH	0:00	0:00	13:20	0.99%
Transit from Falmouth to Site	0:00	34:00	44:45	3.33%
Transit from Site to Falmouth	5:00	34:00	5:00	0.37%
Run-in Conductor Casing	0:00	0:00	22:25	1.67%
Vibrohammer Operations	0:00	0:00	9:05	0.68%
Run-in 7" Casing	0:00	0:00	15:32	1.16%
Run-in Geobor Casing	0:00	0:00	6:45	0.50%
Push Sampling	0:00	0:00	105:46	7.87%
Downhole Hammer Sampling	0:00	0:00	18:34	1.38%
Geobor Over-Coring of Test	0:00	0:00	9:05	0.68%
Geobor Coring	0:00	0:00	99:25	7.40%
CPT Operations	0:00	0:00	64:06	4.77%
Wireline Geophys	0:00	0:00	63:20	4.71%
Trip-out Geobor Casing	0:00	0:00	5:50	0.43%
Trip-out 7" Casing	0:00	0:00	11:25	0.85%
Trip-out Conductor Casing	0:00	0:00	15:15	1.14%
Offshore Crew Change	0:00	0:00	2:45	0.20%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	6.91%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.39%
Standby Current Speed - Casing	0:00	0:00	31:50	2.37%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.59%
MMO Sighting	0:00	0:00	0:20	0.02%
Total	24:00	236:00	1343:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	44.1060	Days	98.0133%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	1.0000	43.0000	N°	95.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Michael Newton	Geotechnical Engineer (Nights)	12

DOME

Day Shift

Employee Name	Job Title	Hours Worked
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Hamish Spence	Wireline Geophys Operator (days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
Aaron Crighton	Lab Technician (Nights)	12
Dave Tindall	CPT Operator (nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3153
Fugro	18	216	/	13656
Total	22	264	/	16809

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

4 Fugro off signers are Hamish Spence, Aaron Crighton, Dave Tindall, Michael Newton
CTV provider informed of end of field works.

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
15/07/2022

Client Representative



Stephen Forster
Client Representative
15/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	57	**Date:**	15/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Transit - Worksite to Falmouth				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	2	/	141
Environmental Incident	0	/	0
Shift Handover Talk	2	/	111
Permit to Work	4	/	170
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Hot works / General works PTW issued by DEME

Activities performed these 24 hours

Transit to Falmouth, light deck work only

Planned Work for Next 24 Hours

Transit - ETA Falmouth docks 08:00am 16/7/22

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Wave height (Hs)	m	0.4	0.4	0.4	0.4	
Wind direction	Degrees	W	WSW	SSW	S	
Wind speed (m/s)	m/s	3	4	4	3	

48 Hours Forecast

48 Hours Forecast

Valid At	10m Wind Dir	10m Wind Speed	Gust	Wind Sea	Swell 1 Dir	Swell 1 Height	Swell 1 Period	Swell 2 Dir	Swell 2 Height	Swell 2 Period	Sig. Height	Max Wave
15/0600	W	3	4	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
15/0900	WSW	4	5	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
15/1200	SSW	5	6	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
15/1500	S	5	6	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
15/1800	S	4	5	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
15/2100	S	3	3	0.0	SSW	0.2	3	-	0.0	-	0.2	0.3
16/0000	NE	4	5	0.1	SSW	0.2	3	-	0.0	-	0.2	0.4
16/0300	NE	3	4	0.1	SSW	0.2	3	NNE	0.1	4	0.2	0.4
16/0600	ENE	3	3	0.0	NNE	0.2	4	SSW	0.1	3	0.2	0.4
16/0900	ESE	3	4	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
16/1200	S	4	5	0.1	NNE	0.2	4	-	0.0	-	0.2	0.4
16/1500	SSE	4	5	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
16/1800	S	4	5	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
16/2100	SSE	5	6	0.1	NNE	0.1	3	-	0.0	-	0.2	0.3
17/0000	SSW	4	5	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
17/0300	SSE	3	3	0.0	NNE	0.1	3	-	0.0	-	0.1	0.2
17/0600	SE	3	4	0.1	NNE	0.1	3	-	0.0	-	0.1	0.2
17/0900	S	4	5	0.1	-	0.0	-	-	0.0	-	0.1	0.2
17/1200	S	6	7	0.2	-	0.0	-	-	0.0	-	0.2	0.3
17/1500	S	8	10	0.4	-	0.0	-	-	0.0	-	0.4	0.7
17/1800	SSW	9	12	0.6	-	0.0	-	-	0.0	-	0.6	1.0
17/2100	SSW	7	9	0.6	S	0.2	5	-	0.0	-	0.6	1.0

Summary of Events

Begin	End	Duration	Type	Description
00:00	24:00	24:00	Transit from Site to Falmouth	Transit to Falmouth in calm sea, light wind and minimal swell. Deck work and packing containers in daylight hours only. Crew use transit period to rest.

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.29%
Post-Move Prep	0:00	0:00	17:43	1.30%
Pre-Move Prep	0:00	0:00	40:35	2.97%
MMO Pre-Start Watch	0:00	0:00	1:25	0.10%
DEME - Vessel Operations	0:00	0:00	97:20	7.12%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.40%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.25%
Fuel up/Wash Down/Break	0:00	0:00	53:51	3.94%
Geobor NCD	0:00	0:00	129:05	9.44%
Fugro Downtime	0:00	0:00	3:05	0.23%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.79%
Shift Handover Talk	0:00	0:00	22:53	1.67%
Offshore Resupply	0:00	0:00	2:15	0.16%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.90%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.29%
Mobilisation	0:00	168:00	208:25	15.24%
Drill and Cantilever - Deconstruct	0:00	0:00	14:50	1.08%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.54%
Transit between BH	0:00	0:00	13:20	0.98%
Transit from Falmouth to Site	0:00	34:00	44:45	3.27%
Transit from Site to Falmouth	24:00	34:00	29:00	2.12%
Run-in Conductor Casing	0:00	0:00	22:25	1.64%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Vibrohammer Operations	0:00	0:00	9:05	0.66%
Run-in 7" Casing	0:00	0:00	15:32	1.14%
Run-in Geobor Casing	0:00	0:00	6:45	0.49%
Push Sampling	0:00	0:00	105:46	7.73%
Downhole Hammer Sampling	0:00	0:00	18:34	1.36%
Geobor Over-Coring of Test	0:00	0:00	9:05	0.66%
Geobor Coring	0:00	0:00	99:25	7.27%
CPT Operations	0:00	0:00	64:06	4.69%
Wireline Geophys	0:00	0:00	63:20	4.63%
Trip-out Geobor Casing	0:00	0:00	5:50	0.43%
Trip-out 7" Casing	0:00	0:00	11:25	0.83%
Trip-out Conductor Casing	0:00	0:00	15:15	1.12%
Offshore Crew Change	0:00	0:00	2:45	0.20%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	6.79%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.38%
Standby Current Speed - Casing	0:00	0:00	31:50	2.33%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.54%
MMO Sighting	0:00	0:00	0:20	0.02%
Total	24:00	236:00	1367:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	0.0000	Days	0.0000%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	1.0000	45.1060	Days	100.2356%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	43.0000	N°	95.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3201
Fugro	14	168	/	13824
Total	18	216	/	17025

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
16/07/2022

Client Representative



Stephen Forster
Client Representative
16/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	58	**Date:**	16/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Transit to Falmouth & Falmouth North Quay				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	3	/	144
Environmental Incident	0	/	0
Shift Handover Talk	2	/	113
Permit to Work	4	/	174
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Working at heights / General works PTW issued by DEME
No Hot works Permit - Waiting on A&P Chemist

Activities performed these 24 hours

Transit to Falmouth, Pilot station, Jacking and preloading, Start demob crane ops.

Planned Work for Next 24 Hours

Demobilisation

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Wind direction	Degrees	ESE	SE	SE	E	
Wind speed (m/s)	m/s	7	6	7	4	

48 Hours Forecast

48 Hours Forecast

Updated: 17.7. 10:29 BST	Su 17. 07h	Su 17. 09h	Su 17. 11h	Su 17. 13h	Su 17. 15h	Su 17. 17h	Su 17. 19h	Su 17. 21h	Mo 18. 03h	Mo 18. 05h	Mo 18. 07h	Mo 18. 09h	Mo 18. 11h	Mo 18. 13h	Mo 18. 15h	Mo 18. 17h	Mo 18. 19h	Mo 18. 21h	Tu 19. 03h	Tu 19. 05h	Tu 19. 07h	Tu 19. 09h	Tu 19. 11h	Tu 19. 13h	Tu 19. 15h	Tu 19. 17h	Tu 19. 19h	Tu 19. 21h
Wind speed (m/s)	6.8	6.5	6.1	5.7	5.4	4.8	3.8	3.4	4	4.2	3.8	3.9	4.4	4.9	4.9	4.6	3.2	2.9	3.5	3	1.6	2.6	4.4	3	4.9	6.6	6.8	5
Wind gusts (m/s)	10.5	8.8	8.8	8.2	8	7.3	6.3	5.4	7.2	6.9	6	5.7	6.4	7.1	7.3	7.2	5.8	5.3	5.8	4.4	2.9	4.7	7.6	5.7	8.1	9.8	9.5	7.8
Wind direction (→)	←	↖	↖	↖	↖	←	←	←	←	←	←	←	←	←	←	←	←	←	↖	↓	↓	↗	↘	↗	→	↗	↗	↗

Summary of Events

Begin	End	Duration	Type	Description
00:00	05:00	05:00	Transit from Site to Falmouth	Transit to Pilot station
05:00	07:20	02:20	Transit from Site to Falmouth	Move from Pilot station to North Quay wall
07:20	10:30	03:10	Transit from Site to Falmouth	Final positioning, jacking and preloading
10:30	11:15	00:45	DEME - Vessel Operations	Release crane and set up gangway. TBT & sign permits
11:15	11:25	00:10	Demobilisation	Lift off Comacchio pump to courier. Courier departs
11:25	11:35	00:10	Demobilisation	TBT on afternoons operations and lifts.
11:35	12:30	00:55	Demobilisation	Prepare deck for lifts
12:30	13:00	00:30	Fuel up/Wash Down/Break	Meal break
13:00	18:45	05:45	Demobilisation	Lift of cantilever frame, unbolt wings. Land cantilever platform on frame and disassemble. Set cantilever pieces ready for lorry transport. Start lifting off casings and pallets
18:45	19:00	00:15	Shift Handover Talk	Shift handover / TBT / Sign PTW
19:00	21:30	02:30	Demobilisation	Dismantle CR2 derrick and crane ashore. Unwire containers
21:30	24:00	02:30	Demobilisation	Load up 20" casing racks & offload

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.29%
Post-Move Prep	0:00	0:00	17:43	1.27%
Pre-Move Prep	0:00	0:00	40:35	2.92%
MMO Pre-Start Watch	0:00	0:00	1:25	0.10%
DEME - Vessel Operations	0:45	0:00	98:05	7.05%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.40%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.25%
Fuel up/Wash Down/Break	0:30	0:00	54:21	3.91%
Geobor NCD	0:00	0:00	129:05	9.28%
Fugro Downtime	0:00	0:00	3:05	0.22%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.78%
Shift Handover Talk	0:15	0:00	23:08	1.66%
Offshore Resupply	0:00	0:00	2:15	0.16%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.89%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.26%
Mobilisation	0:00	168:00	208:25	14.98%
Drill and Cantilever - Deconstruct	0:00	0:00	14:50	1.07%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.51%
Transit between BH	0:00	0:00	13:20	0.96%
Transit from Falmouth to Site	0:00	34:00	44:45	3.22%
Transit from Site to Falmouth	10:30	34:00	39:30	2.84%
Run-in Conductor Casing	0:00	0:00	22:25	1.61%
Vibrohammer Operations	0:00	0:00	9:05	0.65%
Run-in 7" Casing	0:00	0:00	15:32	1.12%
Run-in Geobor Casing	0:00	0:00	6:45	0.49%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Push Sampling	0:00	0:00	105:46	7.60%
Downhole Hammer Sampling	0:00	0:00	18:34	1.33%
Geobor Over-Coring of Test	0:00	0:00	9:05	0.65%
Geobor Coring	0:00	0:00	99:25	7.14%
CPT Operations	0:00	0:00	64:06	4.61%
Wireline Geophys	0:00	0:00	63:20	4.55%
Trip-out Geobor Casing	0:00	0:00	5:50	0.42%
Trip-out 7" Casing	0:00	0:00	11:25	0.82%
Trip-out Conductor Casing	0:00	0:00	15:15	1.10%
Offshore Crew Change	0:00	0:00	2:45	0.20%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	6.67%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.38%
Standby Current Speed - Casing	0:00	0:00	31:50	2.29%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.50%
MMO Sighting	0:00	0:00	0:20	0.02%
Demobilisation	12:00	96:00	12:00	0.86%
Total	24:00	332:00	1391:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.5300	0.5300	Days	13.2500%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.4700	45.5760	Days	101.2800%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	43.0000	N°	95.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Raquel Francos	Geotechnical Engineer (days)	12
Seymur Idrisov	Lab Technician (Days)	12
Craig Drummond	CPT Operator (Days)	12
Hannah Keogh	MMO (days)	12
Muhammad Khairulannuar	Surveyor	12
Stephen Forster	Client Rep (days)	12
Richard Tidmarsh	Geotechnical Engineer (days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Clare Echlin	MMO (nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	4	48	/	3249
Fugro	14	168	/	13992
Total	18	216	/	17241

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager

17/07/2022

Client Representative



Karl Routledge

17/06/2022

Mike Collins
Client Representative

17/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	59	**Date:**	17/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Falmouth North Quay				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	148
Environmental Incident	0	/	0
Shift Handover Talk	2	/	115
Permit to Work	4	/	178
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Working at heights / General works / Hot works PTW issued by DEME
A&P Chemist writes hot work permit

Activities performed these 24 hours

Demobilisation - offload equipment and cutting on deck

Planned Work for Next 24 Hours

Demobilisation

Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Wind direction	Degrees	ESE	E	E	E	
Wind speed (m/s)	m/s	7	6	7	5	

48 Hours Forecast

DOME

48 Hours Forecast

Updated: 18.7. 10:29 BST	Mo 18. 07h	Mo 18. 09h	Mo 18. 11h	Mo 18. 13h	Mo 18. 15h	Mo 18. 17h	Mo 18. 19h	Mo 18. 21h	Tu 19. 03h	Tu 19. 05h	Tu 19. 07h	Tu 19. 09h	Tu 19. 11h	Tu 19. 13h	Tu 19. 15h	Tu 19. 17h	Tu 19. 19h	Tu 19. 21h	We 20. 03h	We 20. 05h	We 20. 07h	We 20. 09h	We 20. 11h	We 20. 13h	We 20. 15h	We 20. 17h	We 20. 19h	We 20. 21h
Wind speed (m/s)	3.9	4.4	4.8	5.2	5	4.4	3.5	4.1	2.7	2.8	4.2	3.4	5.2	5.3	6.2	6.5	6.3	4.6	3.1	3.8	6.8	7.8	8.3	8.2	8.3	8.1	7.7	6.2
Wind gusts (m/s)	6.9	6.9	7.1	7.6	7.4	6.8	5.8	6.9	4.8	4.9	7.3	5.4	6.7	7.9	7.9	8.5	8.9	7.5	4.8	6	9.9	11	11.4	11.3	11.2	11.1	10.8	10.1
Wind direction (→)	←	←	↖	↖	←	←	←	←	↑	↘	↓	↗	↑	↗	↗	↗	→	↗	→	↘	↓	↓	↓	↓	↓	↓	↓	↘

Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Demobilisation	Re-arrange compound to create space, unload containers and remove sea fastening's
06:45	07:00	00:15	Demobilisation	Shift handover / TBT / Sign on to PTW
07:00	12:00	05:00	Demobilisation	Fugro lorry onsite, A&P Chemist to bridge to arrange hot works permit from Port, A&P welders onboard
12:00	12:30	00:30	Demobilisation	Meal break
12:30	18:45	06:15	Demobilisation	Continue clearing deck and cutting sea fastenings
18:45	19:00	00:15	Demobilisation	Meal break
19:00	24:00	05:00	Demobilisation	Dismantle CR2 derrick, unwire containers load 20" casing racks

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.28%
Post-Move Prep	0:00	0:00	17:43	1.25%
Pre-Move Prep	0:00	0:00	40:35	2.87%
MMO Pre-Start Watch	0:00	0:00	1:25	0.10%
DEME - Vessel Operations	0:00	0:00	98:05	6.93%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.39%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.24%
Fuel up/Wash Down/Break	0:00	0:00	53:51	3.80%
Geobor NCD	0:00	0:00	129:05	9.12%
Fugro Downtime	0:00	0:00	3:05	0.22%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.77%
Shift Handover Talk	0:00	0:00	22:53	1.62%
Offshore Resupply	0:00	0:00	2:15	0.16%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.87%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.24%
Mobilisation	0:00	168:00	208:25	14.72%
Drill and Cantilever - Deconstruct	0:00	0:00	14:50	1.05%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.48%
Transit between BH	0:00	0:00	13:20	0.94%
Transit from Falmouth to Site	0:00	34:00	44:45	3.16%
Transit from Site to Falmouth	0:00	34:00	39:30	2.79%
Run-in Conductor Casing	0:00	0:00	22:25	1.58%
Vibrohammer Operations	0:00	0:00	9:05	0.64%
Run-in 7" Casing	0:00	0:00	15:32	1.10%
Run-in Geobor Casing	0:00	0:00	6:45	0.48%
Push Sampling	0:00	0:00	105:46	7.47%
Downhole Hammer Sampling	0:00	0:00	18:34	1.31%
Geobor Over-Coring of Test	0:00	0:00	9:05	0.64%
Geobor Coring	0:00	0:00	99:25	7.02%
CPT Operations	0:00	0:00	64:06	4.53%

DOME

Activity Summary

Activity	Today	Planned	To Date	Progress
Wireline Geophys	0:00	0:00	63:20	4.47%
Trip-out Geobor Casing	0:00	0:00	5:50	0.41%
Trip-out 7" Casing	0:00	0:00	11:25	0.81%
Trip-out Conductor Casing	0:00	0:00	15:15	1.08%
Offshore Crew Change	0:00	0:00	2:45	0.19%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	6.56%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.37%
Standby Current Speed - Casing	0:00	0:00	31:50	2.25%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.45%
MMO Sighting	0:00	0:00	0:20	0.02%
Demobilisation	24:00	96:00	36:45	2.60%
Total	24:00	332:00	1415:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	1.0000	1.5300	Days	38.2500%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.0000	45.5760	Days	101.2800%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	43.0000	N°	95.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Richard Tidmarsh	Geotechnical Engineer (days)	12
Karl Hack	Driller (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	1	12	/	3261
Fugro	13	156	/	14148
Total	14	168	/	17409

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Offsigners today are:
Fugro - Raquel Francos, Seymour Idrisov, Muhammad Khrail
SSE - Claire Echlin, Hannah Keogh, Stephen Forester

Onsigners today are:
Fugro - Karl Hack joins dayshift & is shore based
SSE - Mike Collins joins Neptune & is liveaboard

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
18/07/2022

Client Representative



Karl Routledge
Client Representative
18/07/2022

DAILY PROGRESS REPORT

Arklow Bank Wind Park - Geotechnical
Borehole Survey 2022

Neptune

Project No.:	186642	**Report No.:**	60	**Date:**	18/07/2022
Client:	SSE Renewables			**Timezone:**	UTC+01:00
Location:	Falmouth North Quay				

HSE Summary

Safety Information	Today	/	To Date
Tool Box Talk / POWRA	4	/	152
Environmental Incident	0	/	0
Shift Handover Talk	2	/	117
Permit to Work	4	/	182
Mob Induction	0	/	27
Accident/Incident	0	/	1
HOC Cards	0	/	67
Safety Drills	0	/	4
Near miss	0	/	0
Equipment Damage	0	/	3
Audits / Inspections	0	/	3
Daily Safety Sweep	0	/	24
Shift Task Briefing	0	/	59
Vessel Induction	0	/	35
Project Induction	0	/	44
Safety Stand-Down	0	/	0

HSE Summary (HOC, Incidents, etc.)

Open Permits: Lifting / Working at heights / General works / Hot works PTW issued by DEME
A&P Chemist reviews hot work permit to allow hot works and tank cleaning

Activities performed these 24 hours

Demobilisation - offload equipment and cutting on deck

Planned Work for Next 24 Hours

Demobilisation

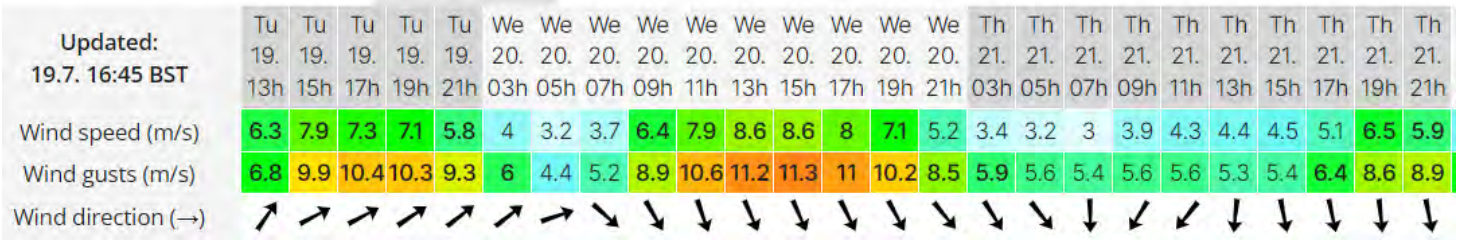
Weather & Sea

Weather and Sea State	Unit	06:00	12:00	18:00	24:00	Comments
Wind direction	Degrees	ESE	E	E	E	
Wind speed (m/s)	m/s	7	6	7	5	

48 Hours Forecast

DOME

48 Hours Forecast



Summary of Events

Begin	End	Duration	Type	Description
00:00	06:45	06:45	Demobilisation	Cutting and grinding continues, arrange compound and off load equipment
06:45	07:00	00:15	Demobilisation	Shift hand over / TBT / Sign on to PTW
07:00	18:45	11:45	Demobilisation	Demob continues, load out wagons and prep Neptune deck
18:45	19:00	00:15	Demobilisation	Shift hand over / TBT / Sign onto PTW
19:00	24:00	05:00	Demobilisation	Clean welfare containers, empty offices and final equipment pack away. Continue deck preparations

Activity Summary

Activity	Today	Planned	To Date	Progress
Cable Percussive sample	0:00	0:00	4:00	0.28%
Post-Move Prep	0:00	0:00	17:43	1.23%
Pre-Move Prep	0:00	0:00	40:35	2.82%
MMO Pre-Start Watch	0:00	0:00	1:25	0.10%
DEME - Vessel Operations	0:00	0:00	98:05	6.81%
Geophys - Additional Casing Pull	0:00	0:00	5:30	0.38%
Geophys - 1st Casing Pull	0:00	0:00	3:25	0.24%
Fuel up/Wash Down/Break	0:00	0:00	53:51	3.74%
Geobor NCD	0:00	0:00	129:05	8.97%
Fugro Downtime	0:00	0:00	3:05	0.21%
Advance/Washbore 7" casing	0:00	0:00	10:50	0.75%
Shift Handover Talk	0:00	0:00	22:53	1.59%
Offshore Resupply	0:00	0:00	2:15	0.16%
Fugro Downtime - Breakdown	0:00	0:00	12:20	0.86%
Neptune arrival to Falmouth	0:00	0:00	17:35	1.22%
Mobilisation	0:00	168:00	208:25	14.48%
Drill and Cantilever - Deconstruct	0:00	0:00	14:50	1.03%
Drill and Cantilever - Reconstruct	0:00	0:00	21:00	1.46%
Transit between BH	0:00	0:00	13:20	0.93%
Transit from Falmouth to Site	0:00	34:00	44:45	3.11%
Transit from Site to Falmouth	0:00	34:00	39:30	2.74%
Run-in Conductor Casing	0:00	0:00	22:25	1.56%
Vibrohammer Operations	0:00	0:00	9:05	0.63%
Run-in 7" Casing	0:00	0:00	15:32	1.08%
Run-in Geobor Casing	0:00	0:00	6:45	0.47%
Push Sampling	0:00	0:00	105:46	7.35%
Downhole Hammer Sampling	0:00	0:00	18:34	1.29%
Geobor Over-Coring of Test	0:00	0:00	9:05	0.63%
Geobor Coring	0:00	0:00	99:25	6.91%

Activity Summary

Activity	Today	Planned	To Date	Progress
CPT Operations	0:00	0:00	64:06	4.45%
Wireline Geophys	0:00	0:00	63:20	4.40%
Trip-out Geobor Casing	0:00	0:00	5:50	0.41%
Trip-out 7" Casing	0:00	0:00	11:25	0.79%
Trip-out Conductor Casing	0:00	0:00	15:15	1.06%
Offshore Crew Change	0:00	0:00	2:45	0.19%
WoW - Wind speed - drilling operations	0:00	0:00	92:50	6.45%
Standby Current Speed - Vessel Move	0:00	0:00	5:15	0.36%
Standby Current Speed - Casing	0:00	0:00	31:50	2.21%
Standby Wave Height - Vessel Move	0:00	0:00	34:45	2.41%
MMO Sighting	0:00	0:00	0:20	0.02%
Demobilisation	24:00	96:00	60:45	4.22%
Total	24:00	332:00	1439:30	

Production Summary

Product	DR/ LS	Estimated	Produced	To Date	Unit	Progress
1.6 - Day rate during equipment mobilisation onto JUV	DR	7.0000	0.0000	8.6900	Days	124.1429%
1.7 - Day Rate during Equipment Demobilisation from JUV	DR	4.0000	0.0000	1.5300	Days	38.2500%
1.9 - Crew change per person each way	LS	0.0000	0.0000	0.0000	N°	0.0000%
1.10 - Crew change standby	DR	0:00	0:00	0:00	Hours	0.0000%
3.1 - Daily Operational Rate Fugro (includes all personnel, equipment, consumables and services to deliver required SoW)	DR	45.0000	0.0000	45.5760	Days	101.2800%
3.2 - Daily Operational Rate Support Vessel (rate for when operational performing CTV operations / Sample transfers etc)	DR	45.0000	0.0000	43.0000	N°	95.5556%

Day Shift

Employee Name	Job Title	Hours Worked
James Hills	Project Manager (Days)	12
Andy Rowe	Drill Supervisor (Days)	12
Andy Barnett	Driller (Days)	12
Cameron Hughes	Assistant Driller (Days)	12
Richard Knight	Assistant Driller (Days)	12
Craig Drummond	CPT Operator (Days)	12
Muhammad Khairulannuar	Surveyor	12
Richard Tidmarsh	Geotechnical Engineer (days)	12
Karl Hack	Driller (Days)	12

Night Shift

Employee Name	Job Title	Hours Worked
James Lawson	Drill Supervisor (Nights)	12
Matt Tierney	Assistant Driller (Nights)	12
Ryan Reeve	Assistant Driller (Nights)	12
Karl Routledge	Client Rep (days)	12
Wayne Evans	HSE Advisor	12

Personnel Summary

Contract	POB	Today/Hrs	/	To Date/Hrs
Client	1	12	/	3273
Fugro	13	156	/	14304
Total	14	168	/	17577

Lost & Damaged

Deliverables

Vessel Consumption (if applicable)

Item	Amount at start	Added today	Used Today	Amount at End	Used to Date	Unit

Fugro Representative Comments

Offsigners today are:
Fugro - Richard Tidmarsh

Fugro welders x 2 onsite dayshift

Client Representative Comments

Fugro Representative



James Hills
Nearshore Project Manager
19/07/2022

Client Representative



Karl Routledge
Client Representative
19/07/2022

9. Contractual Agreements

Title	Plate No.
INTENTIONALLY BLANK – NO PLATES	

10. Health, Safety, Security and Environment

Title	Plate No.
Incident Report – Personnel – Hand Injury	10.1 to 10.11
Incident Report – Vessel – Venting	10.12
Incident Report - Cone Penetration Testing – Equipment Damage	10.13
Incident Report – Geophysics – Equipment Loss	10.14 to 10.18

QHSE·S

DEME

INC 2022 00765

INCIDENT PENDING LOCAL REVIEW

Incident pinched fingertip

INCIDENT WITH DAMAGE INCIDENT WITH DAMAGE: RESTRICTED WORK CASE TYPE OF INCIDENT	PEOPLE DAMAGE RELATED TO
14/06/2022 08:30 DATE INCIDENT OCCURED	14/06/2022 11:20 DATE INCIDENT REPORTED
5982__ - IE:DOBE:ARKLOW BANK II - SI WORKS PROJECT	E396 - NEPTUNE VESSEL
ENTITY	OTHER SITE
SUPPORTING SERVICE	3 REQUIRED ACTIONS
NEPTUNE (BRIDGE) ORIGINATOR	



TOPICS

DESCRIPTION....2
DUTY OF NOTIFICATION....3
PARTIES INVOLVED....3
PEOPLE....3
QUALITY....4
ENVIRONMENT....4
SECURITY....4
POTENTIAL RISK....4
ACTIVITIES PERFORMED AT THE TIME OF THE INCIDENT....4
COST....5
INVESTIGATION....5
ACTIONS (IN CASE ACTIONS ARE DEFINED)....5
PICTURES....6

DESCRIPTION

Description:	The incident happened during a painting job. To access the underside of the lower ventilation flap, the victim lifted the flap up. The first part of the opening went smooth, than the flap seized and only moved with great force. The victim applied this force to fully open the flap. Then suddenly the resistance disappeared with the victim still applying the same force. From almost no movement the flap accelerated fiercely leaving the victim insufficient time to respond and reposition his hands. Note: these ventilation flaps are heavy.
Description damage:	finger injury
Country:	Ireland
Detailed location:	Arklow Bank BH28
Internal reference number:	
Description reviewed by HQ:	The incident happened during a painting job. To access the underside of the lower ventilation flap, the victim lifted the flap up. The first part of the opening went smooth, than the flap seized and only moved with great force. The victim applied this force to fully open the flap. Then suddenly the resistance disappeared with the victim still applying the same force. From almost no movement the flap accelerated fiercely leaving the

	victim insufficient time to respond and reposition his hands. Note: these ventilation flaps are heavy.
Additional information:	4/6 with a referral to see a Plastic Surgeon in St. Vincent's Hospital in Dublin at 0730 hrs tomorrow morning. A Driver has transferred Mr Ritchie to a hotel in nearby that is located close to St. Vincent's Hospital. John was assessed by Plastic Surgeon on 15/06 morning in St. Vincent's Hospital. Doctor has advised that small operation will be required which will take place under local anesthetic. This is planned to take place at 1400 hrs this afternoon (15/06) and AGW John should be discharged from hospital by 1600 hrs. John has advised that PCR test is required before he can return onboard. We will therefore arrange for express test to be carried out this afternoon prior going to hotel for the night. When back onboard, he will be given non deck jobs (counting stock).

DUTY OF NOTIFICATION

Reportable to the authorities:	Yes
Which authorities?	HSA
Reportable to class & flagstate:	No
Comments:	

PARTIES INVOLVED

Third party	Name	How involved?

PEOPLE

Injury details

Injured person:
DEME
A/B, Rigger

Type of injury:
Wounds and superficial injuries

Classification injury:
Restricted Work

Injured body part:
Hand

Additional comments on the injury:

QUALITY

Category:

ENVIRONMENT

Environmental aspect:

Material spilled or released	Medium	Amount	Unit

SECURITY

Category:

Declaration(s):

Reference number	Date notified

POTENTIAL RISK

SEVERITY / PROBABILITY	Minor	Slight	Moderate	High	Very high
Very unlikely	1	2	3	4	5
Unlikely	2	4	6	8	10
Possible	3	6	9	12	15
Likely	4	8	12	16	20
Very likely	5	10	15	20	25

LOW RISK	MEDIUM RISK	HIGH RISK

Classification potential damage	Probability	Potential severity	Potential risk score	HIPO
People	2	3	6	No

ACTIVITIES PERFORMED AT THE TIME OF THE INCIDENT

Activity and technique: Other activity/task
Painting

High risk task: Other activity/task

Specify activity details:

Type of operation:	Maintenance on vessels (incidents in engine room/ with engineers, electricians...)
Secondary factor:	Safety by design: Hatches

COST

Overall cost category: HICO Cat 1 (<1.000)

DEME cost category:

Cost details

DEME -

INVESTIGATION

For a detailed investigation report, download the investigation report file.

Investigation leader

Investigation report date

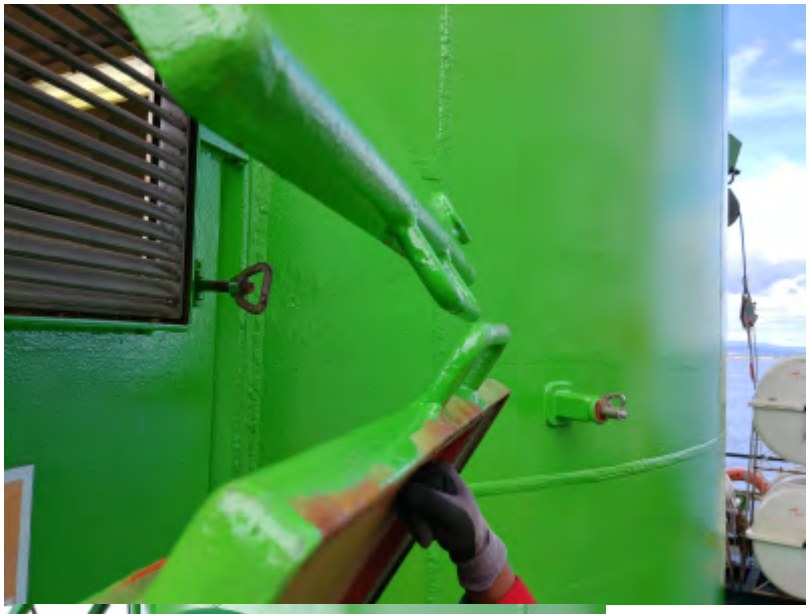
Root cause(s)

ACTIONS (IN CASE ACTIONS ARE DEFINED)

Action	Priority	Due date	Assigned to
Add a sticker to warn of the risk of pinched finger	Low	Mon 15 Aug	E396 Neptune (Captain)
Check if a similar hazard is present on other flaps onboard	Low	Mon 15 Aug	E396 Neptune (Captain)
Change the position of the handles to make such clash impossible	Low	Mon 15 Aug	E396 Neptune (Captain)

PICTURES

LEVEL 1: Helicopter view of the location





LEVEL 2: Situation (incident scene or simulation)



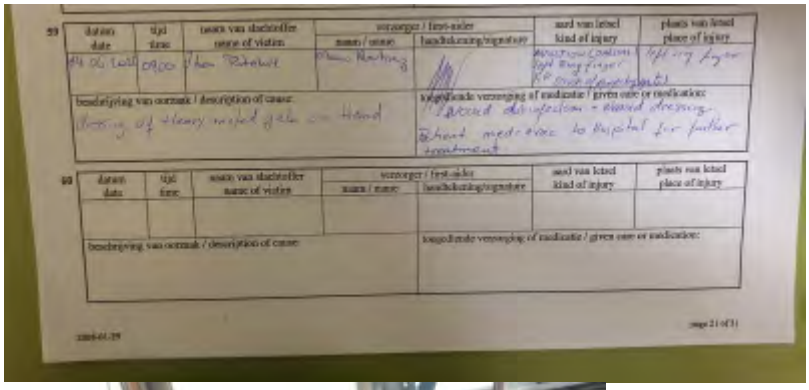




LEVEL 3: Details of other relevant information – contributing factors



LEVEL 4: Damage or injury



59

datum date	tijd time	naam van slachtoffer name of victim	verzorger / first-aider		aard van letsel kind of injury	plaats van letsel place of injury
			naam / name	handtekening/signature		
04.06.2022	09:00	Jhon Ritabuk	[illegible]	[illegible]	[illegible]	[illegible]

beschrijving van oorzaak / description of cause: dressing of theory mixed gale on Hand

toegediende verzorging of medicatie / given care or medication: Proceed disinfection - Hand dressing. Extract medi-evac to hospital for further treatment

60

datum date	tijd time	naam van slachtoffer name of victim	verzorger / first-aider		aard van letsel kind of injury	plaats van letsel place of injury
			naam / name	handtekening/signature		

beschrijving van oorzaak / description of cause:

toegediende verzorging of medicatie / given care or medication:



Safety Moment - Neptune Void Venting

When: Tuesday 19th July 2022

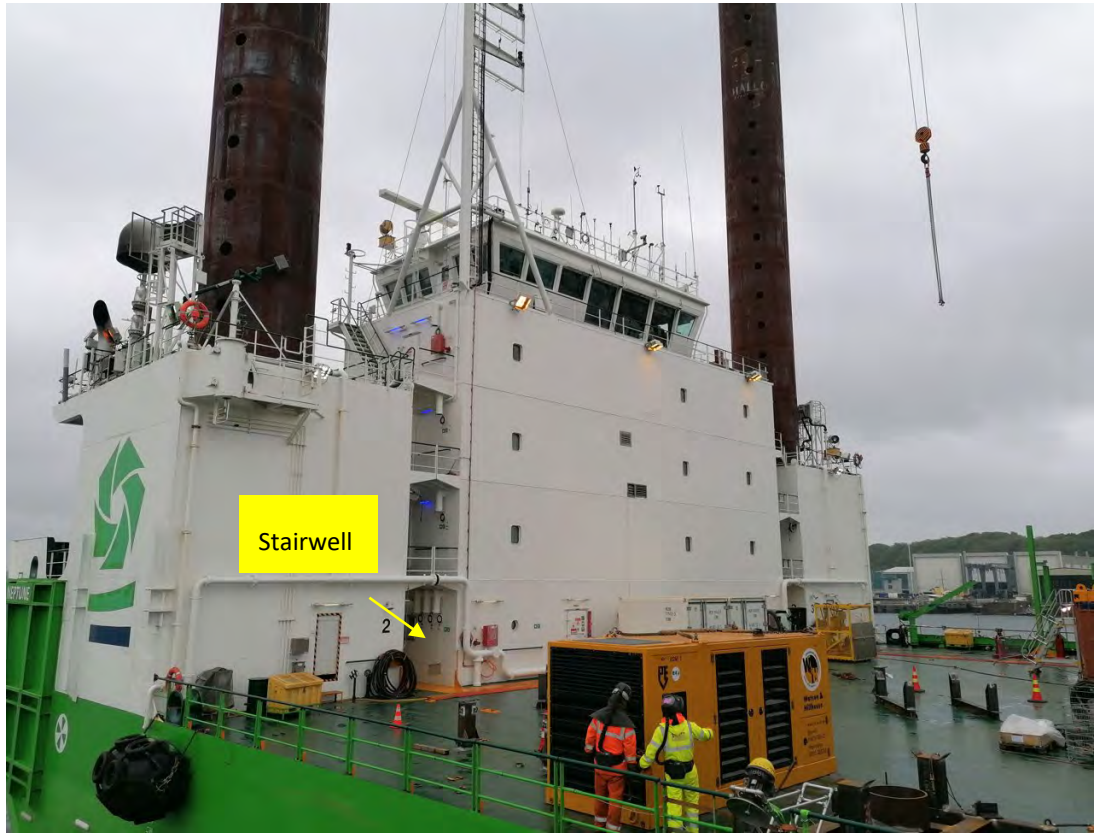
Where: On the Neptune vessel demobilising in Falmouth port after completing the Arklow bore hole campaign. The vessel was off-hired later that day.

What Happened: A surveyor engaged by SPL was scheduled to carry out an inspection on void/tank 14 under deck level for any damage following welding and cutting operations during the borehole campaign and prior to off-hiring the vessel later that day. Void 14 is a confined space and all necessary measures were put in place to deal with such in accordance with the vessel confined space permit and International Safety Management (ISM) certification. An extraction hose was run from void 14 through the visitors changing room on the vessel, out the door and up an external stairwell to the deck of the vessel. As an SSER representative entered the changing room/lower accommodation level at 8am in the morning, he noticed there was a smell of fumes and on inspection of the void venting hose, it was apparent that this hose terminated only halfway up the stairway to the deck. Fumes were coming out of the hose on the stairway and it is clear these were not venting to the outside and thus gases were most likely moving back into the changing room. This was raised immediately with the Captain.

Immediate Actions Taken:

- Extraction hose extended onto the deck
- Air quality checks were carried out by the vessel but all was normal
- Tool box talk was carried out with vessel crew

Note: Vessel was off-hired approximately 4 hours later.



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Incident Report

Incident: Fault with downhole CPT equipment at Arklow resulting in down time - JUB Neptune

On 4 June an intermittent fault was identified with the Downhole CPT Tool where it lost connection whilst lowering down the Geobor casing but reconnected and continued to work as normal when latched into the casing.

Firstly on 5 June with an electrician present, the termination was opened. This revealed a couple of loose wires that may have been causing the problem. These were reconnected and the tool reassembled. A series of down the hole tests were carried out in an attempt to trigger the problem and the problem was still present.

All wires, cones, panels and encoders were swapped out and the tests were performed again, still the problem remained. The only constant being the umbilical winch cable and the winch. The winch wire was shortened by approximately 3m and re-terminated however this did not solve the problem. On 06/06 the winch cable was then changed for the onboard spare and the problems worsened with no signal being received at all.

The problem was narrowed down to the winch itself and likely the slip ring due to the intermittent nature of the fault when the winch is in motion. On 10/06 a replacement winch was removed from Excalibur and shipped to the Neptune.

The winch was brought onboard on 14/06 and is now fully functional. The Project team did a fantastic job minimising the downtime of this equipment fault on operations resulting in only 4.26 hours of actual non chargeable down time.



Figure 1: The Slip ring with the damaged connection



Figure 2: The Slip Ring connection after soldering

Incident Report

GENERAL

Report Number: 3454	Incident Title: Wireline Geophysical Logging equipment (PS Logger tool string) lost in borehole
Responsible Department: Wireline Geophysics Name of Reporter: Hamish Spence Specific Location: Arklow Bank, Irish Sea, BH20	Project Number: 210234D04 Client: SSE Renewables Date/Time Occurred: 09-07-2022

Classification of Incident: *(Tick appropriate box or boxes)*

☐	Injury	☐	Occupational Illness	☐	Near Miss	☐	Non Work Related
☐	Environmental	☒	Property/Equipment	☐	Transportation		

Severity of Injury: … Is High Potential (HIPO) ☐ Yes ☐ No

Lighting: … Actual Risk Ranking: … Potential Risk Ranking: …

Weather: … *(See Risk Matrix)*

DETAILS

Factual description of the incident: On Saturday (09/07/2022) when performing the wireline logging of BH20 for the Arklow bank wind farm project for SSE, the borehole collapsed onto the PS logger at 22.50 m. The PS logger tool was lowered down to 40m to take it's recording at this depth before coming up 1m at a time to take subsequent recordings. When coming up from 23m to 22m, this is where the tool got stuck as the borehole collapsed onto the tool.

The total depth of the borehole was 60m and prior to the borehole collapse, successful logging occurred in deeper sections of the borehole from 60m to 40m with the casing bottom at 50.10m and 35.10m. The casing was pulled back in sections as a precaution to prevent borehole collapse. This technique was performed in the previous 7 boreholes of the campaign successfully. In addition, a caliper log was performed before running the PS logger to check for cavities – none were shown.
The borehole consisted of sand/gravel/clay down to 17.60m and fine to medium grained sand after this down to TD (60m).

(Continue on separate sheet if necessary)

Immediate action(s) to prevent recurrence:

Once the tool was stuck, here are the steps that were taken to try and free the tool and prevent damage to it:

1st step: Released some slack on the wireline and tried to play with the wire manually with my hands – push and pull – in every direction. The tool did not move.
2nd step: Contacted the Fugro Wireline Operations Supervisor for some extra guidance and referred to our tool recovery operations manual.
3rd step: Drillers rotated the geo-bore and moved it up and down slightly in case a centraliser was stuck on the casing shoe.
3rd step: Pulled up on Wireline GV winch (300kg) for 30-45 mins, went through 2 fuses on the winch. Wire did come up in short bursts of around 0.2m (3 or 4 times approx.). But later stopped coming up at all.
4th step: Had a tool-box talk/discussion with the drillers before attaching the T-bar to the wire and pulling slowly using the rig winch. Tool slowly came up (1-2m approx.) before cablehead broke and only the wire came up-to the surface (no tool or cable-head).

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	5th step: Core barrel used to try and drill back into the sand and retrieve the tool.
	(Continue on separate sheet if necessary)

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CONSEQUENCE(S)	Injured Party (IP): … Injured Body Part: … Type of Injury: …	Employee Type: … # of prior hours worked: … # of prior days worked: …
	List of other personnel involved/affected: (include Direct Supervisor) …	
	Substance Discharged: … Released to: …	Amount: … Unit: …
	Property Owner: Fugro Damaged or Lost Equipment: P- and S-Wave Suspension logger (PSL) with centralisers and attached cable head	Est. Value of Loss: £36173 excl. VAT and excluding rental costs of replacing the equipment temporarily until replacement tool will be purchased and delivered
	Mode of Transportation: … Driver's Name (*if vehicle incident*): …	Type of Owner: …
INVESTIGATION	Lead Investigator: …	Other Team Members: …
	General Notes/Contributing Factors: (Continue on separate sheet if necessary)	
	Immediate Causes: (Continue on separate sheet if necessary)	
	Root Causes: (Continue on separate sheet if necessary)	

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ACTION(S)	Action #	Actions to be taken	Responsible Person	Target Date
	1	Enter SMART actions here	Enter Name here	dd/mm/yy
	2	Enter SMART actions here	Enter Name here	dd/mm/yy
	3	Enter SMART actions here	Enter Name here	dd/mm/yy
	4	Enter SMART actions here	Enter Name here	dd/mm/yy
	5	Enter SMART actions here	Enter Name here	dd/mm/yy
	6	Enter SMART actions here	Enter Name here	dd/mm/yy
	7	Enter SMART actions here	Enter Name here	dd/mm/yy
	8	Enter SMART actions here	Enter Name here	dd/mm/yy
	9	Enter SMART actions here	Enter Name here	dd/mm/yy
	10	Enter SMART actions here	Enter Name here	dd/mm/yy

Appendices: (Attach sketches, photographs, storyboards, local reporting requirements etc)



Figure 1: A photograph of what was retrieved in the core barrel by the drillers



Figure 2: A photograph of PS Logger tool

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PSL		Microseismic P- and S- Wave Log
Logged parameters		Traveltime of elastic p-and s-waves [s]
Tool parameters	diameter	51 mm
	length	5.74 m / 4.64 m / 4.02 m depending on length of isolator tube
	weight	25.0 kg
	max. p / max. T	50 bar / n.s.
Measurement range	bh diameter	75 - 200 mm
	time window	max. 40 ms
	time sampling	selectable 2.5 / 5.0 / 10.0 / 20.0 / 40.0 µs
Lateral investigation depth		<0.2 m
Vertical resolution		1.0 m
Accuracy		s. time sampling
Mode of operation		Stationary
Vertical sampling rate		typically 0.5 / 1.0 / 5.0 m
Logging direction		not critical
Tool position in borehole		not critical / centralisation recommended
Logging speed		3-5 minutes / station
QA/QC		No calibtration required
		Velocity check in steel casing
Other		Transmitter frequency = 5 kHz
		depending on expected formation velocity, long or short isolator tube is applied
		UR ... upper receiver
		LR ... lower receiver
		T ... transmitter

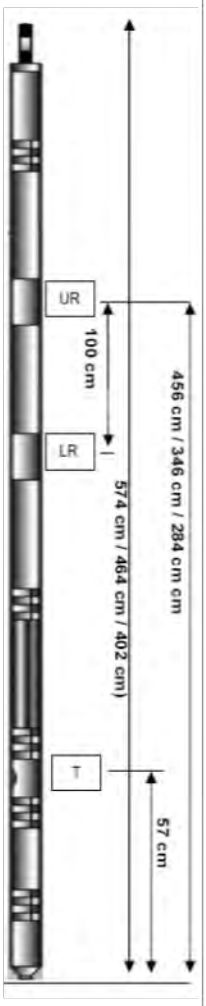

Figure 3: Data Sheet of PS Logger tool

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Appendices

Appendix A Guidelines on Use of Report

A.1 Guidelines on Use of Report

Appendix B Cone Penetration Tests

B.1 Cone Penetration Tests

Appendix C Geotechnical Classification Systems

C.1 Soil Classification Systems

C.2 Rock Classification System

Appendix D Laboratory Standards

D.1 Laboratory Testing Methods: Standards and Statements

Appendix E Positioning Data

E.1 Positioning and Water Depth Data

E.2 Positioning Reports

Appendix F Vessel Data

F.1 Equipment Datasheets

Appendix A

Guidelines on Use of Report

A.1 Guidelines on Use of Report

The scope of the investigation was determined by Sure Partners Limited for the particular project requirements set out in the Specification for the Contract.

The data presented in this report reflects the site conditions encountered at the time the investigation was performed. The investigation has disclosed evidence of conditions at point locations across the site which provides information about discrete volumes of soil or rock. Accordingly, there may be ground conditions at the site which may not have been revealed by the investigation, and the passage of time may give rise to changes in the conditions encountered. Any interpolation or extrapolation of strata from the exploratory holes is subject to the interpretation of the reader. Any cross sections or plots are generalised by necessity and have been based on information found at the exploratory locations and depths sampled and tested. The records should be read in conjunction with the Guidance Notes in Appendix C.

The investigation has been carried out by Fugro GeoServices Limited and the report has been prepared for the sole internal use of Sure Partners Limited. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Fugro GeoServices Limited. If an unauthorised third party comes into possession of this report they rely upon it at their peril and the authors owe them no duty of care and skill.

It is Fugro GeoServices Limited's understanding that this report is to be used for the purposes as described in the Specification for the investigation and as summarised in the text of the report. Should the purpose for which the report is used or the proposed use of the site change, this report may no longer be valid. Any further use or reliance upon the report in these circumstances by Sure Partners Limited without further review by and advice from Fugro GeoServices Limited shall be at their sole and own risk.

Appendix B

Cone Penetration Tests

B.1 Guidance Notes on Cone Penetration Test

B.1.1 Piezocone Penetrometer

B.1.1.1 Introduction

Piezocone penetration tests (CPTU) use an electrical measuring instrument to record in situ readings of cone resistance (q_c), sleeve friction (f_s) and pore-water pressure (PWP). The piezocone measures the transient pore pressure generated during penetration, which can be indicative and may be significant for some low permeability soils. A piezocone can also carry out pore-water pressure (u) dissipation testing at required intervals if penetration is temporarily ceased. These measurements then permit the estimation of the in situ coefficient of horizontal consolidation (c_h).

Commonly used piezocone penetrometers have 1,000 mm^2 and 1,500 mm^2 cone base areas and a single filter location. The filter location is either in the face of the cone or in the cylindrical extension above the base of the cone (i.e., cone shoulder). The cone and the friction sleeve consist of high-quality steel that is resistant to corrosion and abrasion. The filter consists of a porous plastic element. The sensors for the cone and friction sleeve comprise load cell type measuring transducers arranged in series. This arrangement permits a strong and stiff penetrometer design.

Penetrometer stiffness provides resistance to bending and relative movements of the various components, and hence increases the in situ accuracy. The pore pressure sensor is of the piezo-resistive type, requiring a very small volume change for the specified measuring range. The configuration of the filter, the internal connections and the pressure sensor facilitate practical and efficient saturation. An internal amplifier unit enhances the analogue signal-to-noise ratios of the sensors. This promotes high-quality data transmission. Figure B.1 presents the layout of a typical piezocone with the filters located in the face (u_1) and at the cone shoulder (u_2).

B.1.2 Operation and Calibration of the Cone

The cone end resistance and local side friction are registered by calibrated load cells in the cone. The cone penetrometer load cells and pressure transducers are regularly calibrated against load and pressure transducers which are themselves calibrated by an independent authority.

The pore-water pressure is recorded by means of a calibrated pressure transducer located in the piezocone tip. To ensure pore-water pressure measurements are not affected by the presence of air in the measuring transducer, a de-airing procedure is carried out prior to each test. This consists of injecting silicon oil (or a suitable miscible and viscous fluid) into the measuring parts of the cone and by using a pore pressure filter which has been saturated in silicon oil under vacuum. As a final precaution, a rubber sheath is placed over the filter to prevent the risk of de-saturation before the cone enters the soil.



Figure B.1: Piezocone Instrument with the Filter Locations

The rate of penetration during all tests is kept constant at approximately 20 mm/s. The signals from the measuring devices are transmitted by an umbilical cable through hollow push rods to a laptop computer. During the test, the computer displays instantaneous and continuous graphical records on its screen of cone end resistance, local side friction, and pore-water pressure, and these are plotted out after the test. The data are recorded at 20 mm depth intervals and this facility provides for automatic computer-controlled processing and plotting of cone end resistance, local side friction and friction ratio with pore-water pressure.

B.1.3 Calculation of Parameters

Typically for piezocone results two plots as described below are presented:

1. The first plot (Figure B.2) contains the basic data obtained during the test, i.e. cone end resistance, cone sleeve friction, the friction ratio and the pore-water pressure.
2. The second plot (Figure B.3) contains parameters derived from the basic data, i.e. net cone resistance (q_n), excess pore-water pressure ratio (B_q) and friction ratio (R_f). The second plot also includes the interpretation of the estimated soil type. The estimated soil type can be either automatically produced by our in-house software or manually assessed.

Net cone resistance (q_n) is defined as total cone resistance (q_t) minus the total overburden pressure relative to ground level (σ_{vo}). Total cone resistance (q_t) is the measured cone resistance corrected for the effects of cone shape and pore-water pressure distribution around the cone tip. The formulae used to calculate q_t and q_n are given below:

$$q_t = q_c + (1 - \alpha) \cdot (u_0 + \beta \Delta u)$$

Equation B.1

and

$$q_n = q_t - \sigma_{v0}$$

Equation B.2

Excess pore-water pressure ratio (Bq) is the ratio of the measured excess pore-water pressure to the net cone resistance defined as:

$$B_q = \left(\frac{\Delta u}{q_n}\right)$$

Equation B.3

Where:

B_q	= the excess pore-water pressure ratio
Δu	= the change in pore-water pressure
q_n	= the net cone resistance [kPa]

B.1.4 Introduction to Basic Interpretation of Cone Penetration Tests

B.1.4.1 Automatic Interpretation of the Soil Behaviour Type (SBT):

Robertson et al. (2015) devised a Soil Behaviour Type (SBT) chart in 1986 relating cone resistance (q_c) and friction ratio (R_f) to make reasonable soil type predictions. In 1990 a revised chart was proposed using normalised cone resistance (Q_t) and normalised friction ratio (F_r), which takes into consideration in situ vertical stress effects; requiring knowledge of water depth, pore-water pressure and soil density.

In 2009, the normalised chart was revised further to consider increasing density, OCR, age and cementation for granular soils and stress history and soil sensitivity in cohesive soils. This chart plots normalised cone resistance (Q_{tn}) adjusted for a stress exponent (n) which varies with soil type and stress level. In 2010, Robertson revised the non-normalised (1986) chart to reduce the number of zones to match those in the normalised chart.

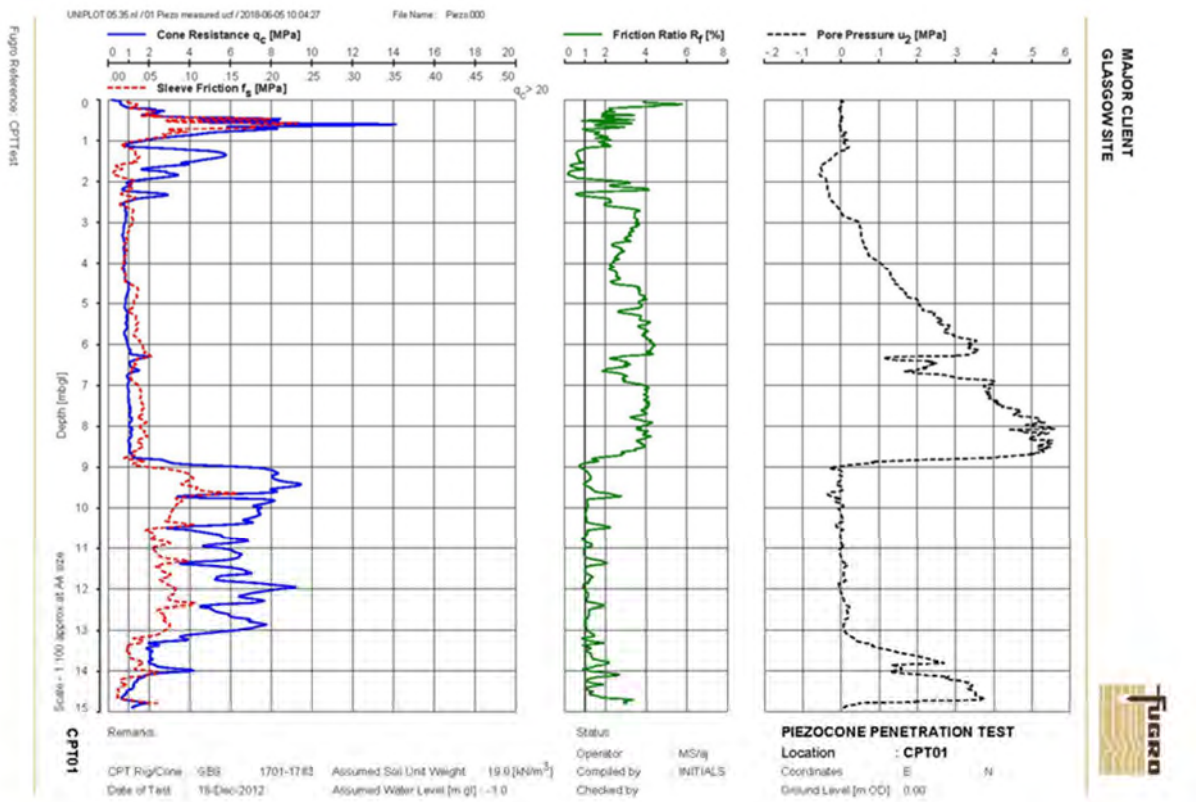


Figure B.2: Typical Piezocone Test Plot – Measured Data

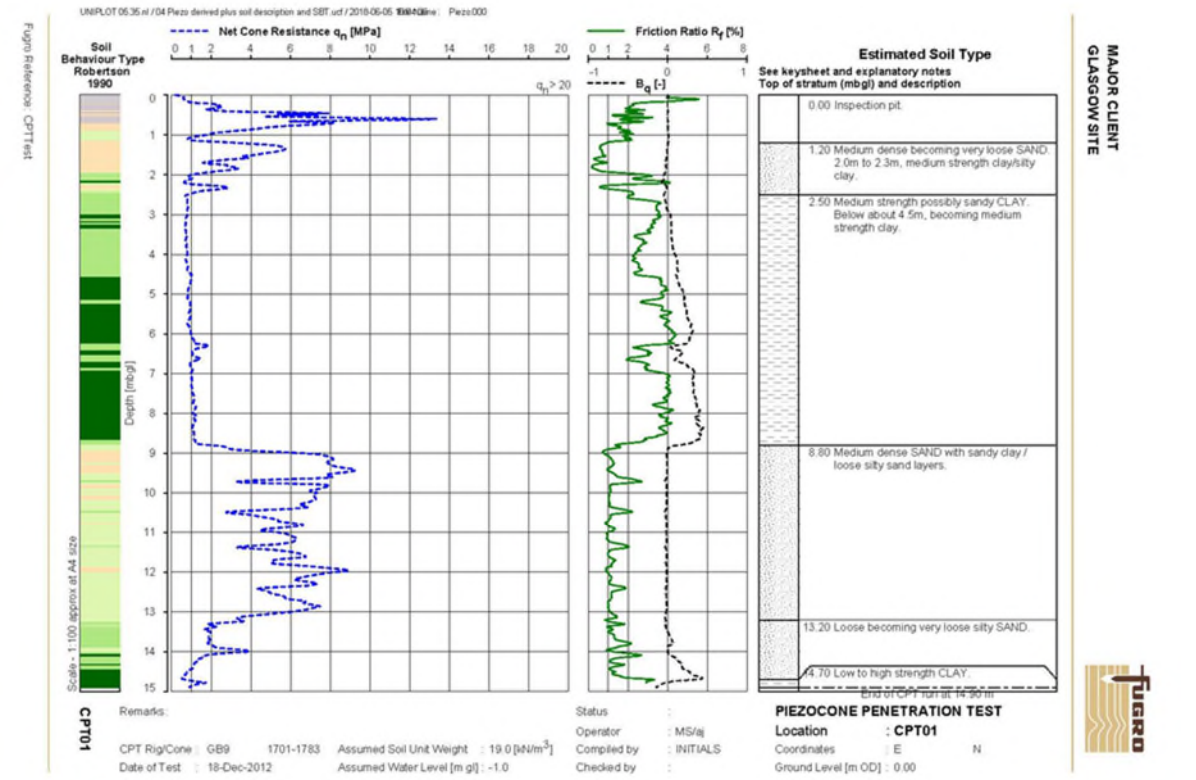


Figure B.3: Typical Piezocone Test Plot – Derived Data with Estimated Soil Type

The 2009 and 2010 SBT charts and the colour schemes used to identify the zones are given in Figure B.4 and Table B.1 respectively.

The normalised cone resistance and friction ratio can be combined into one SBT Index (I_c), devised by Robertson.

$$I_c = \sqrt{[(3.47 - \log Q_{tn})^2 + (1.22 + \log F_r)^2]}$$

Equation B.4

Where:

I_c = the normalised Soil Behaviour Type Index

Q_{tn} = the normalised cone resistance (dimensionless)

F_r = the normalised friction ratio

For non-normalised data the SBT Index (I_{SBT}) the following equation should be used:

$$I_{SBT} = \sqrt{\left[(3.47 - log(q_c/P_a))^2 + \left(log\, R_f + 1.22\right)^2\right]}$$

Equation B.5

Where:

I_{SBT} = the non-normalised Soil Behaviour Type index

q_c = the cone resistance [kPa]

P_a = the atmospheric pressure, assumed to be 100 kPa

R_f = the friction ratio [%]

The corresponding SBT Index I_c and I_{SBT} are presented in Table B.1 except where not applicable (SBT zones 1, 8 and 9).

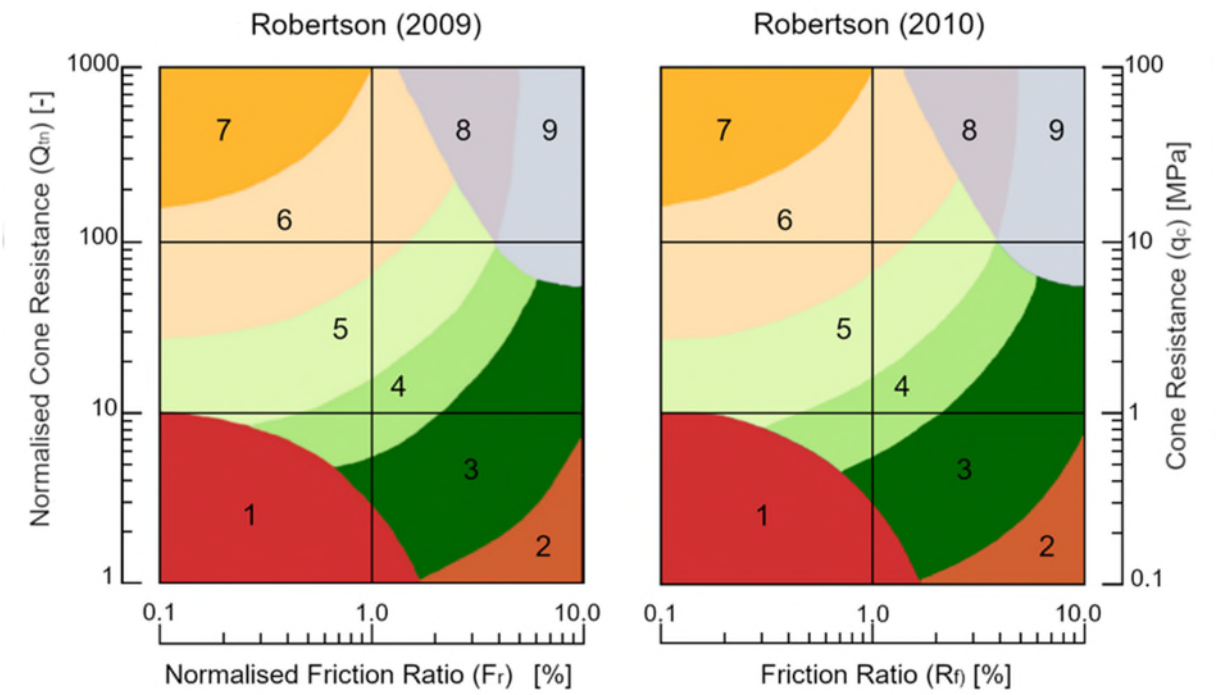


Figure B.4: Robertson SBT Charts for Normalised (2009) and Non-normalised (2010) CPT Data

Table B.1: SBT Zones for Soil Classification with Soil Behaviour Index (I_c)

Soil Behaviour Type	SBT Zone	SBT Index I_c
Sensitive, fine grained	1	N/A
Organic soils – clay	2	> 3.6
Clays – silty clay to clay	3	2.95 – 3.60
Silt mixtures – clayey silt to silty clay	4	2.60 – 2.95
Sand mixtures – silty sand to sandy silt	5	2.05 – 2.60
Sands – clean sand to silty sand	6	1.31 – 2.05
Gravelly sand to dense sand	7	< 1.31
"Very stiff" sand to clayey sand *	8	N/A
Very stiff, fine grained *	9	N/A

Notes:
* - Heavily overconsolidated or cemented
N/A – Soil Behaviour Type Index not applicable to SBT Zones 1, 8 and 9

B.1.4.2 Manual Interpretation of Estimated Soil Behaviour Type

Where a manual assessment of the estimated soil behaviour type has been made, a comparison of CPT data and the SBT has been made alongside appropriate geotechnical borehole records.

A typical soil layer will be described with a strength or density, the principal soil type and details of any interlayers or interbeds that may differ from the main soil layer description.

The strength terms and densities used in the interpretations are based on the cone resistance (q_c) for a friction cone, or net cone resistance (q_n) for a piezocone. The undrained strength terms used are presented in Table B.2 and density index terms are presented in Table B.3

Table B.2: Undrained Shear Strength Terms

Strength Term	Undrained Shear Strength Value * [kPa]	Cone Resistance or Net Cone Resistance Value † [MPa]
Extremely Low	< 10	< 0.2
Very Low	20	0.4
Low	40	0.7
Medium	75	1.3
High	150	2.4
Very High	300	4.5
Extremely High	> 300	> 4.5

Notes:
* - Taken from Table 6 in BS EN ISO 14688-2:2018
† - Using the calculation of Rad and Lunne (1988) with Nk values ranging from 20 to 15 (increasing in strength)

Table B.3: Density Index Terms relating to Cone Resistance, Angle of Shearing and Equivalent SPT N_{60}-values

Density Index Term	Cone Resistance (q_c) [MPa]	Density Index Value [%] †	Effective Angle of Shearing Resistance ϕ' [degrees] related to q_c value *	SPT N_{60}-value Normalised related to I_D term and value †
Very Loose	< 2.5	0 – 15	29 – 32	< 3
Loose	2.5 – 5	15 – 35	32 – 35	3 – 8
Medium Dense	5 – 10	35 – 65	35 – 37	8 – 25
Dense	10 – 20	65 – 85	37 – 40	25 – 42
Very Dense	> 20	85 – 100	40 – 42	42 – 58

Notes:
* Taken from Table D.1 in EN 1997-2:2007 Annex D
† - Taken from Table F.1 in EN 1997-2:2007 Annex F

The results of the CPT should not be considered entirely reliable in all soil types. Sensitive soils with a friction ratio less than about 3 % and a cone resistance of less than about 1 MPa, and organic soils with a friction ratio of greater than about 6 % may be affected by pore pressures around the tip and against the friction sleeve. These effects may be reduced by measuring pore pressures using the piezocone. It should be recognised that in some conditions the piezocone results may be unreliable due to de-saturation. Over-consolidated clay soils or weathered weak rocks as well as consolidated or cemented clayey sands should also be treated with caution. The CPT interpretations are for normally occurring soil types. They will not apply to non-siliceous soils, such as calcareous or carbonaceous materials and they will be affected by semi saturated or gas containing materials. The SBT system is not a soil classification system and the zone boundaries are gradational. Independent studies have

shown the normalised SBT system typically to be at least 80% reliable when compared with samples.

Caution should be exercised when using CPT results to derive parameters for design purposes. Such determinations test only a small volume of soil and the permeability value of the soil mass may be significantly different from the values derived from these tests.

The CPT friction cones used by Fugro are type TE1 and the piezocones are type TE2. The friction cones may be used for Application Classes 2 to 4 and the piezocones for applications 1 to 3. The perceived applicability of the CPT and CPTU for direct design requirements and are presented in Table B.4 (Robertson, 2015).

Table B.4: Perceived Applicability of CPT for Deriving Direct Design Requirements

Type of Soil	Pile Design	Bearing Capacity	Settlement	Compaction Control	Liquefaction
Sand	1 – 2	1 – 2	2 – 3	1 – 2	1 – 2
Clay	1 – 2	1 – 2	2 – 3	3 – 4	1 – 2
Intermediate soils	1 – 2	2 – 3	2 – 4	2 – 3	1– 2

Notes:
Applicability / Reliability Rating:
1 = High;
2 = High to Moderate;
3 = Moderate;
4 = Moderate to Low;
5 = Low

For the calculation of the various parameters, assumed values of the water level; the coefficient of earth pressure (K_0) and the soil unit weight are used as specified in the main text of this report and on the plots themselves. The estimated soil descriptions have not been amended for the specific results of any parameter classifications that may have been undertaken.

The perceived applicability of the CPT and CPTU for deriving soil parameters are presented in Table B.5 (Robertson, 2015).

Table B.5: Perceived Applicability of CPT for Deriving Soil Parameters

	Soil Type Applicability/Reliability Rating	
	Sand	Clay
Density Index [I_D]	2 – 3	NA
In Situ Stress Ratio [K_0]	5	2
Over Consolidation Ratio [OCR]	5	1
Sensitivity [Sens]	NA	2
Undrained Shear Strength [c_u]	NA	1 – 2
Friction Angle [ϕ']	2 – 3	4
Young's and Shear Moduli [E , G $*$]	2 – 3	2 – 4
Compressibility [M]	2 – 3	2 – 3
Small Strain Shear Moduli [G_0*]	2 – 3	2 – 4
Coefficient of Consolidation [c_h]	3 – 4	2 – 3
Permeability [k_h]	3 – 4	2 – 3

Notes:
Applicability/Reliability Rating:
1 = High;
2 = High to Moderate;
3 = Moderate;
4 = Moderate to Low;
5 = Low;
NA = Not applicable.
* - Improves with CPTU data

B.1.5 Calculations Used in CPT Derived Engineering Parameters

Density Index

$$I_D(dry) = \frac{1}{0.0296} \cdot ln\left[q_c \Big/ 2.494 \cdot \left[\frac{\sigma'_{v0} \cdot \left[\frac{1+2\cdot K_0}{3}\right]}{100}\right]^{0.46}\right]$$

Equation B.6 Jamiolkowski (2003)

$$I_D(sat) = \left\{\frac{-1.87 + 2.32 \ln \frac{1000 q_c}{(100\sigma'_{v0})^{0.5}}}{100} + 1\right\} I_D(dry)$$

Equation B.7 Jamiolkowski (2003)

Where:

$I_D(dry)$ = the estimated density index [%] in the dry condition

$I_D(sat)$ = the estimated density index [%] in the saturated condition

q_c = the measured cone end resistance [MPa]

σ'_{v0} = the effective overburden pressure [kPa]

K_0 = the coefficient of earth pressure

Undrained Shear Strength

$$c_u = (1000q_n)/N_k \qquad or \qquad c_u = (1000q_c - \sigma_{v0})/N_c$$

Equation B.8: Rad and Lunne (1988) and Battaglio et al. (1986)

Where:

c_u = the inferred undrained shear strength [kPa]

q_c = the measured cone resistance [MPa]

q_n = the net cone resistance [MPa]

$N_k or\ N_c$ = an empirical factor relating cone resistance to undrained shear strength

σ_{v0} = the total overburden pressure [kPa]

Equivalent SPT N_{60}-value

$$N_{60} = \frac{q_t/P_a}{10^{(1.1268-0.2817I_c)}}$$

Equation B.9: Robertson et al. (2015)

Where: *N*

N_{60} = the equivalent SPT *N*-value for an energy ratio of 60 %

q_t = the corrected cone resistance

P_a = the atmospheric pressure, assumed to be 100 [kPa]

I_c = the soil behaviour type index

Effective Angle of Shearing Resistance

$$\phi' = 17.6 + 11\log\left(\frac{10q_t}{(\sigma'_{v0}/100)^{0.5}}\right)$$

Equation B.10: Mayne (2007)

Where:

ϕ' = the effective angle of shearing resistance

q_t = the corrected cone resistance [MPa]

σ'_{v0} = the effective vertical stress [kPa]

Constrained Modulus

$$M = 8.25(q_t - (\sigma_{vo}/1000)\ or\ 8.25q_n$$

Equation B.11: Kulhawy and Mayne (1990)

Where:

M = the constrained modulus

q_t = the corrected cone end resistance [MPa]

σ_{v0} = the total overburden pressure [kPa]

q_n = the net cone resistance

Volume of Compressibility

$$M = \frac{1}{m_v}$$

Equation B.12

Where:

M = the Constrained Modulus

m_v = the Volume of Compressibility

Small Strain Shear Modulus

For cohesive materials:

$$G_{max} = 0.00287(1000q_c)^{1.335}$$

Equation B.13: Mayne and Rix (1993)

For granular materials:

$$G_{max} = 1.634(1000q_c)^{0.25}.(\sigma'_{v0})^{0.375}$$

Equation B.14: Rix and Stokoe (1991)

Where:

G_{max} = the maximum small strain shear modulus [MPa]

q_c = the measured cone resistance [MPa]

σ'_{v0} = the effective vertical stress [kPa]

Coefficient of Horizontal Consolidation

$$c_h = \frac{T^*(r^2\sqrt{I_r})}{t}$$

Equation B.15: Teh and Houlsby (1991)

Where:

c_h = the coefficient of horizontal consolidation

T^* = the modified time factor

r = the radius of the probe

I_r = the rigidity index, assumed to be 100

t = the actual time

Coefficient of Horizontal Permeability

$$k_h = \frac{c_h \cdot \gamma_w}{M}$$

Equation B.16: Lunne et al. (1997)

Where:

k_h = the coefficient of permeability in the horizontal direction

c_h = the coefficient of consolidation in horizontal direction

M = the constrained modulus (calculated as 8.25q_n from Kulhawy and Mayne (1990))

y_w = the unit weight of water assumed at 10kN/m3

B.1.6 Abbreviations and Symbols

Table B.6: Abbreviations

Symbols	Term or Definition
AGS	Association of Geotechnical and Geoenvironmental Specialists
CPT	Cone penetration test
CPTU	Cone penetration test with measured pore-water pressure
SCPT	Seismic cone penetration test
ROST	Rapid optical screening tool
LIF	Laser induced fluorescence
MIP	Membrane interface probe
SBT	Soil behaviour type
SPT	Standard penetration test
SPT *N*-value	Number of standard penetration test blows for 300 mm penetration.
SPT N_{60}-value	Equivalent SPT *N*-value for energy ratio of 60%
UXO	Unexploded ordnance
MOSTAP	Monster Steek Apparaat Sample
BH	Borehole
PWP	Pore-water pressure

Table B.7: Symbols

Symbol	Unit	Term or Definition
Standard Cone Measurements and Factors – Friction and Piezocone		
q_c	[MPa]	Measured cone end resistance
q_t	[MPa]	Total cone end resistance corrected for PWP effects
q_n	[MPa]	Net cone end resistance
f_s	[MPa]	Sleeve friction
R_f	[%]	Friction ratio – sleeve friction to cone end resistance ratio
Bq	[-]	Excess pore-water pressure ratio
α	[-]	Cone shaft to face area ratio; 0.58 for 15 cm^2 cones, 0.75 for 10 cm^2 cones
β	[-]	Value of excess PWP cone ratio; 0.8 for face (u_1) and 1.0 for shoulder (u_2)
u_0	[MPa]	Theoretical hydrostatic PWP relative to ground level acting at the cone elevation
u_1	[MPa]	The measured PWP relative to ground level acting at the cone face
u_2	[MPa]	The measured PWP relative to ground level acting at the cone shoulder
Δu	[MPa]	The PWP in excess of hydrostatic pore-water pressure
I_c / I_{SBT}	[-]	Soil behaviour type index (normalised/non-normalised)
Normalised Parameters for Overburden Pressure		
Q_t	[-]	Normalised cone resistance
F_r	[-]	Normalised friction ratio
SBT_N	[-]	Normalised soil behaviour type
Strength and Various Parameters		
I_D	[%]	Density index – equivalent to relative density D_r
ϕ'	[degrees]	Effective angle of shearing resistance
c_u	[kPa]	Undrained shear strength
N_k or N_c		Bearing capacity factors; normally taken as 15 to 20 with values from 4 to > 30
$G_{\max}$	[-]	Maximum small strain shear modulus
E	[-]	Young's modulus
OCR	[-]	Overconsolidation ratio
Pressure		
σ_{v0}	[kPa]	The total overburden pressure relative to ground level
P_a	[kPa]	Atmospheric pressure taken as 100 kPa
σ'_{v0}	[kPa]	The effective overburden pressure
K_0	[-]	The coefficient of earth pressure
Consolidation and Permeability		
c_h	[m^2/s]	Coefficient of consolidation in the horizontal direction
γ_w	[kN/m^3]	Unit weight of water
γ	[kN/m^3]	Unit weight of soil
u_t	[MPa]	Pore-water pressure at time, t

Symbol	Unit	Term or Definition
u_i	[MPa]	Initial pore-water pressure at $t = 0$
T^*	[-]	Modified time factor (from Teh and Houlsby)
t	[s]	Actual elapsed time
r	[m]	Radius of probe
Ir	[-]	Rigidity index (assumed to be 100)
k_h	[m/s]	Coefficient of permeability in the horizontal direction
Compression		
m_h	[m^2/MN]	Coefficient of volume compressibility in the horizontal direction
m_v	[m^2/MN]	Coefficient of volume compressibility in the vertical direction
α_M	[-]	factor generally taken between 5 and 7.5 (normally 6)
M	[MPa]	Constrained Modulus

Appendix C

Geotechnical Classification Systems

C.1 Soil Classification Systems

The site investigation followed two standards for soil description and classification:

- BS EN ISO 14688-1:2018 Geotechnical investigation and testing. Identification and classification of soil. Identification and description (BSI, 2018);
- BS EN ISO 14688-2:2018 Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification (BSI, 2018).
- Soil Mechanics Lambe and Whitman 1969

Based on these two standards, the consistency of cohesive soils was determined offshore using the procedure outlined in Table C.1.

Table C.1: Ranges of consistency for soil description

Consistency	Field Assessment
Very soft	Exudes between the fingers when squeezed in the hand
Soft	Can be moulded by light finger pressure
Firm	Cannot be moulded by the fingers but can be rolled in the hand to 3 mm thick threads without breaking or crumbling
Stiff	Crumbles and breaks when rolled to 3 mm thick threads but is still sufficiently moist to be moulded to a lump again
Very stiff	Soil has dried out and is mostly light coloured. Cannot be moulded but crumbles under pressure. Can be indented by the thumbnail

Undrained shear strength of fine soils is defined by the results of basic laboratory and field tests. Table C.2 explains the terms for characterising undrained shear strength. An additional range for ultra high strength soils is included to cover the full range of soil strengths.

Table C.2: Undrained shear strength of fine soils for soil description

Strength Term	Undrained Shear Strength [kPa]
Extremely low	< 10
Very low	10 – 20
Low	20 – 40
Medium	40 – 75
High	75 – 150
Very high	150 – 300
Extremely high	300 – 600
Ultra high	> 600

Table C.3 presents the ranges of relative density (Lambe & Whitman, 1969) on which the limits of consistency adopted in sand soils are based.

Table C.3: Ranges of relative density for soil description

Relative Density Term	Relative Density [%]
Very loose	0 – 15
Loose	15 – 35
Medium dense	35 – 65
Dense	65 – 85
Very dense	85 – 100

Fugro has a standard code of practice that aims to standardise soil descriptions in accordance with BS 5930:2015+A1:2020 (BSI, 2015), as far as the differing frameworks allow. Fugro has adopted qualitative terms which are equivalent to those suggested in BS 5930:2015+A1:2020. These are listed in Table C.4.

Table C.4: Descriptive terms for minor constituents

BS 5930:2015 Suggested Term	Fugro Standard Term	% by Volume*
Rare	With trace	< 1
Occasional	With a few	1 – 5
NA	With	> 5 – 15
Frequent	With many	> 15
Notes NA = Not applicable: the BSI does not have a suggested term for this minor constituent * = Estimated visually		

C.2 Rock Classification System

Table C.5 lists the limits of strength adopted for rock, based on BS EN ISO 14689:2018 (BSI, 2018d).

Table C.5: Ranges of strength for field assessment based on uniaxial compressive stress

Term	Definition for Field Use	Unconfined Compressive Strength [MPa]
Extremely weak	Can be indented by thumbnail. Gravel-sized lumps crush between finger and thumb	0 – 1.25
Very weak	Crumbles under firm blows with point of geological hammer. Can be peeled by a pocket knife	1.25 – 5
Weak	Can be peeled by a pocket knife with difficulty. Shallow indentations made by firm blow with the point of geological hammer	5 – 12.5
Moderately weak	Can be scratched with difficulty with pocket knife. Hand-held specimens can be broken with single firm blow of geological hammer	12.5 – 25
Medium strong	Cannot be scraped with pocket knife. Can be fractured with a single firm blow of geological hammer	12.5 – 50

Term	Definition for Field Use	Unconfined Compressive Strength [MPa]
Strong	Requires more than one blow of geological hammer to fracture	50 – 100
Very strong	Requires many blows of geological hammer to fracture	100 – 200
Extremely strong	Can only be chipped with geological hammer	> 200

Table C.6 presents the weathering classes and characteristics of this approach, based on BS EN ISO 14689:2018 (BSI, 2018d).

Table C.6: Scale of weathering stages of rock mass (BS EN ISO 14689:2018)

Grade	Classifier	Typical Characteristics
0	Fresh	No visible sign of rock material weathering; perhaps slight discoloration on major discontinuity surfaces
1	Slightly weathered	Discolouration indicates weathering of rock material and discontinuity surfaces
2	Moderately weathered	Less than half of the rock material is decomposed or disintegrated. Fresh or discoloured rock is present either as a continuous framework or as core stones
3	Highly weathered	More than half the rock is decomposed or disintegrated. Fresh or discoloured rock is present either as a continuous framework or as core stones
4	Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact
5	Residual soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported

For fracture state indices, Fugro follows BS 5930:2015+A1:2020 (BSI, 2015), shown in Table C.7. Total core recovery, solid core recovery, rock quality designation and fracture index are reported per core run. Fracture spacing is reported per stratum.

Table C.7: Definitions of fracture state indices

Index	Abbreviation	Unit	Description According to BS 5930:2015+A1:2020
Total core recovery	TCR	%	Ratio of core recovered (solid and non-intact) to length of core run
Solid core recovery	SCR	%	Ratio of solid core recovered to length of core run
Rock quality designation	RQD	%	Ratio of solid core pieces longer than 100 mm to length of core run
Fracture index	FI	NA	Number of fractures per m Measured over an arbitrary length of core of similar intensity of fracturing Reported offshore for every core run
Fracture spacing	If	mm	Reported as minimum, average and maximum Reported offshore as spacing term per stratum Where core is non-intact in the ground, the abbreviation NI may be used

Index	Abbreviation	Unit	Description According to BS 5930:2015+A1:2020
Notes The Geological Strength Index (GSI) was also used and reported for each unit on the borehole log			

Appendix D

Laboratory Standards

D.1 Laboratory Testing Methods: Standards and Statements

Table D.1 lists the standards and procedures for laboratory tests performed during this project. Non-standard laboratory test procedures (i.e. Fugro in-house testing procedures) are described; where tests are performed according to national and/or international standards, only the applicable standard number is referenced.

Table D.1: Laboratory method standards and statements

Laboratory Tests	Standard Reference or Fugro Document Number
Classification and Index Tests	
Moisture content	BS EN ISO 17892-1:2014 (BSI, 2014)
Bulk and dry density	BS EN ISO 17892-2:2014 (BSI, 2014)
Torvane	In house method
Pocket penetrometer	In house method
Total Stress Tests	
Unconfined undrained triaxial test	BS EN ISO 17892-8:2018 (BSI, 2018)
Rock Tests	
Point load test	ISRM Suggested Methods – Point Load Tests ISRM (2007)
Other Tests	
Thermal Resistivity	Manufacturer's Guidelines in accordance with ASTM D5534-00

Appendix E

Positioning Data

E.1 Positioning and Water Depth Data

E.1.1 Introduction

Target coordinates for all borehole locations were specified by Sure Partners Limited and the actual coordinates were approved prior to borehole and cone penetration test operations. The coordinates presented are the actual location coordinates. Coordinates for all boreholes are expressed using the Universal Transverse Mercator (UTM) projection 30N, International Spheroid, with a central meridian of 3° west. Table E.1 summarises the project geodetic and projection parameters.

Table E.1: Project geodetic and projection parameters

Parameter	
Project Geodetic Datum	
Geodetic Datum	World Geodetic System 1984
Ellipsoid	WGS 84
Semi major axis	a = 6 378 137.00 m
Inverse Flattening	1/f = 298.257223563
Project Projection Parameters	
Projection	Transverse Mercator
Grid System	UTM Zone 30N
Latitude of Origin	00° 00′ 00.000″ N
Central Meridian	003° 00′ 00.000″ W
Scale Factor on Central Meridian	0.9996
False Easting	500 000 m
False Northing	0 m
Project Vertical Parameters	
Vertical Coordinate Reference System	VORF LAT Height
Datum	VORF LAT Datum
Transformation	ETRS89 to VORF LAT

Water depths are reduced to the Lowest Astronomical Tide (LAT). It should be noted that all water depth measurements made during this investigation are considered sufficiently accurate for geotechnical use but should not be used in isolation for design purposes.

The final coordinates and water depth measurements for the investigated locations are summarised in Table E.2. Appendix E.2 presents the mean position reports and the STARFIX® calibration report.

Table E.2: Preliminary Coordinates and Water Depth Measurements

Exploratory Position Reference	Easting [m]	Northing [m]	Elevation [m LAT]	Final Depth [m]	Cantilever to Mudline [m]	Cantilever to LAT [m]
BH01	303547.62	5866922.76	-24.80	75.00	42.10	17.30
BH08	301523.68	5856887.61	-19.40	57.80	34.30	14.90
BH09	300261.5	5853958.52	-30.50	55.50	45.70	15.20
BH10	301945.77	5852228.48	-32.50	62.50	48.60	32.50
BH12	299352.92	5847931.47	-20.40	53.50	35.70	15.30
BH13	300820.59	5847130.59	-38.10	51.50	54.50	16.40
BH20	303136.14	5857856.82	-28.40	60.10	44.50	16.10
BH26	297804.74	5842066.43	-27.80	59.30	46.60	18.80
BH28	302479.91	5863159	-38.70	69.50	43.60	15.80

Notes:
Coordinate System: UTM Zone 30 N.
LAT = Lowest Astronomical Tide.
BSL = Below seabed level

E.2 Positioning Reports

Description	Document Number
Mean Position Reports	Referenced by Location
Mobilisation and Calibration Report	FGBNM-210537-R01

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH01 MPR final fix-v1
Start Time	06 Jun 2022, 13:41:33+01:00
End Time	06 Jun 2022, 13:51:32+01:00
Session Length	9m 59s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 54′ 57.55955″ N	52° 54′ 57.55955″ N
Longitude	005° 55′ 19.12755″ W	005° 55′ 19.12755″ W
Height	71.651 m Ell., 0.006 m ISS	71.651 m Ell., 15.513 m Ort.
Easting	303 547.617 m E (± 0.08 m)	
Northing	5 866 922.763 m N (± 0.13 m)	
Height	17.317 m CD (± 0.18 m) , 0.006 m ISS (± 0.10 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	202.0° T, 204.3° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	24.7 m	Supplied by Client

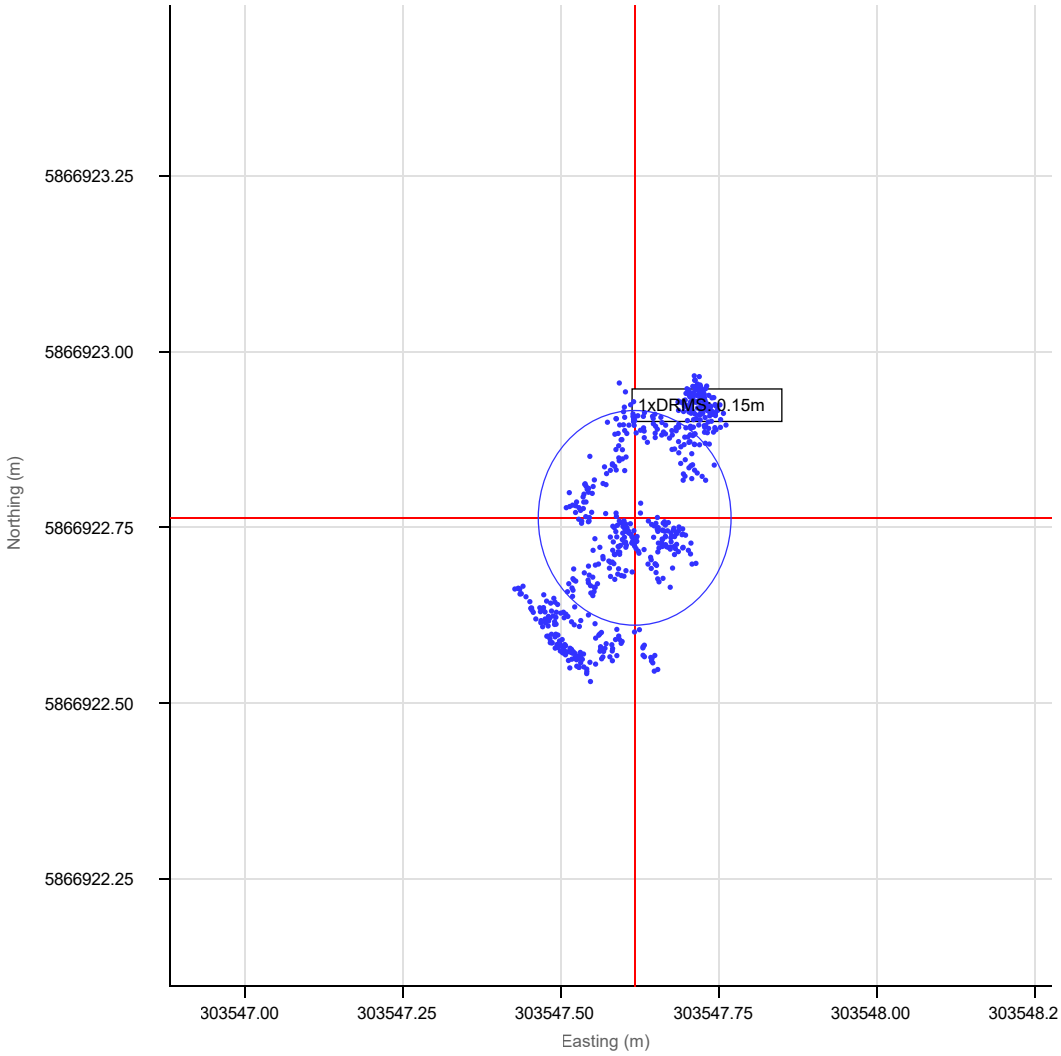
Table 7: Mean Position to Target

Target	BH01		
Position	303 547.000 m E, 5 866 923.000 m N		
Range	0.66 m Grid		
Bearing To	291.0° G	Bearing From	111.0° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

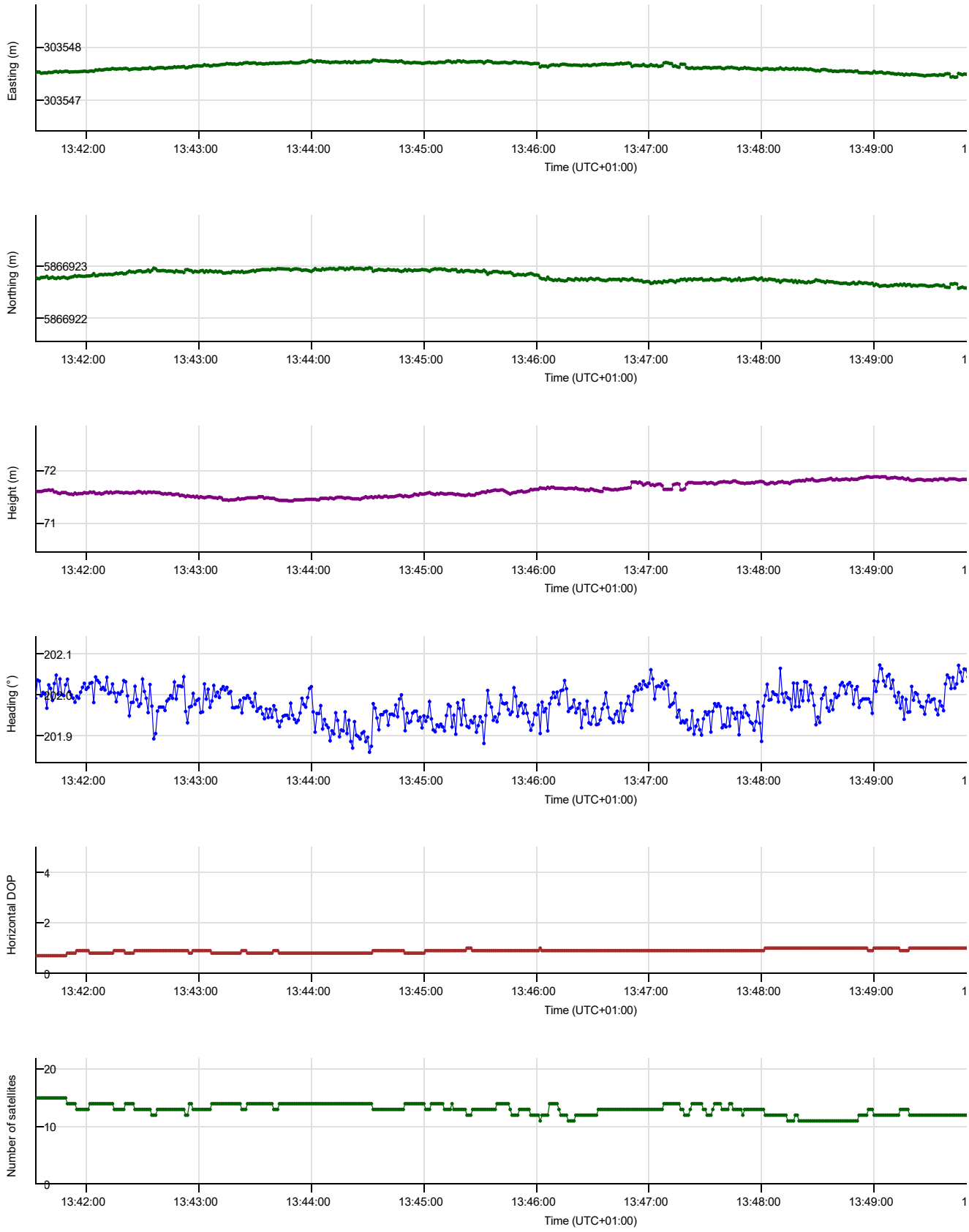
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	600 of 600
Position	303 547.617 m E, 5 866 922.763 m N ,17.317 m CD
Heading	202.0° T, 204.3° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	303 547.617 m E	5 866 922.763 m N

Figure 2: Time series plots for Deme Neptune



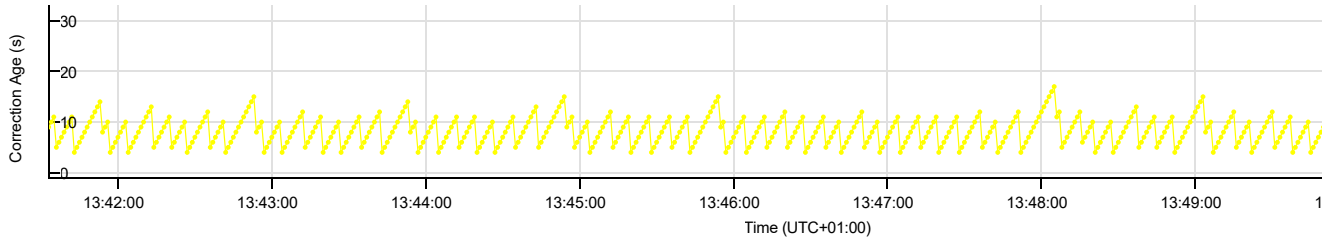


Table 9: Remarks

```
Cantilever to Mud = 42.10m;
Cantilever to LAT = 17.30m;
LAT to Mud = 24.80m;

Leg positions:
Fwd Port: 303532.30m, 5866900.02m;
Fwd Stbd: 303504.05m, 5866912.78m;
Aft Port: 303551.74m, 5866943.03m;
Aft Stbd: 303523.45m, 5866955.82m
```

Tomasz Michalowski
Party Chief
FGBNM (Fugro Great Britain North Marine)

Robert Fraser
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH08 MPR Final Fix-v3
Start Time	10 Jul 2022, 20:27:24+01:00
End Time	10 Jul 2022, 20:37:25+01:00
Session Length	10m 1s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 49′ 30.54853″ N	52° 49′ 30.54853″ N
Longitude	005° 56′ 45.32984″ W	005° 56′ 45.32984″ W
Height	69.534 m Ell., -0.013 m ISS	69.534 m Ell., 13.385 m Ort.
Easting	301 523.679 m E (± 0.04 m)	
Northing	5 856 887.613 m N (± 0.02 m)	
Height	14.941 m CD (± 0.13 m) , -0.013 m ISS (± 0.04 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	14.2° T, 16.5° G	± 0.1°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	19.5 m	Supplied by Client

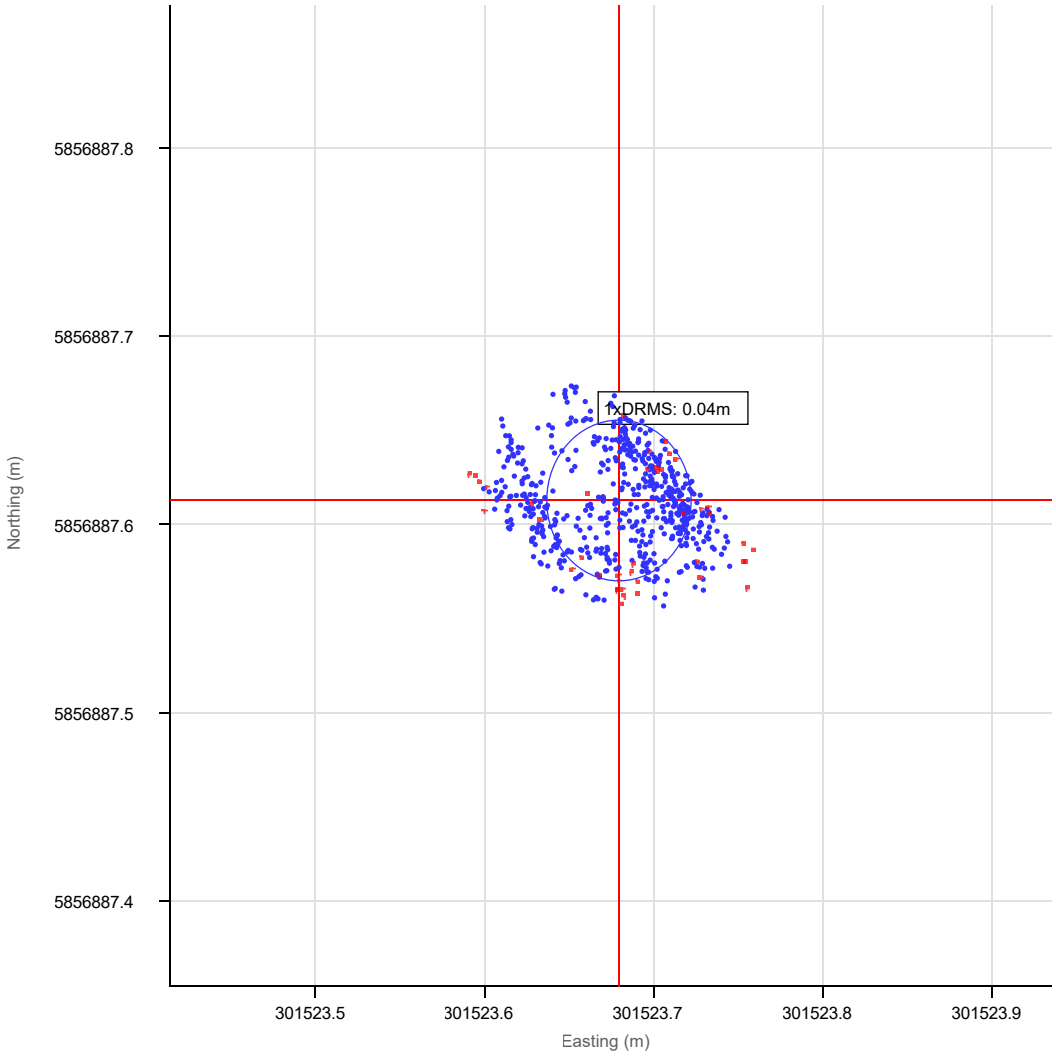
Table 7: Mean Position to Target

Target	BH08		
Position	301 524.000 m E, 5 856 887.000 m N		
Range	0.69 m Grid		
Bearing To	152.4° G	Bearing From	332.4° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

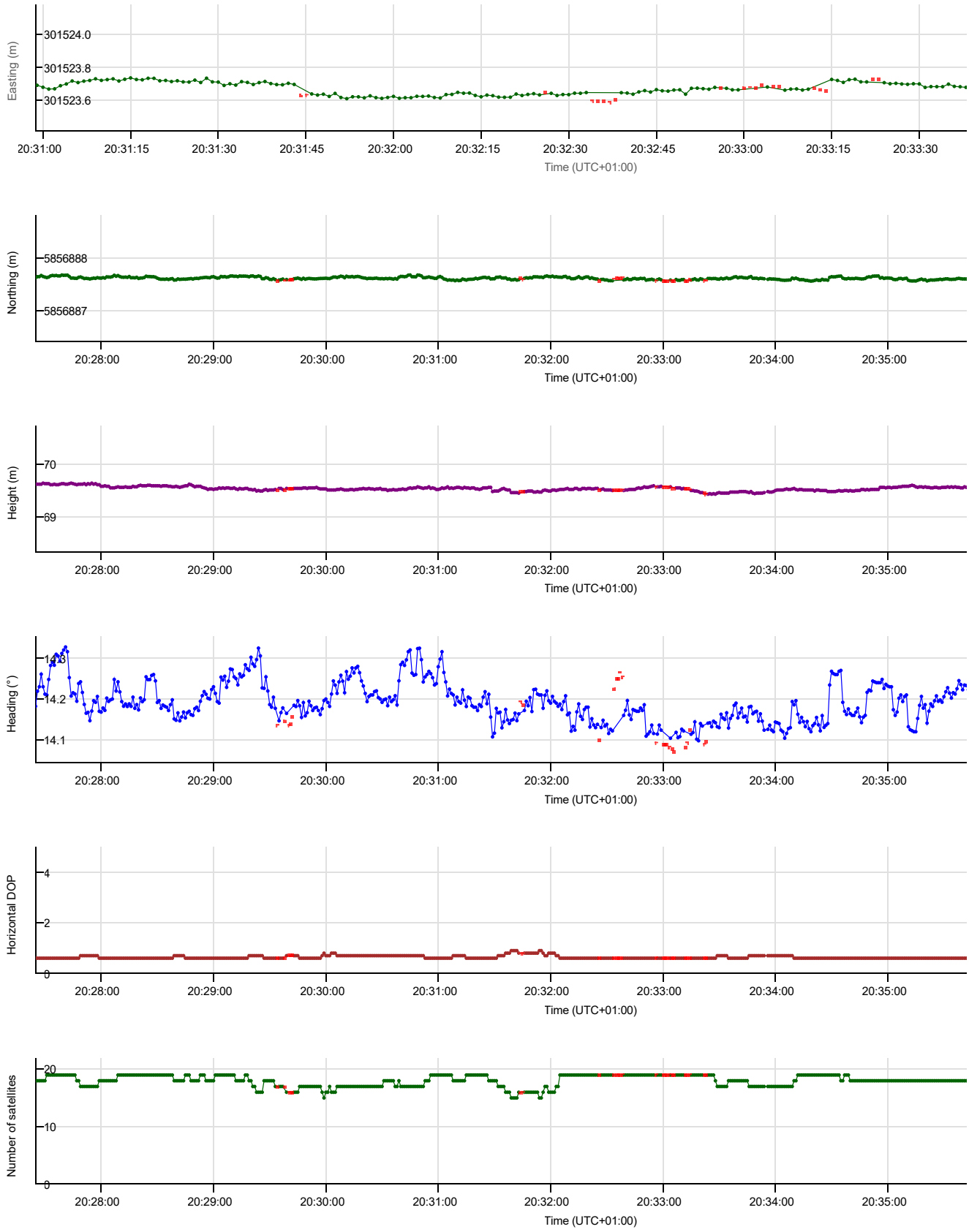
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	558 of 600
Position	301 523.679 m E, 5 856 887.613 m N ,14.941 m CD
Heading	14.2° T, 16.5° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	301 523.679 m E	5 856 887.613 m N

Figure 2: Time series plots for Deme Neptune



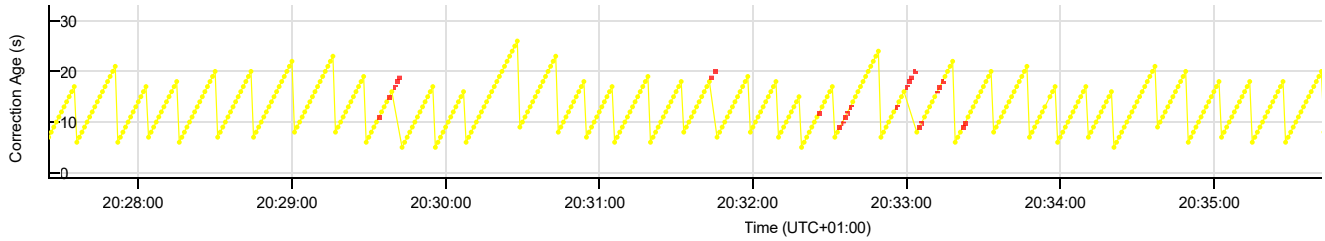


Table 9: Remarks

```
Cantilever to Mud = 34.3 m;
Cantilever to LAT = 14.9 m;
LAT to Mud = 19.4 m;

Leg positions:
Fwd Port:   301,535.707m E 5,856,912.190m N
Fwd Stbd:   301,565.438m E 5,856,903.401m N
Aft Port:   301,522.325m E 5,856,866.925m N
Aft Stbd:   301,552.103m E 5,856,858.120m N
```

M Khairulannuar
Party Chief
FGBNM (Fugro Great Britain North Marine)

James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH09 MPR Final Fix-v5
Start Time	16 Jun 2022, 14:47:47+01:00
End Time	16 Jun 2022, 14:57:48+01:00
Session Length	10m 1s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 47′ 54.20334″ N	52° 47′ 54.20334″ N
Longitude	005° 57′ 46.23061″ W	005° 57′ 46.23061″ W
Height	69.893 m Ell., 0.002 m ISS	69.893 m Ell., 13.723 m Ort.
Easting	300 261.502 m E (± 0.02 m)	
Northing	5 853 958.523 m N (± 0.04 m)	
Height	15.233 m CD (± 0.13 m) , 0.002 m ISS (± 0.03 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	201.7° T, 204.1° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	30.5 m	Supplied by Client

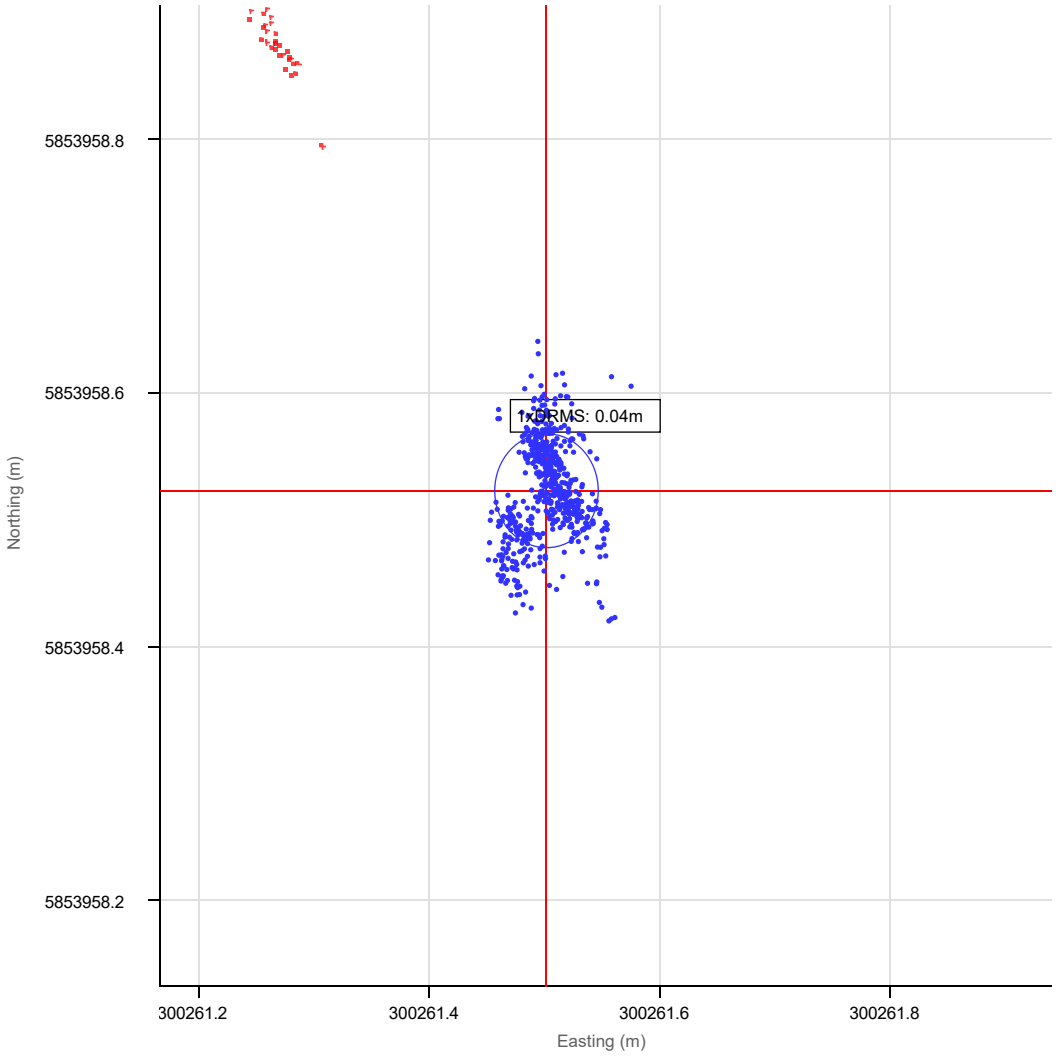
Table 7: Mean Position to Target

Target	BH09		
Position	300 262.000 m E, 5 853 958.000 m N		
Range	0.72 m Grid		
Bearing To	136.4° G	Bearing From	316.4° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

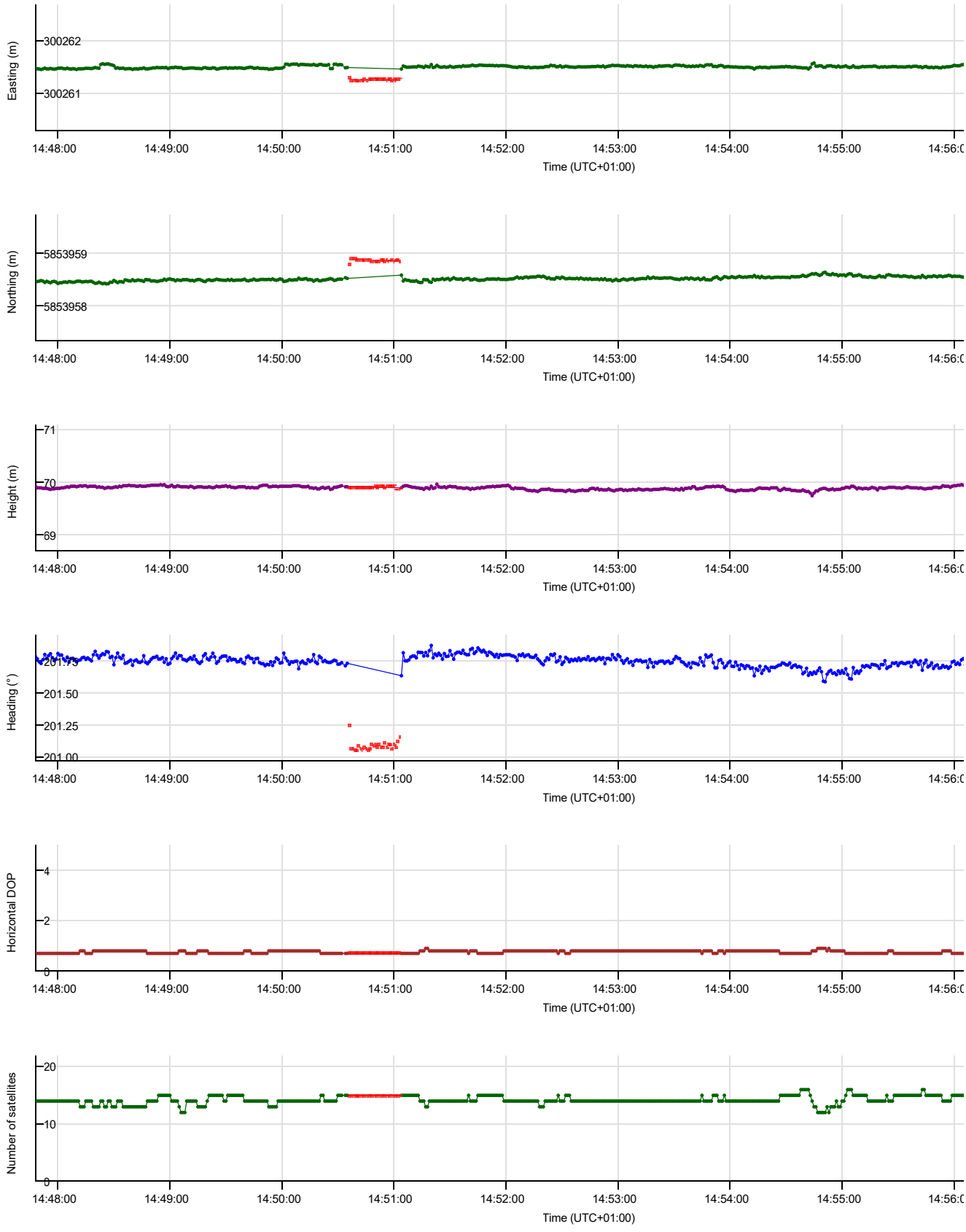
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	572 of 600
Position	300 261.502 m E, 5 853 958.523 m N ,15.233 m CD
Heading	201.7° T, 204.1° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	300 261.502 m E	5 853 958.523 m N

Figure 2: Time series plots for Deme Neptune



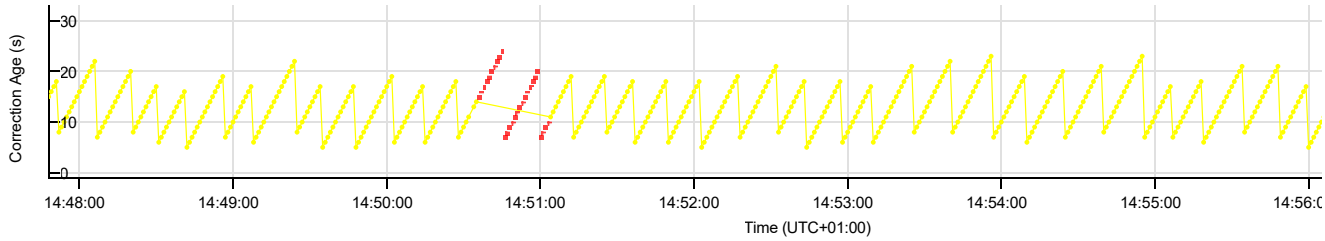


Table 9: Remarks

```
Cantilever to Mud = 45.70m;
Cantilever to LAT = 15.2m;
LAT to Mud = 30.5m;

Leg positions:
Fwd Port:   300,246.337m E 5,853,935.741m N
Fwd Stbd:   300,218.035m E 5,853,948.397m N
Aft Port:   300,265.606m E 5,853,978.832m N
Aft Stbd:   300,237.259m E 5,853,991.509m N
```

M Khairulannuar
Party Chief
FGBNM (Fugro Great Britain North Marine)

James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH10 MPR Final Fix-v2
Start Time	29 Jun 2022, 19:54:47+01:00
End Time	29 Jun 2022, 20:04:46+01:00
Session Length	9m 59s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 47′ 00.53403″ N	52° 47′ 00.53403″ N
Longitude	005° 56′ 12.64956″ W	005° 56′ 12.64956″ W
Height	70.741 m Ell., -0.012 m ISS	70.741 m Ell., 14.611 m Ort.
Easting	301 945.774 m E (± 0.03 m)	
Northing	5 852 228.848 m N (± 0.04 m)	
Height	16.085 m CD (± 0.14 m) , -0.012 m ISS (± 0.06 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	202.1° T, 204.4° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	35.0 m	Supplied by Client

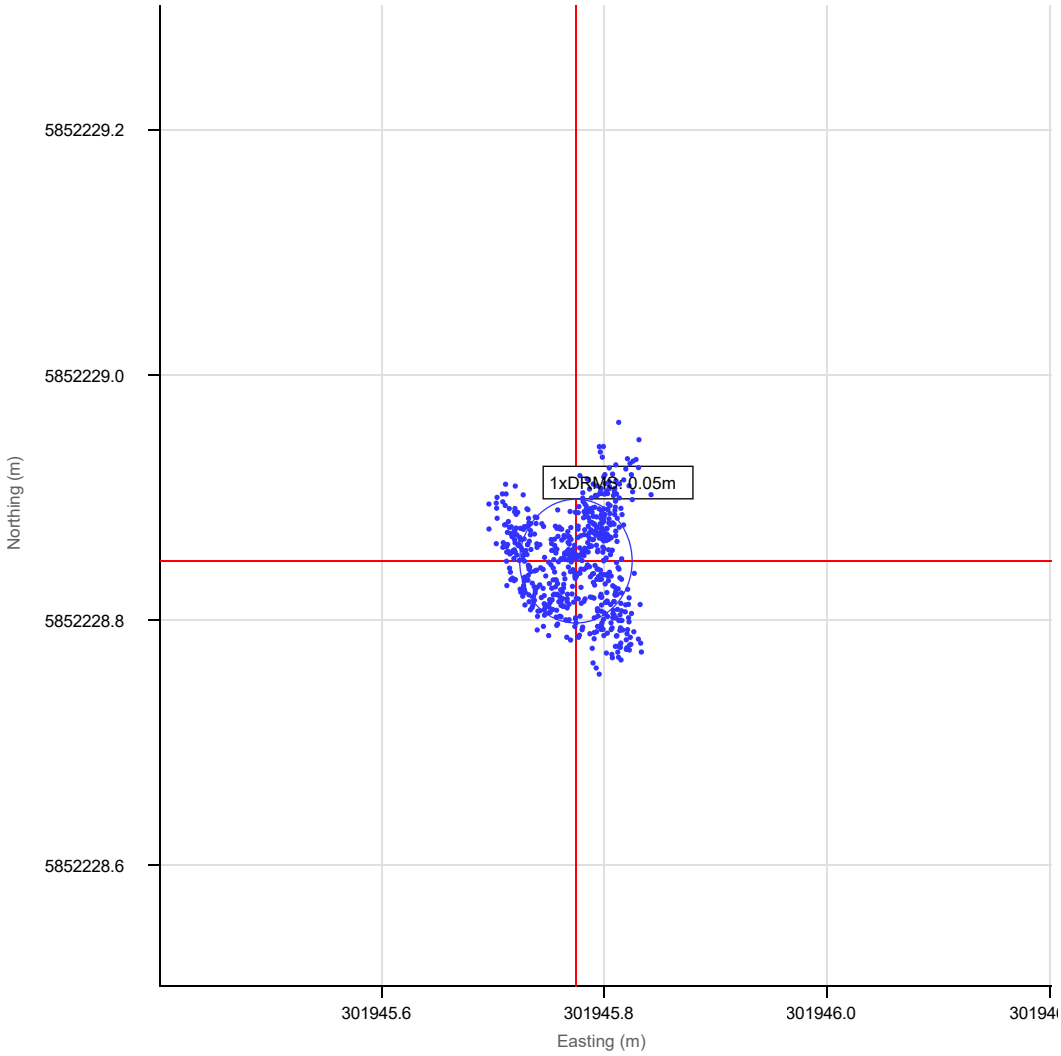
Table 7: Mean Position to Target

Target	BH10		
Position	301 945.000 m E, 5 852 227.000 m N		
Range	2.00 m Grid		
Bearing To	202.7° G	Bearing From	22.7° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

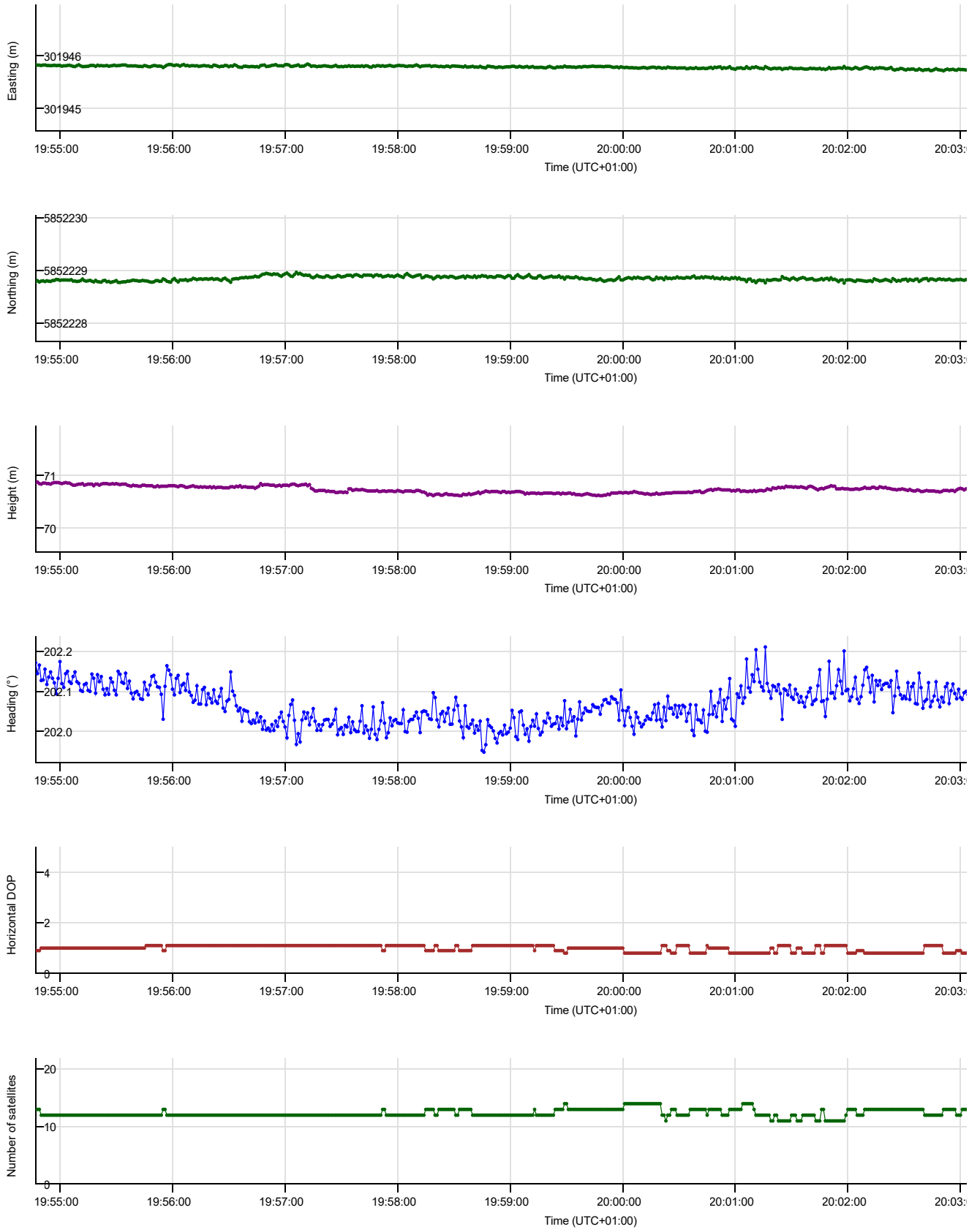
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	600 of 600
Position	301 945.774 m E, 5 852 228.848 m N ,16.085 m CD
Heading	202.1° T, 204.4° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	301 945.774 m E	5 852 228.848 m N

Figure 2: Time series plots for Deme Neptune



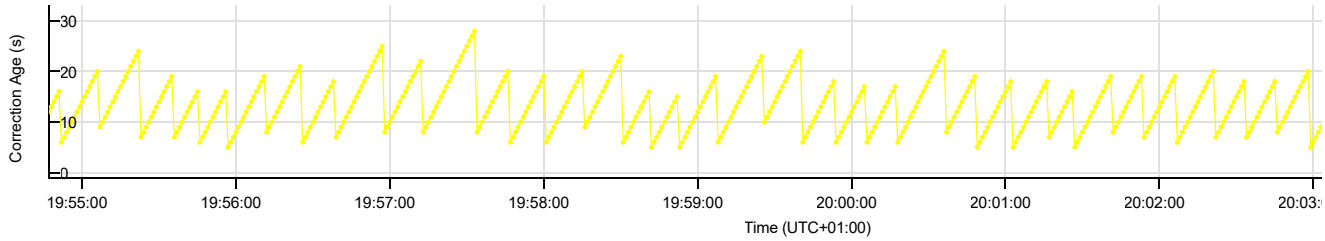


Table 9: Remarks

```
Cantilever to Mud = 48.6 m;
Cantilever to LAT = 16.1 m;
LAT to Mud = 32.5 m;

Leg positions:
Fwd Port:   301,930.463m E 5,852,206.145m N
Fwd Stbd:   301,902.224m E 5,852,218.939m N
Aft Port:   301,949.942m E 5,852,249.141m N
Aft Stbd:   301,921.658m E 5,852,261.956m N
```

M Khairulannuar
Party Chief
FGBNM (Fugro Great Britain North Marine)

James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH12 MPR Final Fix-v2
Start Time	20 Jun 2022, 20:47:58+01:00
End Time	20 Jun 2022, 20:57:57+01:00
Session Length	9m 59s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 44′ 38.19838″ N	52° 44′ 38.19838″ N
Longitude	005° 58′ 21.39081″ W	005° 58′ 21.39081″ W
Height	70.066 m Ell., -0.016 m ISS	70.066 m Ell., 13.910 m Ort.
Easting	299 352.918 m E (± 0.04 m)	
Northing	5 847 931.473 m N (± 0.03 m)	
Height	15.314 m CD (± 0.13 m) , -0.016 m ISS (± 0.03 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	202.3° T, 204.7° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	19.4 m	Supplied by Client

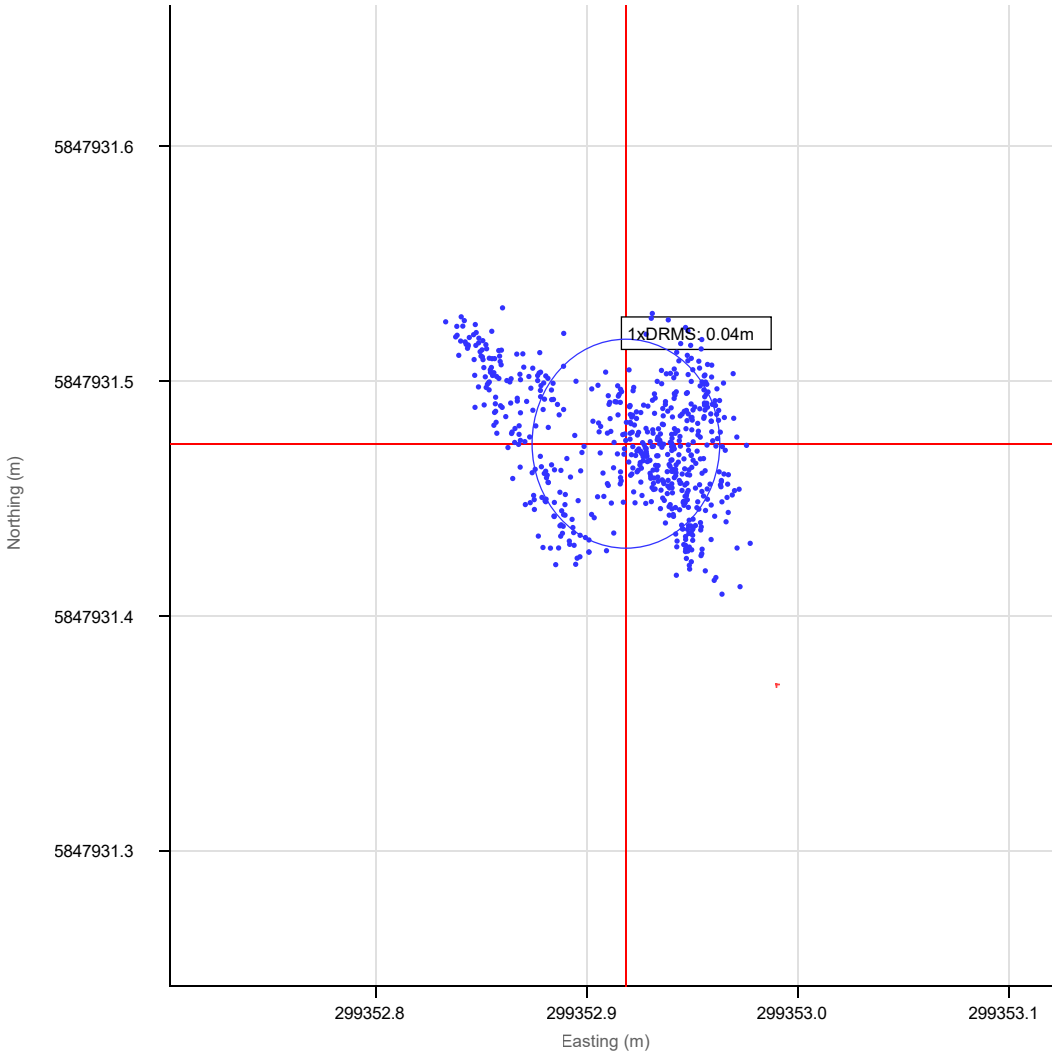
Table 7: Mean Position to Target

Target	BH12		
Position	299 353.000 m E, 5 847 931.000 m N		
Range	0.48 m Grid		
Bearing To	170.2° G	Bearing From	350.2° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

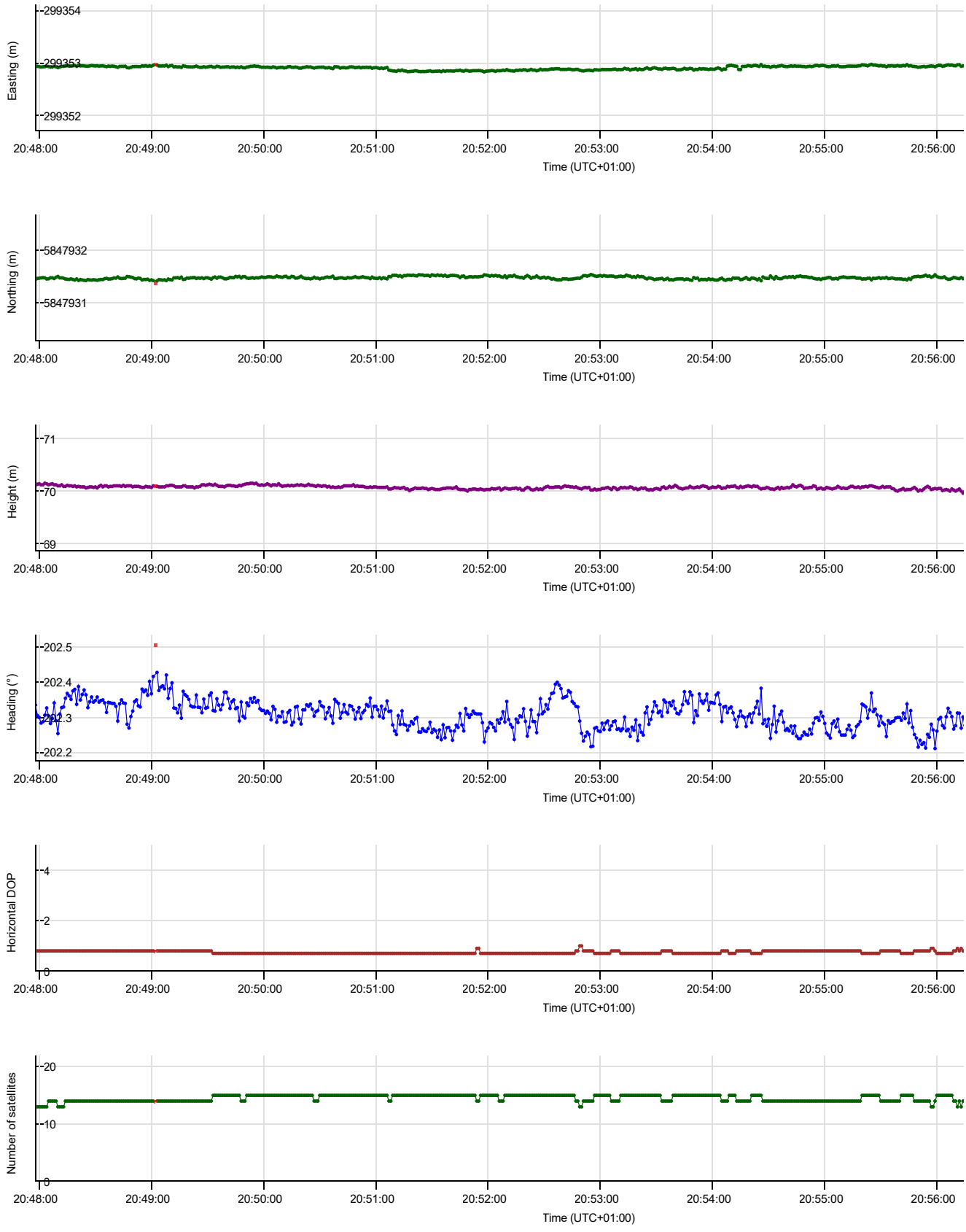
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	599 of 600
Position	299 352.918 m E, 5 847 931.473 m N ,15.314 m CD
Heading	202.3° T, 204.7° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	299 352.918 m E	5 847 931.473 m N

Figure 2: Time series plots for Deme Neptune



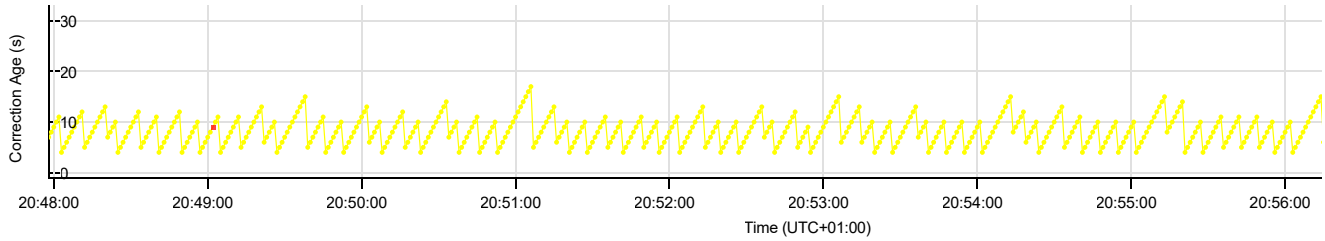


Table 9: Remarks

```
Cantilever to Mud = 35.70m;
Cantilever to LAT = 15.3m;
LAT to Mud = 20.4m;

Leg positions:
Fwd Port:   299,337.461m E 5,847,908.822m N
Fwd Stbd:   299,309.287m E 5,847,921.759m N
Aft Port:   299,357.158m E 5,847,951.719m N
Aft Stbd:   299,328.939m E 5,847,964.678m N
```

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James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH13 MPR Final Fix-v2
Start Time	03 Jul 2022, 09:19:16+01:00
End Time	03 Jul 2022, 09:29:15+01:00
Session Length	9m 59s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 44′ 14.26679″ N	52° 44′ 14.26679″ N
Longitude	005° 57′ 01.47709″ W	005° 57′ 01.47709″ W
Height	71.084 m Ell., 0.012 m ISS	71.084 m Ell., 14.967 m Ort.
Easting	300 820.593 m E (± 0.02 m)	
Northing	5 847 130.586 m N (± 0.03 m)	
Height	16.366 m CD (± 0.13 m) , 0.012 m ISS (± 0.04 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	22.4° T, 24.7° G	± 0.1°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	38.8 m	Supplied by Client

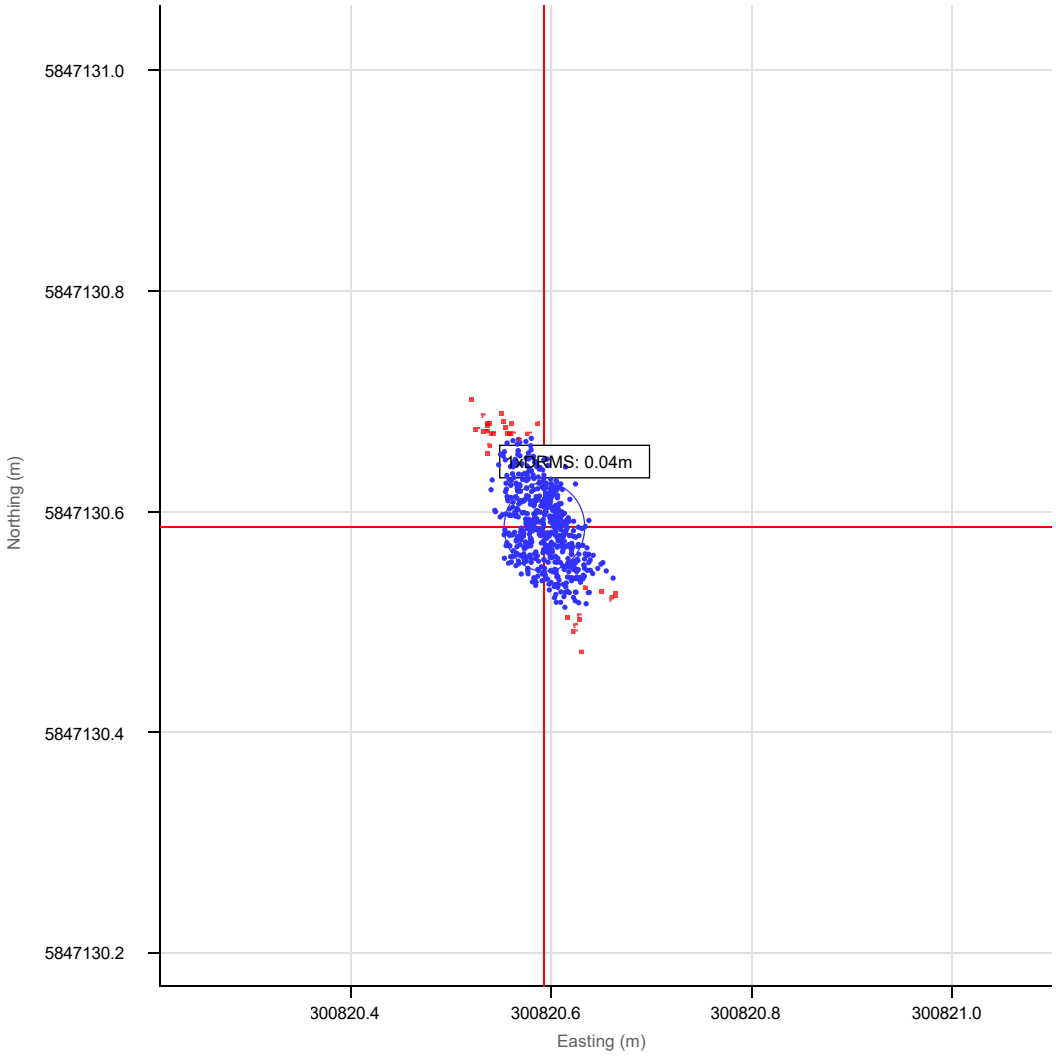
Table 7: Mean Position to Target

Target	BH13		
Position	300 820.000 m E, 5 847 130.000 m N		
Range	0.83 m Grid		
Bearing To	225.3° G	Bearing From	45.3° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

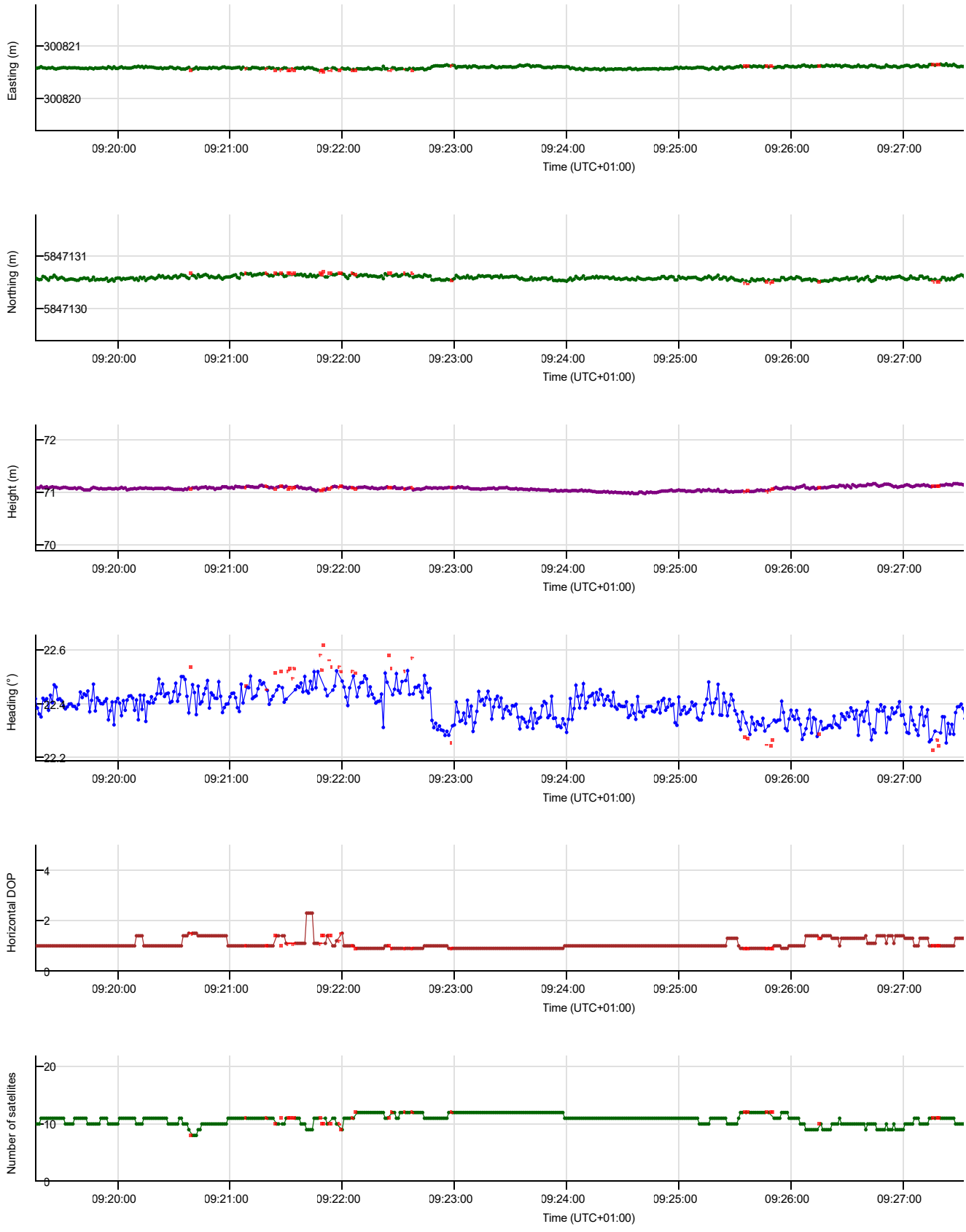
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	568 of 600
Position	300 820.593 m E, 5 847 130.586 m N ,16.366 m CD
Heading	22.4° T, 24.7° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	300 820.593 m E	5 847 130.586 m N

Figure 2: Time series plots for Deme Neptune



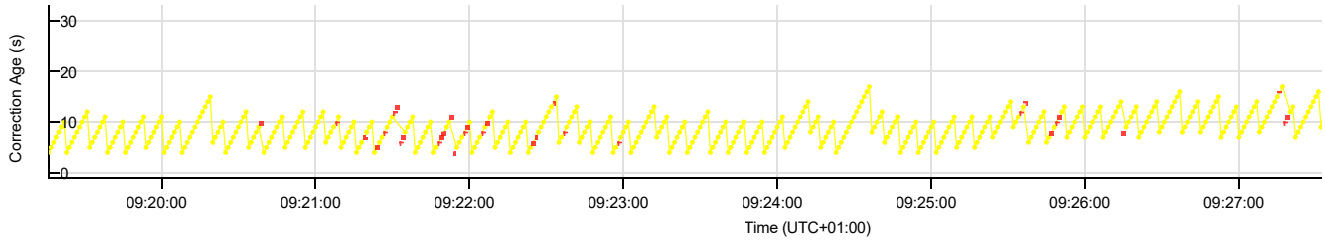


Table 9: Remarks

```
Cantilever to Mud =  54.5 m;
Cantilever to LAT = 16.4 m;
LAT to Mud =  38.1 m;

Leg positions:
Fwd Port:   300,836.031m E 5,847,153.193m N
Fwd Stbd:   300,864.188m E 5,847,140.219m N
Aft Port:   300,816.278m E 5,847,110.322m N
Aft Stbd:   300,844.480m E 5,847,097.326m N
```

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James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH20 MPR Final Fix-v2
Start Time	06 Jul 2022, 14:43:36+01:00
End Time	06 Jul 2022, 14:53:36+01:00
Session Length	10m 0s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 50' 04.00216" N	52° 50' 04.00216" N
Longitude	005° 55' 21.39657" W	005° 55' 21.39657" W
Height	70.678 m Ell., -0.008 m ISS	70.678 m Ell., 14.558 m Ort.
Easting	303 136.141 m E (± 0.03 m)	
Northing	5 857 856.815 m N (± 0.03 m)	
Height	16.136 m CD (± 0.13 m) , -0.008 m ISS (± 0.04 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	12.9° T, 15.2° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	28.6 m	Supplied by Client

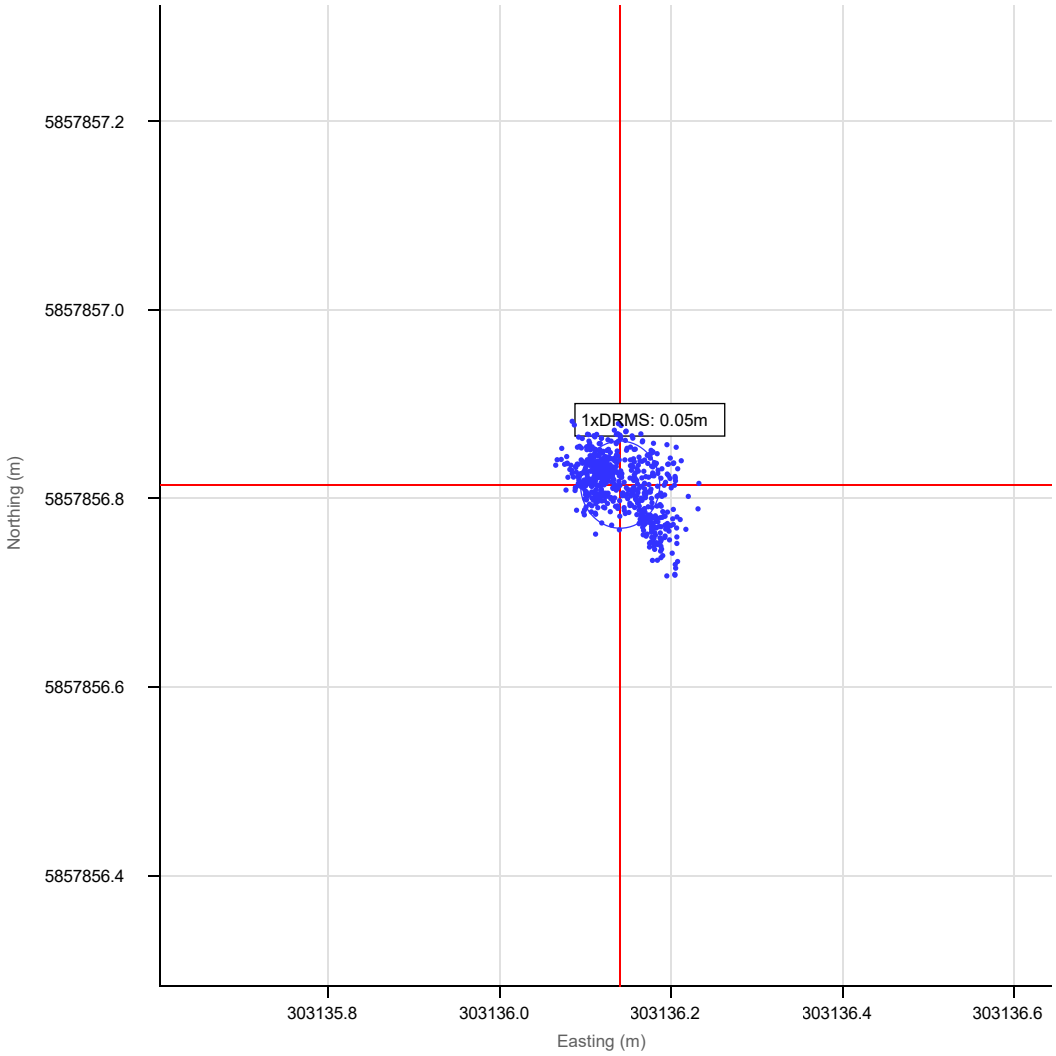
Table 7: Mean Position to Target

Target	BH20		
Position	303 136.000 m E, 5 857 856.000 m N		
Range	0.83 m Grid		
Bearing To	189.8° G	Bearing From	9.8° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

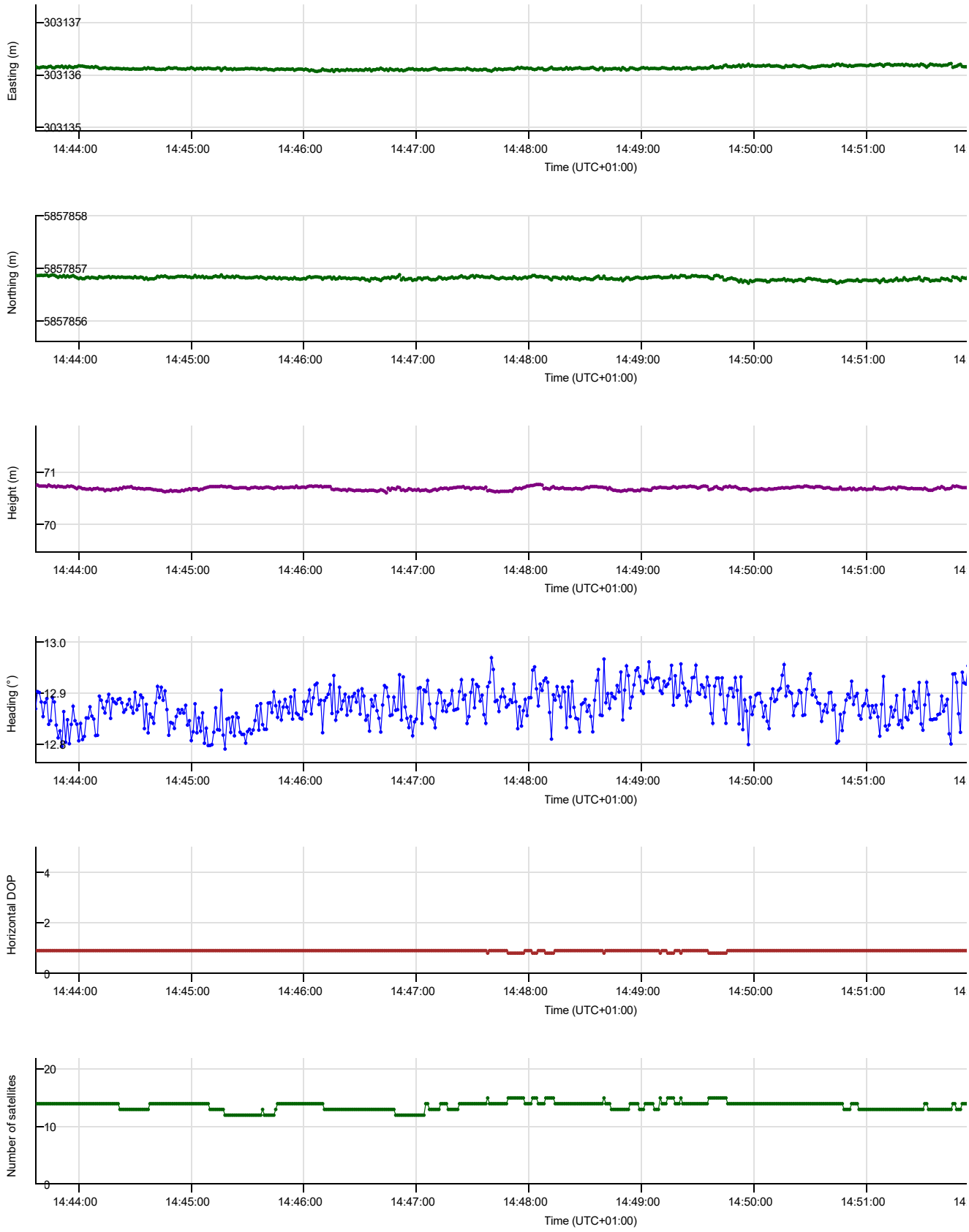
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	600 of 600
Position	303 136.141 m E, 5 857 856.815 m N ,16.136 m CD
Heading	12.9° T, 15.2° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	303 136.141 m E	5 857 856.815 m N

Figure 2: Time series plots for Deme Neptune



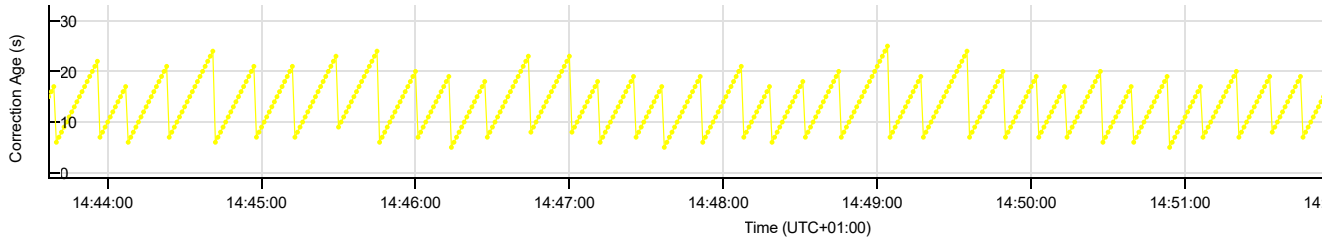


Table 9: Remarks

```
Cantilever to Mud =  44.5 m;
Cantilever to LAT = 16.1 m;
LAT to Mud = 28.4  m;

Leg positions:
Fwd Port:   303,147.647m E 5,857,881.677m N
Fwd Stbd:   303,177.562m E 5,857,873.539m N
Aft Port:   303,135.256m E 5,857,836.131m N
Aft Stbd:   303,165.219m E 5,857,827.978m N
```

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FGBNM (Fugro Great Britain North Marine)

James Hills
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	210537_Arklow Bank NAV2
Project Number	210537_Arklow Bank NAV2
Client	Fugro
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [Position]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH26 MPR 20220601-v6
Start Time	01 Jun 2022, 10:52:18+01:00
End Time	01 Jun 2022, 11:02:18+01:00
Session Length	10m 0s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 41′ 26.56406″ N	52° 41′ 26.56406″ N
Longitude	005° 59′ 31.01004″ W	005° 59′ 31.01004″ W
Height	73.618 m Ell., 0.002 m ISS	73.618 m Ell., 17.497 m Ort.
Easting	297 801.742 m E (± 0.03 m)	
Northing	5 842 066.425 m N (± 0.06 m)	
Height	18.825 m CD (± 0.15 m) , 0.002 m ISS (± 0.07 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	201.9° T, 204.2° G	± 0.1°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	28.9 m	Supplied by Client

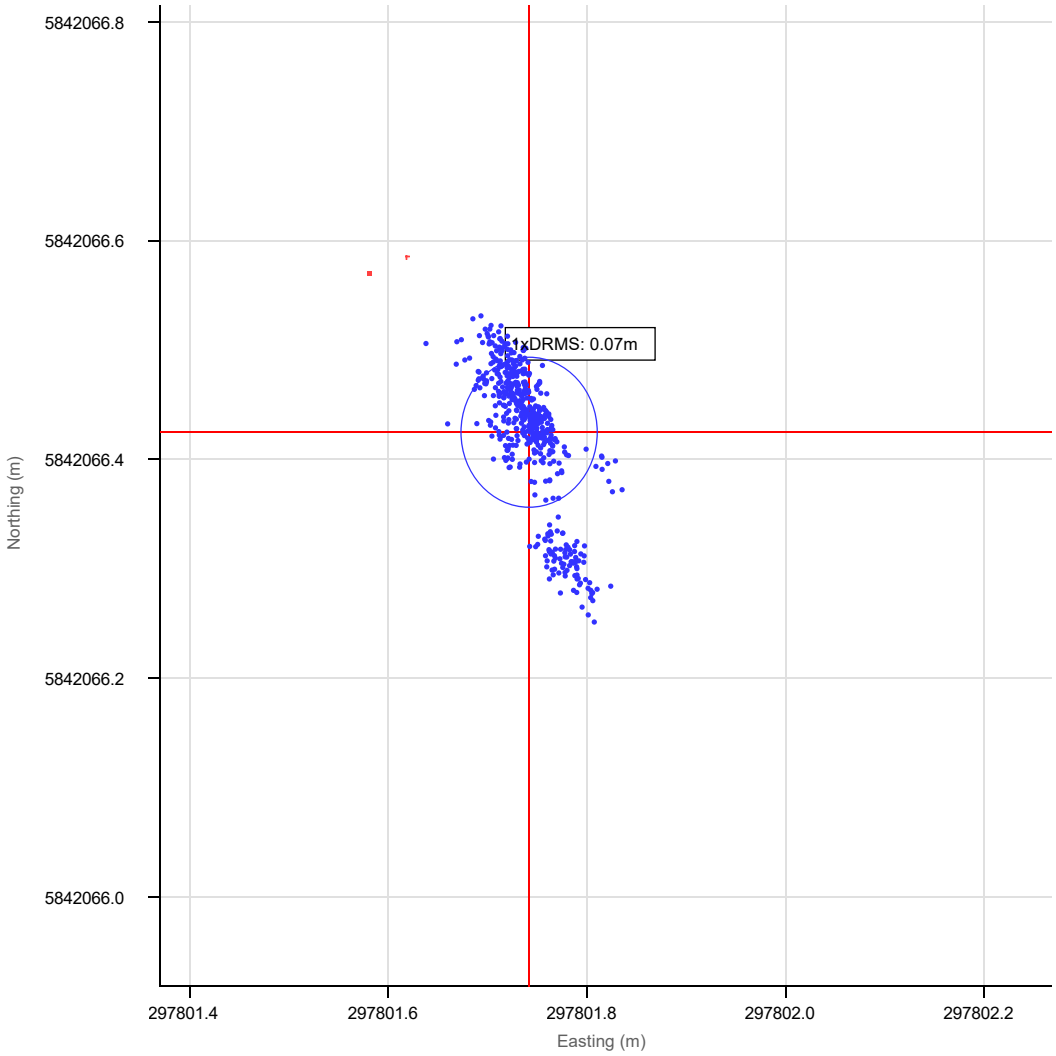
Table 7: Mean Position to Target

Target	BH26		
Position	297 802.000 m E, 5 842 067.000 m N		
Range	0.63 m Grid		
Bearing To	24.2° G	Bearing From	204.2° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

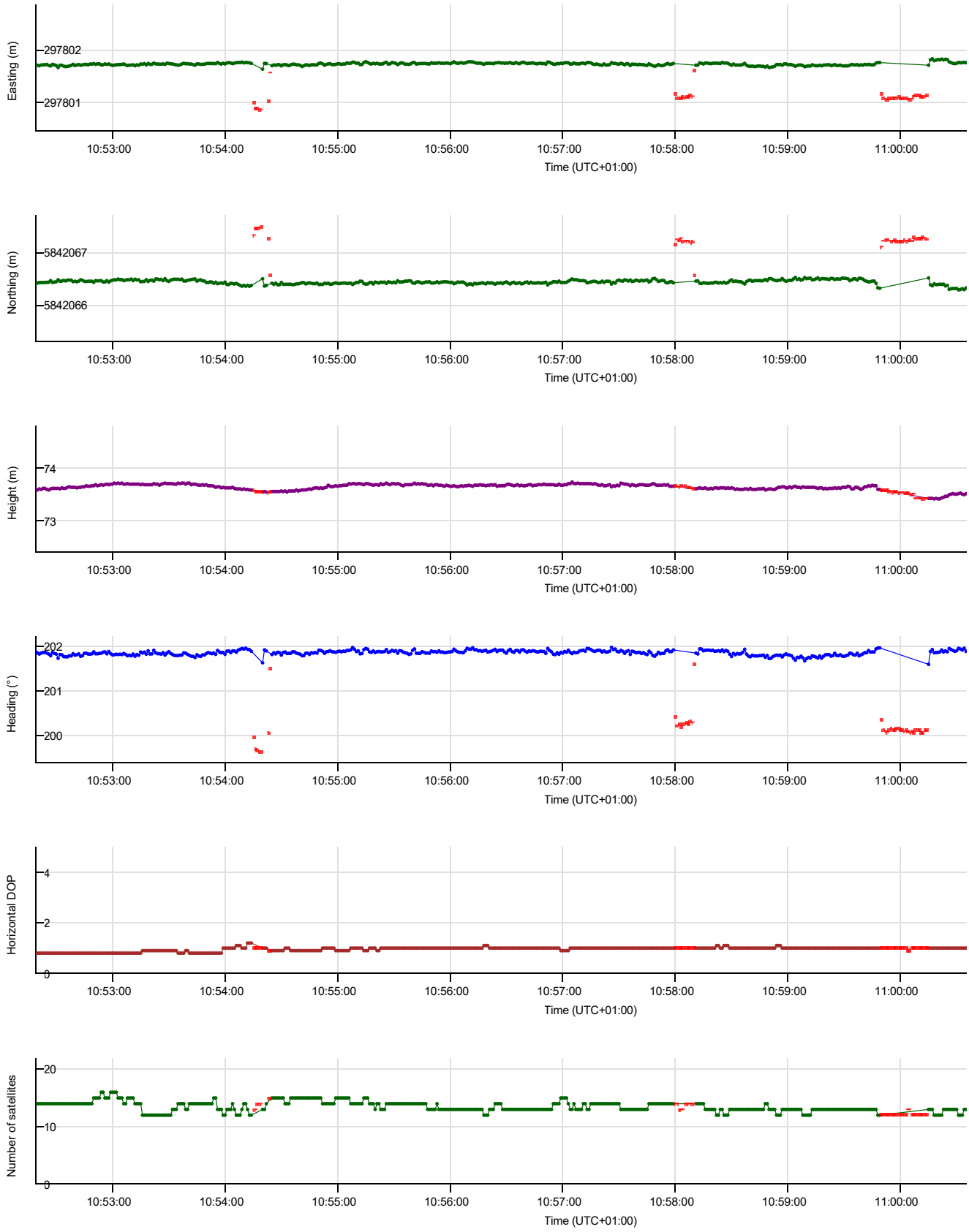
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	531 of 600
Position	297 801.742 m E, 5 842 066.425 m N ,18.825 m CD
Heading	201.9° T, 204.2° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	297 801.742 m E	5 842 066.425 m N

Figure 2: Time series plots for Deme Neptune



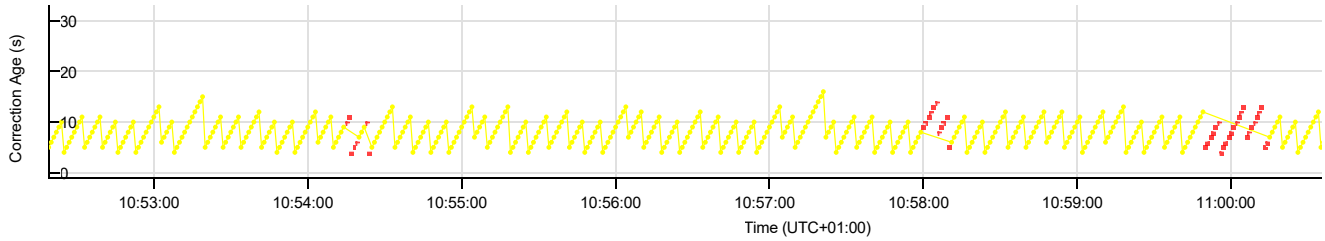


Table 9: Remarks

```
Cantilever to Mud = 46.60m;
Cantilever to LAT = 18.80m;
LAT to Mud = 27.80m

Leg positions:
Fwd Port: 297786.46m, 5842043.66m;
Fwd Stbd: 297758.19m, 5842056.38m;
Aft Port: 297805.84m, 5842086.70m;
Aft Stbd: 297777.53m, 5842099.45m
```

Tomasz Michalowski
Party Chief
FGBNM (Fugro Great Britain North Marine)

Rob Fraser
Client Representative
Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 3: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54′ 57.56760″ N	52° 54′ 57.56760″ N
Longitude	005° 55′ 19.16040″ W	005° 55′ 19.16040″ W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

Table 4: Session Details

Session	BH28 MPR Final Fix-v3
Start Time	12 Jun 2022, 06:09:09+01:00
End Time	12 Jun 2022, 06:19:08+01:00
Session Length	9m 59s

Table 5: Mean Position for Deme Neptune at Drill

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	52° 52′ 54.50600″ N	52° 52′ 54.50600″ N
Longitude	005° 56′ 07.98567″ W	005° 56′ 07.98567″ W
Height	70.268 m Ell., -0.001 m ISS	70.268 m Ell., 14.121 m Ort.
Easting	302 479.914 m E (± 0.04 m)	
Northing	5 863 159.004 m N (± 0.03 m)	
Height	15.834 m CD (± 0.13 m) , -0.001 m ISS (± 0.04 m)	

Table 6: Sensor Averages

Sensor	Sensor Average	SD
Heading	201.1° T, 203.5° G	± 0.0°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	28.1 m	Supplied by Client

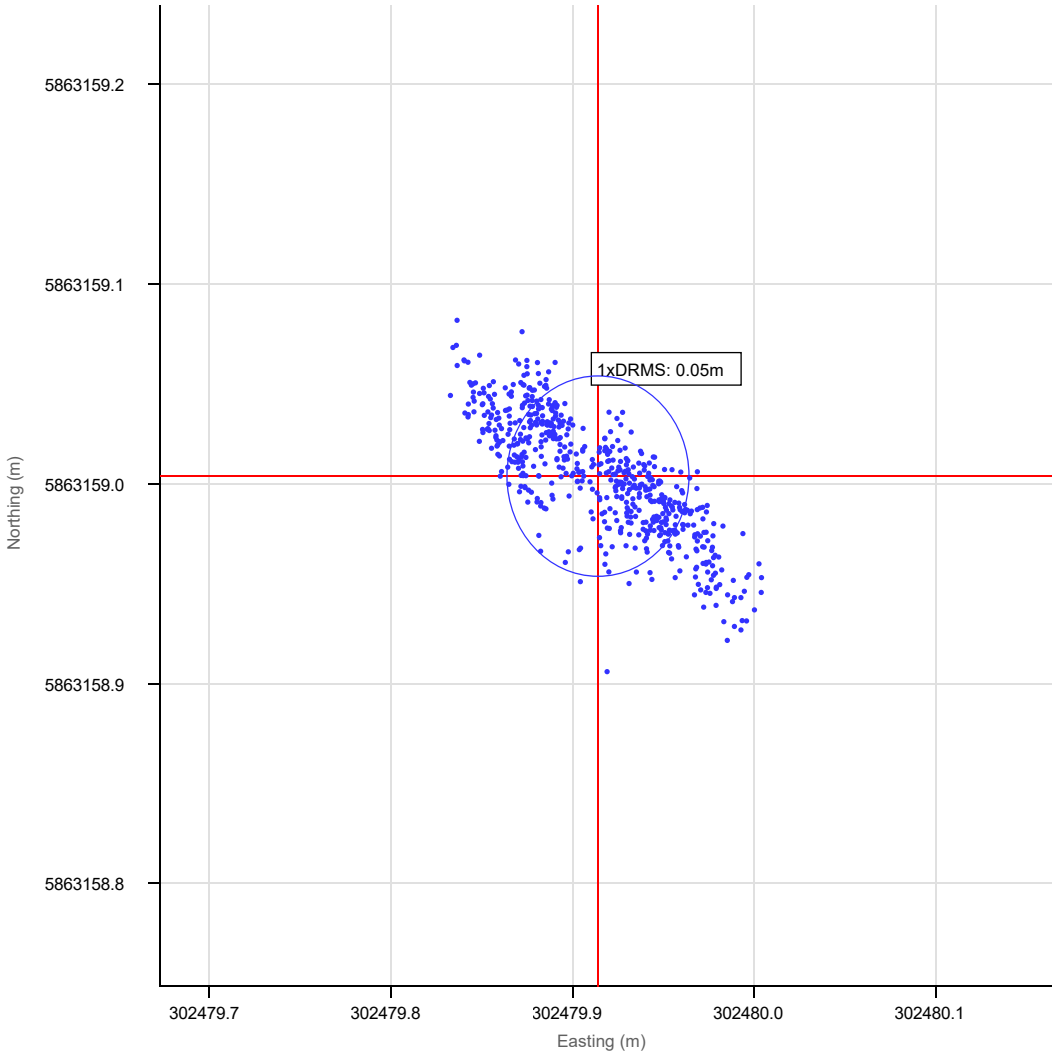
Table 7: Mean Position to Target

Target	BH28		
Position	302 480.000 m E, 5 863 159.000 m N		
Range	0.09 m Grid		
Bearing To	92.6° G	Bearing From	272.6° G

Table 8: Deme Neptune - WGS 84 / UTM zone 30N,VORF LAT height [UK]

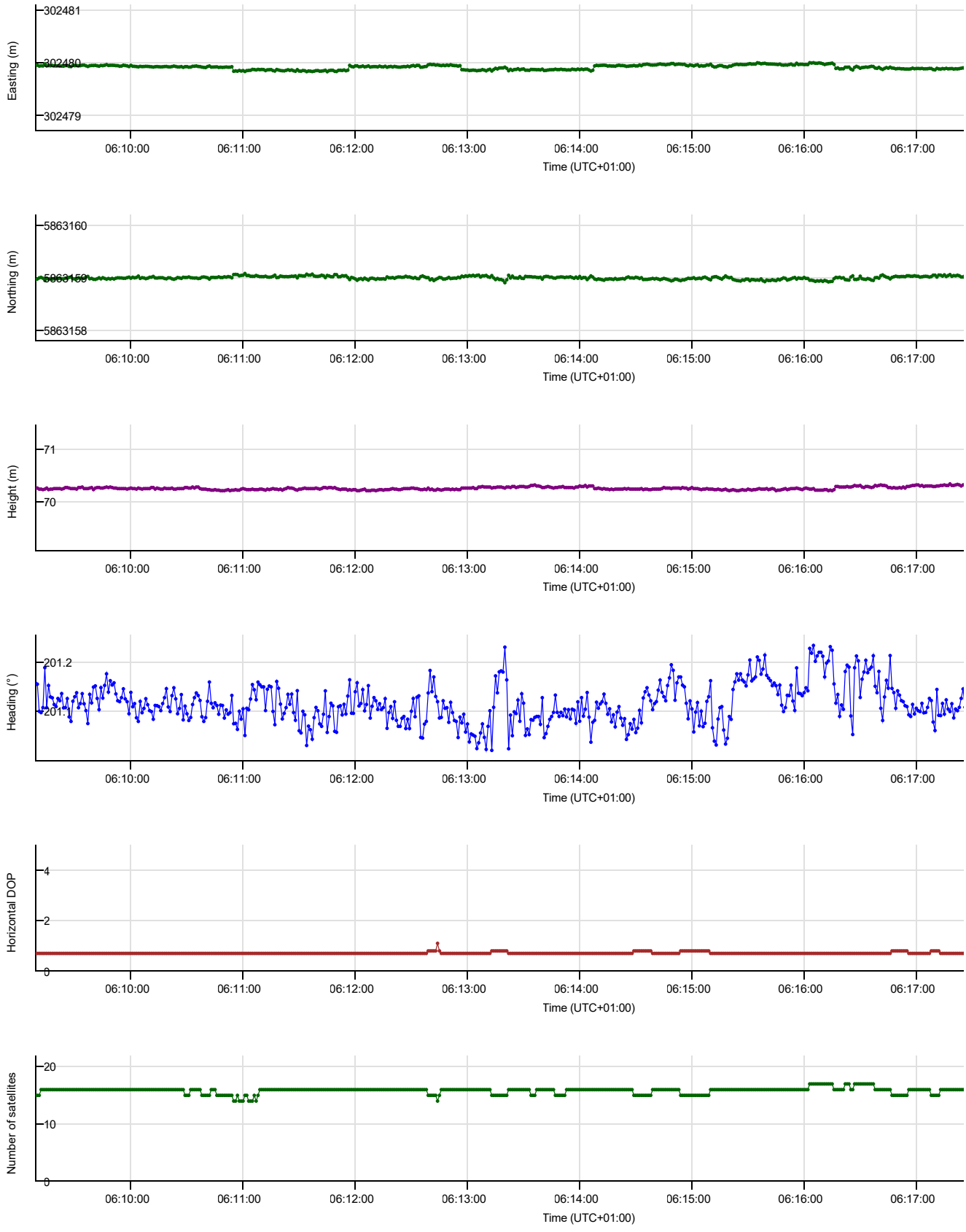
Position Source	Deme Neptune/Selector/InUse/Navigation Result
Records	600 of 600
Position	302 479.914 m E, 5 863 159.004 m N ,15.834 m CD
Heading	201.1° T, 203.5° G
Pitch	0.00 °
Roll	0.00 °

Figure 1: Scatter Plot - WGS 84 / UTM zone 30N,VORF LAT height [UK]



Sensor Group	Easting	Northing
Deme Neptune	302 479.914 m E	5 863 159.004 m N

Figure 2: Time series plots for Deme Neptune



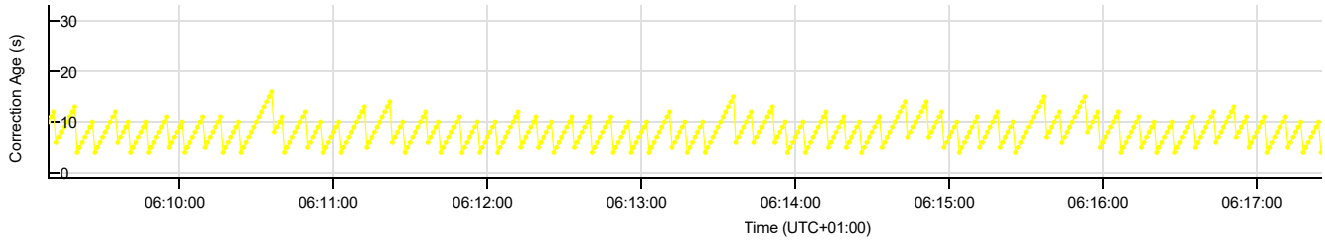


Table 9: Remarks

```
Cantilever to Mud = 43.60m;
Cantilever to LAT = 15.8m;
LAT to Mud = 27.8m;

Leg positions:
Fwd Port:   302,464.955m E 5,863,136.068m N
Fwd Stbd:   302,436.504m E 5,863,148.384m N
Aft Port:   302,483.706m E 5,863,179.386m N
Aft Stbd:   302,455.209m E 5,863,191.723m N
```

M Khairulannuar
Party Chief
FGBNM (Fugro Great Britain North Marine)

Robert Fraser
Client Representative
Fugro Geoservices Inc

Mobilisation and Calibration Report

Deme Neptune at Arklow Bank

FGBNM-210537-R01 00 | 26 May 2022

Issued for Review

Fugro GeoServices Limited

Document Control

Document Information

Project Title	Deme Neptune at Arklow Bank
Document Title	Mobilisation and Calibration Report
Fugro Project No.	210537
Fugro Document No.	FGBNM-210537-R01
Issue No.	00
Issue Status	Issued for Review
Fugro Legal Entity	Fugro GB (North) Marine Limited
Issuing Office Address	Survey House, Denmore Road, Bridge of Don, Aberdeen, AB23 8JW, United Kingdom

Client Information

Client	Fugro GeoServices Limited
Client Address	Bickland Industrial Park, Falmouth, Cornwall, TR11 4TA, UK

Document History

Issue	Date	Status	Comments on Content	Prepared By	Checked By	Approved By
00	26 May 2022	Issued for Review		TM	MT	MM

Project Team

Initials	Name	Role
MM	Mhairi Munro	Project Manager
MT	Marketa Thornhill	Project Surveyor
TM	Tomasz Michalowski	Surveyor

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Appendices

Appendix A Sequence of Events

A.1 Sequence of Events

Appendix B Offset Diagrams

B.1 Deme Neptune Jack-Up Barge Offsets

Appendix C Position and heading check

C.1 Position and heading check MPR

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D.1 Position Verification of Port StarPack G4+ solution against RTK Reference Point

D.2 Position Verification of Stbd StarPack G4+ solution against RTK Reference Point

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Abbreviations

AORET	Inmarsat Satellite for differential corrections
CAD	Computer Aided Design
C-O	Computed minus Observed
CRP	Common Reference Point
CRS	Coordinate Reference System
DGNSS	Differential Global Navigation Satellite System
DPR	Daily Progress Report
EMSAT	Inmarsat Satellite for differential corrections
ETRS89	European Terrestrial Reference System 1989
FGBNM	Fugro GB North Marine
FGSL	Fugro GeoServices Limited
GNSS	Global Navigation Satellite System
HDOP	Horizontal Dilution of Precision
IMS	Integrated Management System
ITRF2014	International Terrestrial Reference System 2014
JUB	Jack-Up Barge
MPR	Mean Positioning Report
PDOP	Positional Dilution of Precision
PM	Project Manager
TBT	Toolbox Talk
QHSSE	Quality Health Safety Security Environment
ROC	Remote Operations Centre
RTK	Real Time Kinematic
SD	Standard Deviation
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
VRS	Vertical Reference System
WGS84	World Geodetic System 1984

1. Introduction and Scope of Work

1.1 Project Description

Fugro GeoServices Limited (FGSL) have been contracted to conduct a geotechnical investigations across the Arklow Bank Wind Park site area.

Fugro GB (North) Marine Limited (FGBNM) has been subcontracted by Fugro GeoServices Limited to provide the JUB with surface positioning and survey services during operations.

DGNSS positioning will use the Fugro Starfix G2+solution which meets the horizontal and vertical accuracy specification. Heading control shall be provided by two ProTrack GNSS heading solutions providing redundancy.

Antenna position data will be combined with the rig heading in Starfix navigation software to compute the rig CRP position. DGNSS derived rig position, JUB outline, and nearby structures will be displayed by the online colour graphics system, together with their relative position.

All borehole drilling operations shall be carried out within a 3m radius from the proposed target location at seabed level.

The accuracy of the positioning equipment itself shall be demonstrated to be of less than 1m.

1.2 Scope of Work

The plan involving Fugro to assist during the operations is as follows:

- Mobilise personnel and positioning equipment to JUB;
- Risk assessment, toolbox talk, installation and system checks;
- Four antennas are to be installed with the two dual card StarPack solution;
- Position all antennas such that they will perform to an optimum;
- Confirm with FGSL their preferred vertical reference point (usually the deck level);
- Antennas to deck level CRP (three dimensions), clearly marking the CRP;
- CRP to the JUB leg centres and confirm the leg diameter;
- CRP deck to waterline (tide correction required) to obtain height above seabed.
- Heading alignment checks using a DGNSS validated baseline and produce a time series plot;
- Provide navigational displays to both wheel house and deck displays (if required);
- Configure the MPR to include (obtain client approval);
- Provide equipment training to relevant FGSL personnel;
- Test 4G modem and have system configuration checked by survey software support;
- Configure logging and monitoring of position quality data (HDOP, PDOP, SD, number of satellites in view, etc.);
- Ensure FGBNM project manager receives all calibration data before departing site;
- Finalise mobilisation and calibration report, detailing minimum:
- Complete fault logs as necessary;
  Prepare equipment for return and oversee collection;

2. Calibration Results

2.1 Alongside Calibration Results

A series of alongside checks and calibrations were undertaken between 23 and 25 May 2022, while the Deme Neptune – Jack-Up Barge was alongside in Falmouth, UK.

2.2 Vessel Offset Measurement

On 24 May 2022 offsets of installed DGNSS antennas and Cantilever reference point was measured using combine method of total station (Topcon ES-103, s/n: GY0297) measurement and tape measurement.

Table 2.1: Offsets Measurement

Vessel offset	X [m]	Y [m]	Z [m]
Stbd Fwd GNSS Antenna	0.084	26.247	18.078
Stbd Aft GNSS Antenna	1.046	19.102	17.958
Port Fwd GNSS Antenna	-2.749	26.315	17.993
Port Aft GNSS Antenna	-3.470	19.077	17.963
Cantilever Reference Point	-19.995	-5.025	1.330



Figure 2.1: Cantilever Reference Point – Centre of Drilling Hole



Figure 2.2: Cantilever Height Reference Point – Top of Casing next to Drilling Hole

Offset drawing is presented in Appendix B.

2.3 Vessel Heading System Comparison

Comparison between the two Fugro ProTracks was conducted on 25 May 2022 whilst the Neptune Barge was jacked-up alongside in Falmouth. Heading data was logged simultaneously for over an hour. The Fugro ProTrack Stbd was used as a primary system and ProTrack Port was compared to it.

Table 2.2: Vessel Heading Systems Comparison

Description	Mean [°T]	SD [°]	Difference [°]
Protrack Stbd	85.4	0.09	-
Protrack Port	85.3	3.11*	0.07

* Port antenna was affected by crane operations during the vessel mobilisation, the crane will not be used during the operations.

2.4 Vessel DGNSS Comparison

On 25 May 2022 a comparison check was conducted on the Fugro StarPacks GNSS position solutions whilst the Neptune Barge was jacked-up alongside in Falmouth.

Positioning data was logged for one hour at a sample rate of 1 Hz. Table 2.3 shows the delta Easting and Northing value of each position solution compared to the primary solution (G4+ Stbd). The mean deltas are all < 0.3 m which demonstrates a good consistency within project specification for surface positioning systems.

Table 2.3: Vessel DGNSS Comparison Results

Sensor	Mean Offset CRP [m]			Standard Deviation [m]			Delta [m]		
	Easting	Northing	Height	E	N	H	E	N	H
Stbd G4+	353230.764	5558125.487	12.948	±0.05	±0.03	±0.12	-	-	-
Port G4+	353230.660	5558125.559	12.906	±0.03	±0.12	±0.40	-0.11	0.07	-0.04
Stbd G2	353230.783	5558125.474	12.912	±0.04	±0.06	±0.15	0.02	-0.01	-0.04
Port G2	353230.466	5558125.452	13.216	±0.08	±0.09	±0.42	-0.30	-0.04	0.27
Stbd XP	353230.825	5558125.457	12.883	±0.03	±0.04	±0.12	0.06	-0.03	-0.07
Port XP	353230.749	5558125.365	13.210	±0.42	±0.20	±0.30	-0.01	-0.12	0.26
DGNSS positions in WGS84 UTM Zone 30 North									

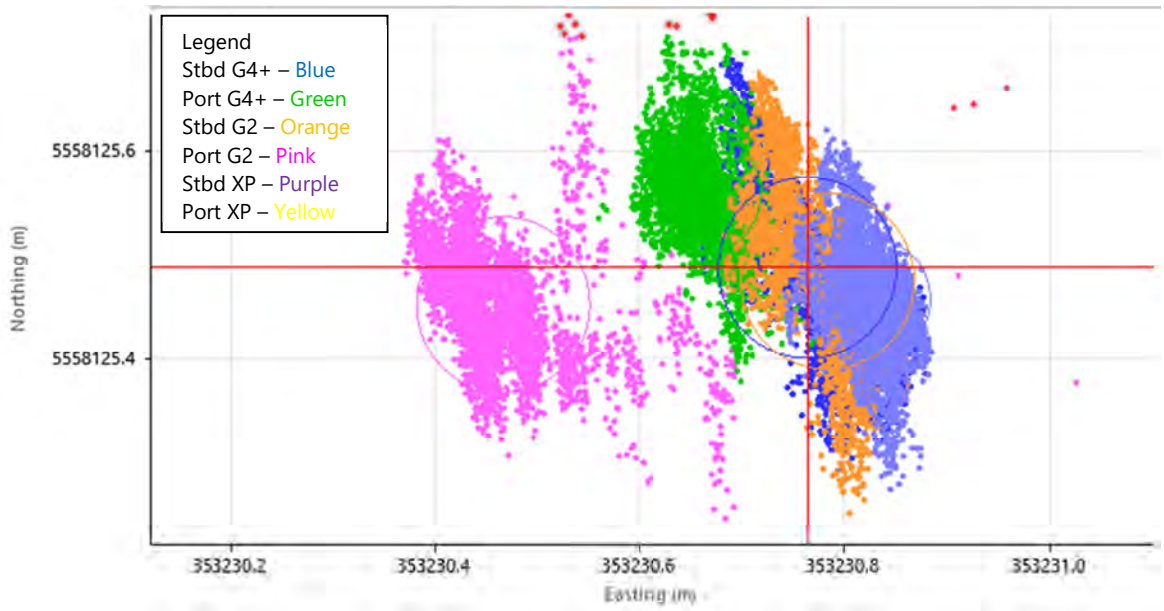


Figure 2.3: DGNSS comparison

2.5 DGNSS Position Verification and Heading Verification

2.5.1 Position Verification

Position verification was completed on 25 May 2022 whilst the Neptune Barge was jacked-up alongside in Falmouth. Reference position point on the Barge was logged for one hour at a sample rate of 1 Hz with both on board Fugro StarPacks solutions. They were compared against the CRP of the Barge derived from independent RTK observations (RTK unit: Topcon Tesla, s/n: 1604-16513B).

An overview of the results from the position verification are listed and shown in the following table.

Table 2.4: Vessel Position Verification Results

Deme Neptune	Easting [m]	Northing [m]	Δ E [m]	Δ N [m]	Range [m]	Bearing [°G]
Check Point from RTK	353205.56	5558124.40	-	-	-	-
Check Point from Port G4+	353205.56	5558124.39	0.00	0.01	0.01	35.7
Check Point from Stbd G4+	353205.57	5558124.38	-0.01	0.02	0.02	339.4

2.5.2 Heading Verification

Heading verification was completed on 25 May 2022 whilst the Neptune Barge was jacked-up alongside in Falmouth. Heading of the barge computed from on board Fugro ProTrack systems was compared against the heading of the barge derived from independent RTK observations (RTK unit: Topcon Tesla, s/n: 1604-16513B) along centreline of the Deme Neptune.

Table 2.5: RTK Points and Vessel Heading from RTK Points (ETRS89 UTM Zone 30N)

RTK point	Easting [m]	Northing [m]
FWD centre of barge	353 240.327	5 558 125.638
AFT centre of barge	353 205.049	5 558 123.801
Heading	87.02 [°G] / 85.44 [°T]	

An overview of the results from the heading verification are listed and shown in the following table.

Table 2.6: Vessel Heading Verification Results

Deme Neptune	Heading [°T]	Difference [°]
Heading from RTK Observations	85.4	-
Heading from Stbd StarPack Observations	85.4	0.0
Heading from Port StarPack Observations	85.3	0.1

3. Summary of Events

A summary of operations is listed in the following table.

Table 3.1: Summary of Events

Date/Time [UTC+1]		Task
Start	End	
20/05/2022 17:00	20/05/2022 24:00	Vessel safety familiarisation and project briefing
21/05/2022 00:00	21/05/2022 24:00	Commence mobilisation: • Cantilever dimension collected • Standing by waiting on equipment
22/05/2022 00:00	22/05/2022 24:00	Standing by waiting on equipment
23/05/2022 00:00	23/05/2022 11:40	Standing by waiting on equipment
23/05/2022 11:40	23/05/2022 24:00	Recommence mobilisation. • System PC installed and project created • GNSS antennas installed • Antenna offset measured
24/05/2022 00:00	24/05/2022 24:00	Continue mobilisation. • GNSS antennas cables run • All offset measured • RTK observation for position verification • Position comparison
25/05/2022 00:00	25/05/2022 17:00	Continue mobilisation. • Position comparison and verification • RTK observation for position and heading verification • Position and heading verification • Mob and Cal report issued

4. Survey Control

4.1 Project Geodetic Parameters

All geographical co-ordinates referred to within this document, are based on World Geodetic System 1984. Grid coordinates are expressed on the Universal Transverse Mercator Grid System, Zone 30N, Central Meridian 3° W.

Table 4.1: Geodetic Parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00′ 00.000″ N	
Central meridian	003° 00′ 00.000″ W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Vertical reference datum is VORF LAT.

5. Personnel and Equipment

5.1 Personnel

Table 5.1: Personnel List

Name	Job Title	Joined Vessel	Demob from vessel
T. Michalowski	Senior Surveyor	20/05/2022	
R. Paterson	Senior Survey Engineer	20/05/2022	25/05/2022

5.2 Equipment

Table 5.2: Navigation Equipment

Equipment	Qty
StarPack DGNSS Systems	2
GNSS Antennas	4
Online Navigation Computers (w. StarfixNG software)	2
Reporting Computer c/w MS Office	1

6. General Safety

Upon arrival on the Deme Neptune Jack-up Barge all personnel underwent an induction briefing, carried out by a member of the marine crew, addressing the primary safety issues surrounding the barge. Following the completion of the initial briefing, a safety tour on the barge was taken to show and indicate the safety features. In addition, various meetings were held with members from both the marine and survey crew to define the project and general offshore operations.

All survey and project related mobilisation and calibration operations were carried out in a safe and responsible manner and did not at any time compromise Fugro Health and Safety policies.

6.1 Protective Clothing

All Fugro personnel carry the following protective clothing:

- Hard hat;
- Safety boots;
- Safety glasses;
- Coveralls;
- Gloves.

6.2 Documentation

All Fugro personnel were in possession of the following MLC2006 compliant documentation:

- Current passport;
- OGUK/Norwegian approved offshore medical certificate;
- Vaccination booklet;
- Current employment contract;
- Recent pay slip;
- Current curriculum vitae (CV);
- Certificate of employer's liability insurance;
- Minimum Industry Safety Training (MIST) certificate.

A project specific emergency response document was issued to the vessel at mobilisation.

6.3 Hazardous Operations

During the vessel mobilisation and calibration all safety procedures were adhered to.

6.4 Toolbox Meetings

Toolbox meetings are a regular feature of the safety culture onboard. Task specific toolbox talks were conducted before a new or specific project task taking place.

Appendix A

Sequence of Events

A.1 Sequence of Events

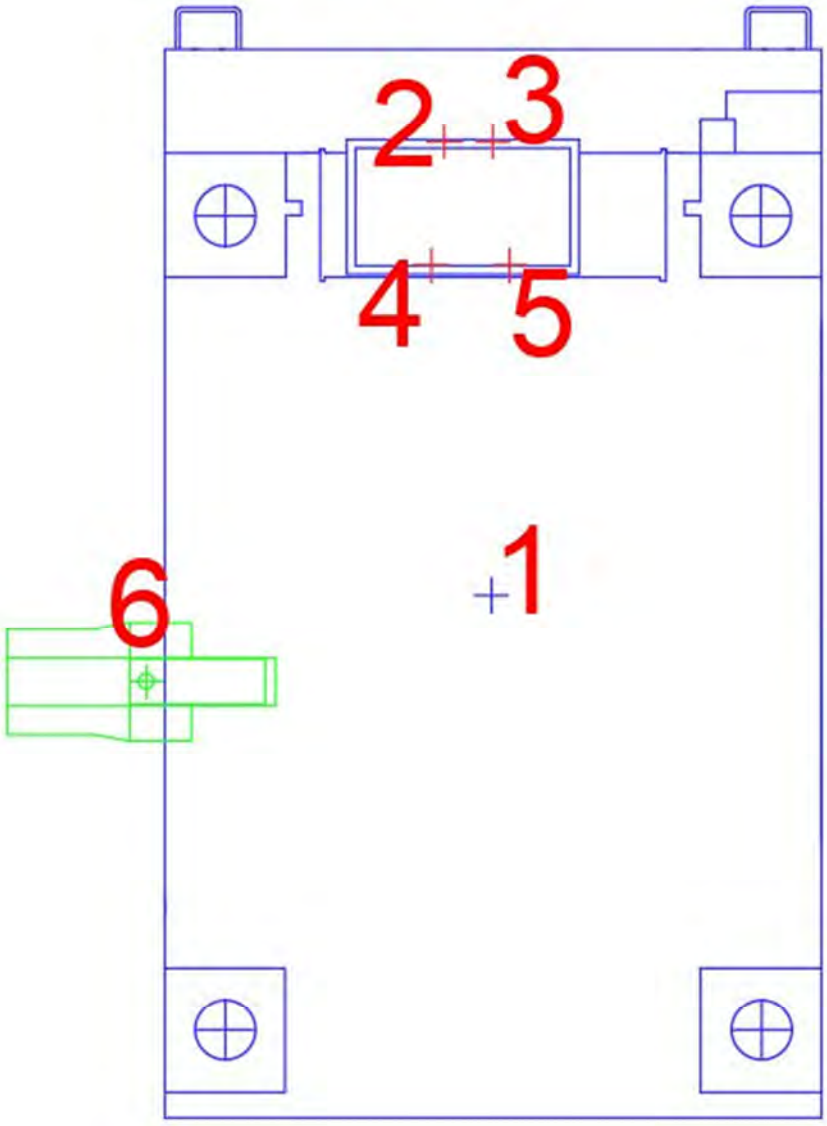
Date	Time [UTC+1]	Event
20/05/2022	17:00	Fugro Survey team arrived on board Deme Neptune: Tomasz Michalowski – Surveyor, Ryan Paterson – Survey Engineer
	17:30	Covid 19 LFT's passed by survey team
	18:30	Commence vessel familiarisation and induction
	19:00	Complete vessel induction
	20:00	Project briefing for all crew
	21:00	Survey spread mobilisation briefing
	23:59	Vessel alongside in Falmouth, UK
21/05/2022	00:00	Vessel alongside in Falmouth, UK
	07:00	Mobilisation toolbox talk
	08:00	Commence cantilever offset measurement
	08:20	Cantilever offset measured
	10:00	Survey kit confirmed not to be delivered to the vessel. Awaiting equipment until Monday
	10:30	Client and Fugro Project Manager aware of issues with survey equipment delivery
	11:00	Check of available slots and space for survey antennas and equipment on the bridge
	23:59	Vessel alongside in Falmouth, UK
22/05/2022	00:00	Vessel alongside in Falmouth, UK. Continue awaiting for equipment
	11:00	Decision made to setup survey equipment on the bridge
	11:45	Cantilever platform offsets measured
	14:30	Antenna poles prepared for installation on bridge roof
	23:59	Vessel alongside in Falmouth, UK
23/05/2022	00:00	Vessel alongside in Falmouth, UK. Continue awaiting for equipment
	11:40	Survey equipment arrived on board
	12:30	Fugro Project Manager informed about lack of GNSS cables delivered
	14:00	Survey system installed on bridge
	14:30	Project created in Starfix
	15:00	GNSS antennas installed on bridge roof
	17:00	Vessel offsets measured
	18:00	Vessel heading derived from RTK measurement
	20:30	Measured offsets computed and checked
	23:59	Vessel alongside in Falmouth, UK

Date	Time [UTC+1]	Event
24/05/2022	00:00	Vessel alongside in Falmouth, UK
	09:40	Antenna cables arrived on board
	12:30	All antennas connected and interfaced into the system
	14:30	All antenna offsets measured
	15:00	Toolbox talk regarding ref point on cantilever
	15:30	Vessel CRP offset measured
	17:30	RTK measurement collected on the vessel
	19:15	All vessel offset re-checked and entered into system
	19:30	Commence position comparison check
	21:00	Stop position comparison check due to crane operation above bridge
	21:30	Commence position comparison check
	23:30	Stop position comparison check due to crane operation above bridge
	23:59	Vessel alongside in Falmouth, UK
25/05/2022	00:00	Vessel alongside in Falmouth, UK
	05:30	Commence position comparison check
	07:00	Stop position comparison check due to crane operation above bridge
	08:30	Commence position comparison check
	09:30	Complete position comparison check
	11:30	Commence RTK measurement for position and heading verification
	12:30	Complete RTK measurement for position and heading verification
	17:00	Position and heading verification computation complete
	17:10	Mob and Cal report issued to PM for review

Appendix B

Offset Diagrams

B.1 Deme Neptune Jack-Up Barge Offsets



Point	Description	X [m]	Y [m]	Z[m]
1	CRP (deck level)	0.000	0.000	0.000
2	Port Fwd StarPack Antenna	-2.749	26.315	17.993
3	Stbd Fwd StarPack Antenna	0.084	26.247	18.078
4	Port Aft StarPack Antenna	-3.470	19.077	17.963
5	Stbd Aft StarPack Antenna	1.046	19.102	17.958
6	Drilling ref point	-19.995	-5.025	1.330

Appendix C

Position and heading check

C.1 Position and heading check MPR

Fugro Geoservices Inc

Position comparison

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Session

Session name	Neptune Pos 20220525-v1
Units and Format	Local grid (World Standard)
Start Time	25 May 2022, 08:38:05+01:00
End Time	25 May 2022, 09:38:04+01:00
Duration	59m 59s
Number of Observations	3596

Table 3: Positioning system CRS and offsets

	System	CRS	X [m]	Y [m]	Z [m]
1	SPK2-STBD-Starfix.G4 Plus 20003	WGS 84(2D)	0.08	26.25	18.08
2	SPK1-PORT-Starfix.G4 Plus 10003	WGS 84(2D)	-2.75	26.32	17.99
3	SPK2-STBD-Starfix.G2 20006	WGS 84(2D)	0.08	26.25	18.08
4	SPK1-PORT-Starfix.G2 10006	WGS 84(2D)	-2.75	26.32	17.99
5	SPK2-STBD-Starfix.XP2 20002	WGS 84(2D)	0.08	26.25	18.08
6	SPK1-PORT-Starfix.XP2 10002	WGS 84(2D)	-2.75	26.32	17.99

Table 4: Sensor data (mean values over data periods)

	Antenna Positions	East [m]	North [m]	H [m]	East SD [m]	North SD [m]	H SD [m]	Obs
1	SPK2-STBD-Starfix.G4 Plus 20003	353 256.974 E	5 558 126.810 N	31.026 CD	± 0.05	± 0.06	± 0.12	3596
2	SPK1-PORT-Starfix.G4 Plus 10003	353 256.788 E	5 558 129.738 N	30.968 CD	± 0.03	± 0.12	± 0.40	3350
3	SPK2-STBD-Starfix.G2 20006	353 256.993 E	5 558 126.797 N	30.990 CD	± 0.04	± 0.06	± 0.15	3597
4	SPK1-PORT-Starfix.G2 10006	353 256.593 E	5 558 129.617 N	31.236 CD	± 0.08	± 0.09	± 0.42	3497
5	SPK2-STBD-Starfix.XP2 20002	353 257.035 E	5 558 126.780 N	30.961 CD	± 0.03	± 0.04	± 0.12	3596
6	SPK1-PORT-Starfix.XP2 10002	353 256.875 E	5 558 129.519 N	31.203 CD	± 0.42	± 0.20	± 0.30	3535

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Table 5: Heading sensor data

	Heading Sensors	Obs T [°]	Obs G [°]	Conv [°]	SD [°]	(C-O) [°]	Obs T [°]	Obs G [°]	Diff [°]	Records
1	SPK2-STBD	85.4	86.9	-1.57790	0.09	0.00	85.4	86.9	0.00	3596
2	SPK1-PORT	85.3	86.9	-1.57790	3.11	0.00	85.3	86.9	0.07	3596

Table 6: Pitch sensor data

	Pitch Sensors	Observed [°]	SD [°]	(C-O) [°]	Computed [°]	Difference [°]	Records

Table 7: Roll sensor data

	Roll Sensors	Observed [°]	SD [°]	(C-O) [°]	Computed [°]	Difference [°]	Records

Table 8: Results: Deme Neptune Mean Position at CommonReferencePoint (UTM zone 30N CM -3° W)

	Name	East [m]	North [m]	H [m]	1xDRMS [m]	ΔEast [m]	ΔNorth [m]	ΔH [m]	Obs
1	SPK2-STBD-Starfix.G4 Plus 20003	353 230.764 E	5 558 125.487 N	12.948 CD	0.09	0.00	0.00	0.00	3596
2	SPK1-PORT-Starfix.G4 Plus 10003	353 230.660 E	5 558 125.559 N	12.906 CD	0.06	-0.11	0.07	-0.04	3350
3	SPK2-STBD-Starfix.G2 20006	353 230.783 E	5 558 125.474 N	12.912 CD	0.08	0.02	-0.01	-0.04	3597
4	SPK1-PORT-Starfix.G2 10006	353 230.466 E	5 558 125.452 N	13.216 CD	0.08	-0.30	-0.04	0.27	3497
5	SPK2-STBD-Starfix.XP2 20002	353 230.825 E	5 558 125.457 N	12.883 CD	0.06	0.06	-0.03	-0.07	3596
6	SPK1-PORT-Starfix.XP2 10002	353 230.749 E	5 558 125.365 N	13.210 CD	0.47	-0.01	-0.12	0.26	3535

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Table 9: Geodetic parameters

Name: WGS 84 / UTM zone 30N,VORF LAT height [UK]		
EPSG Code	EPSG:32630	
Global Navigation Satellite System (GNSS) Geodetic Parameters*		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Geodetic Datum Parameters		
Datum	World Geodetic System 1984	EPSG:6326
Ellipsoid	WGS 84	
Semi major axis	a = 6 378 137.00 m	
Inverse flattening	1/f = 298.257223563	
Local Projection Parameters		
Map projection	Transverse Mercator	
Grid system	UTM zone 30N	EPSG:16030
Latitude origin	00° 00' 00.000" N	
Central meridian	003° 00' 00.000" W	
Scale factor on central meridian	0.9996	
False easting	500 000 m	
False northing	0 m	
Project Vertical Parameters		
Vertical coordinate reference system	VORF LAT height	FUGRO:41042
Datum	VORF LAT Datum	FUGRO:40916
Transformation	ETRS89 to VORF LAT	FUGRO:41338

Table 10: Validation calculation

WGS 84	Test Point [BH01]	Computed Point
Latitude	52° 54' 57.56760" N	52° 54' 57.56760" N
Longitude	005° 55' 19.16040" W	005° 55' 19.16040" W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
WGS 84		
Latitude	52° 54' 57.56760" N	52° 54' 57.56760" N
Longitude	005° 55' 19.16040" W	005° 55' 19.16040" W
Ellipsoidal height	54.334 m Ell.	54.334 m Ell.
UTM zone 30N		
Easting	303 547.000 m	303 547.013 m
Northing	5 866 923.000 m	5 866 923.037 m
Chart datum height	0.000 m	0.000 m

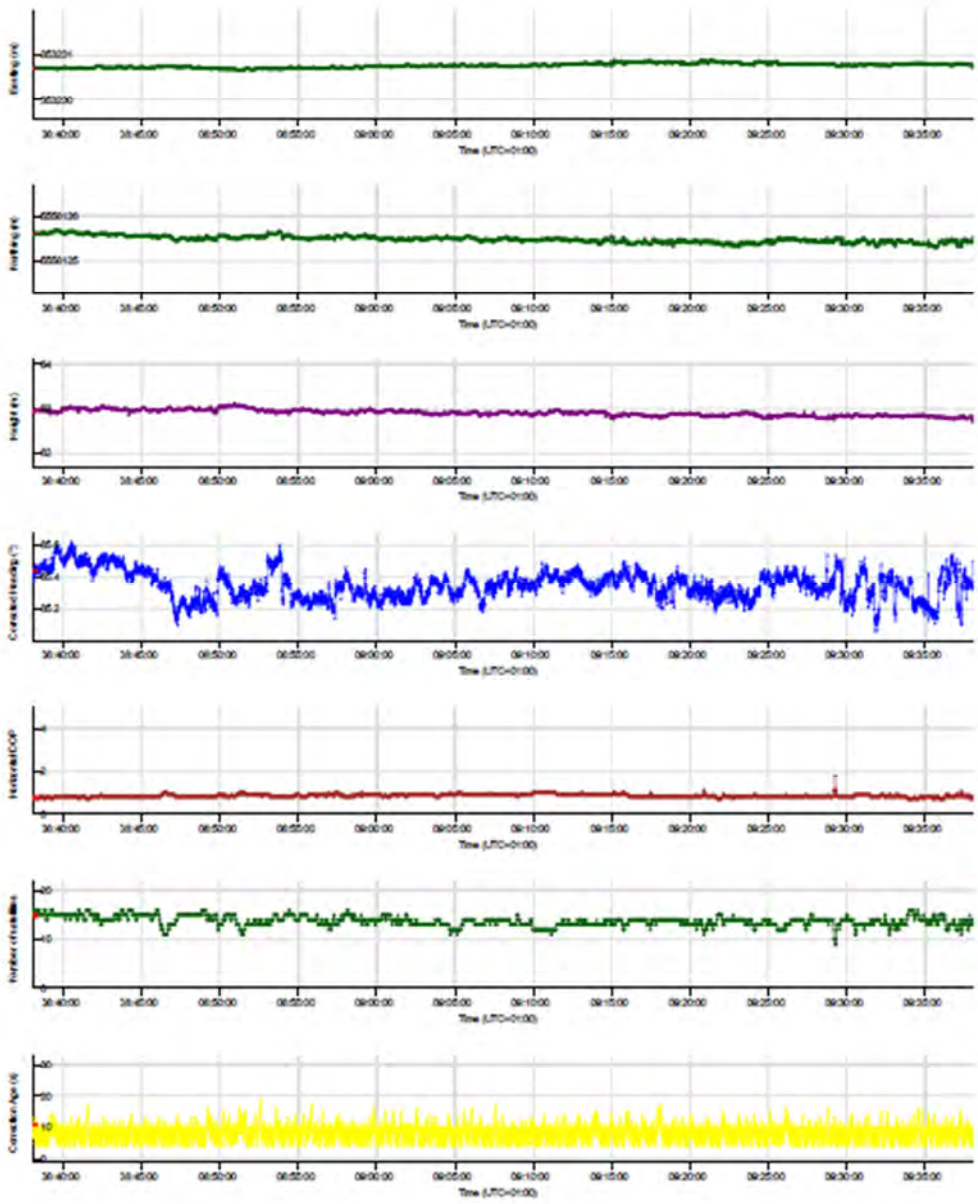

Figure 1: Time series plots for SPK2-STBD-Starfix.G4 Plus 20003

Fugro Geoservices Inc

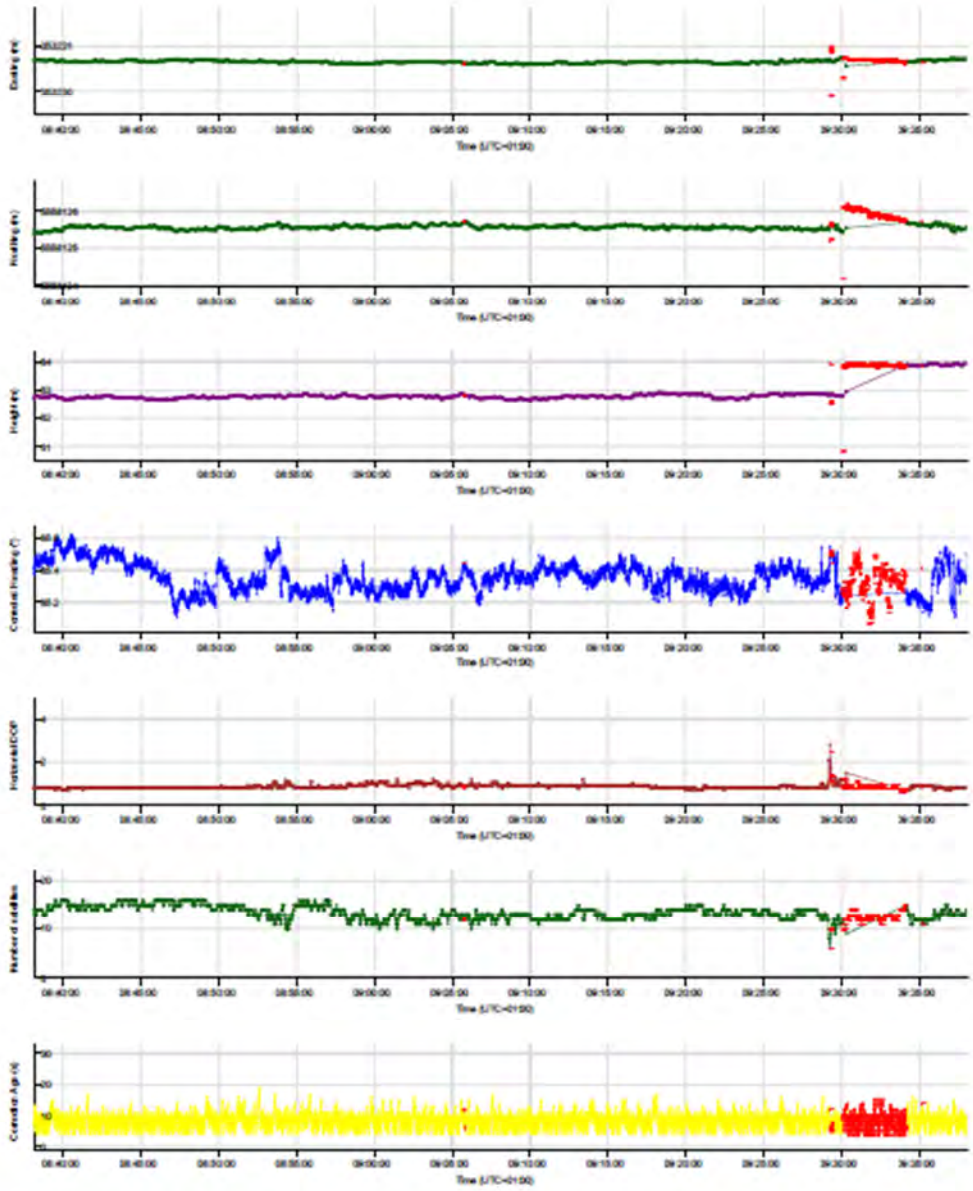

Figure 2: Time series plots for SPK1-PORT-Starfix.G4 Plus 10003

Fugro Geoservices Inc

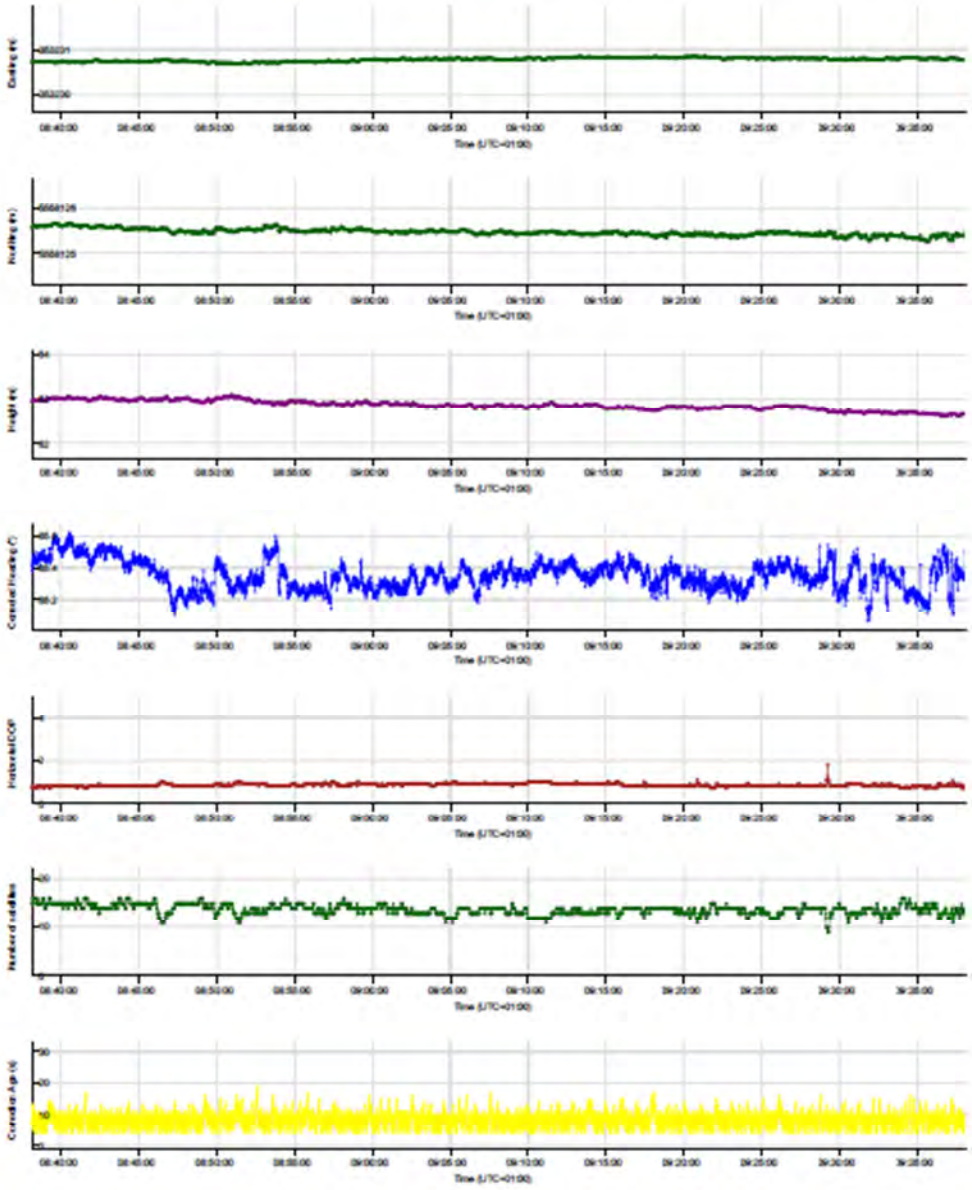

Figure 3: Time series plots for SPK2-STBD-Starfix.G2 20006

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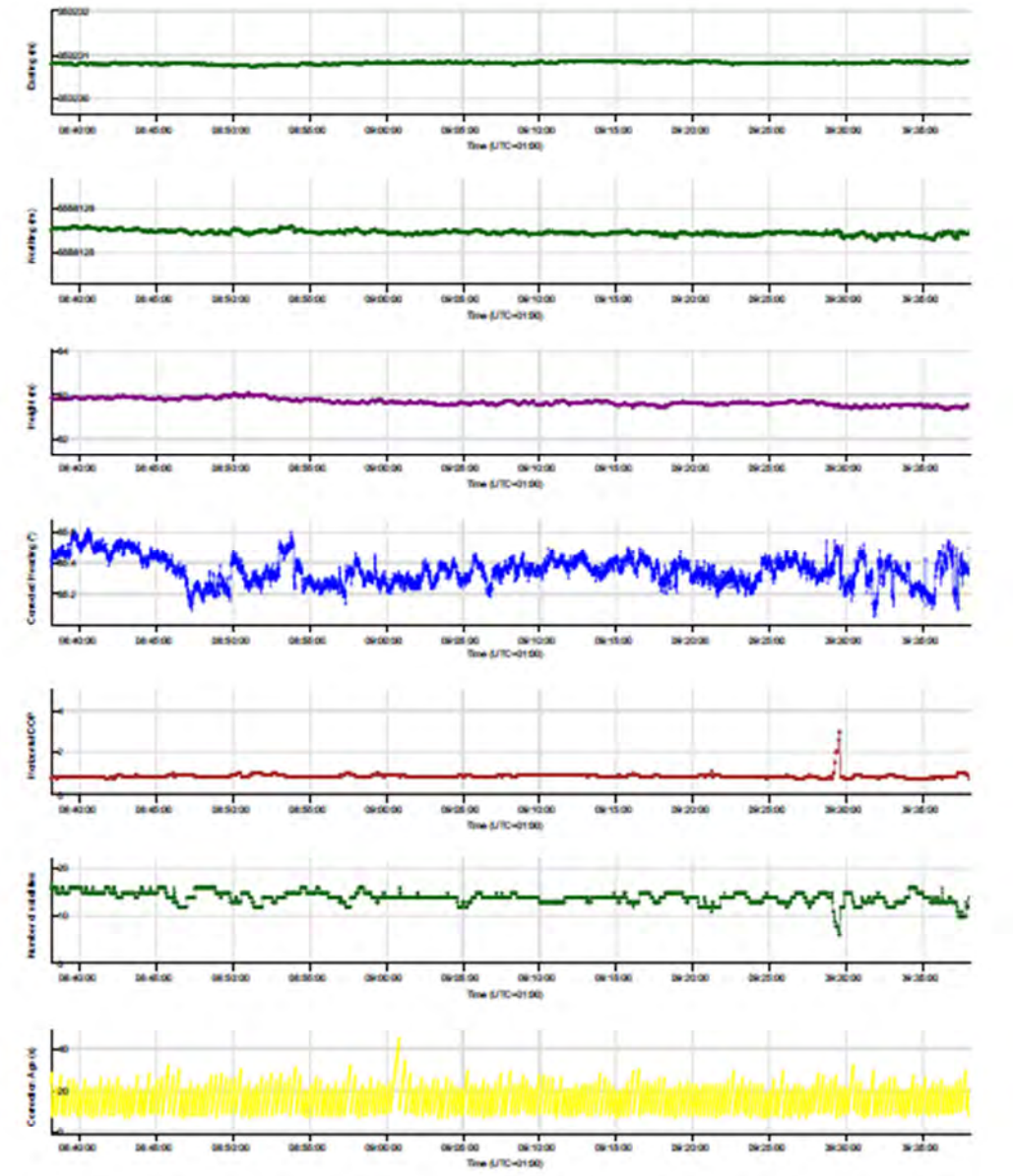

Figure 5: Time series plots for SPK2-STBD-Starfix.XP2 20002

Fugro Geoservices Inc

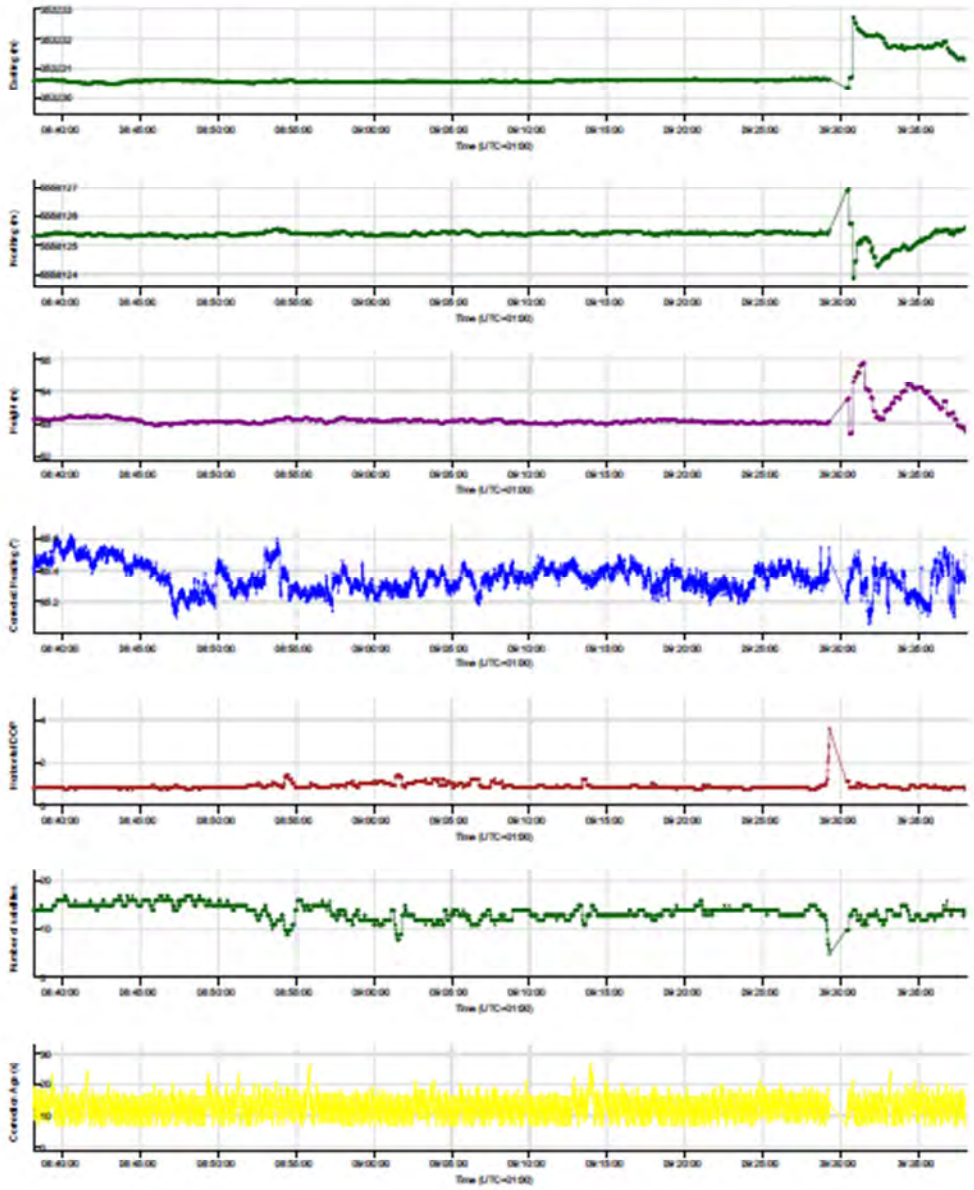

Figure 6: Time series plots for SPK1-PORT-Starfix.XP2 10002

Fugro Geoservices Inc

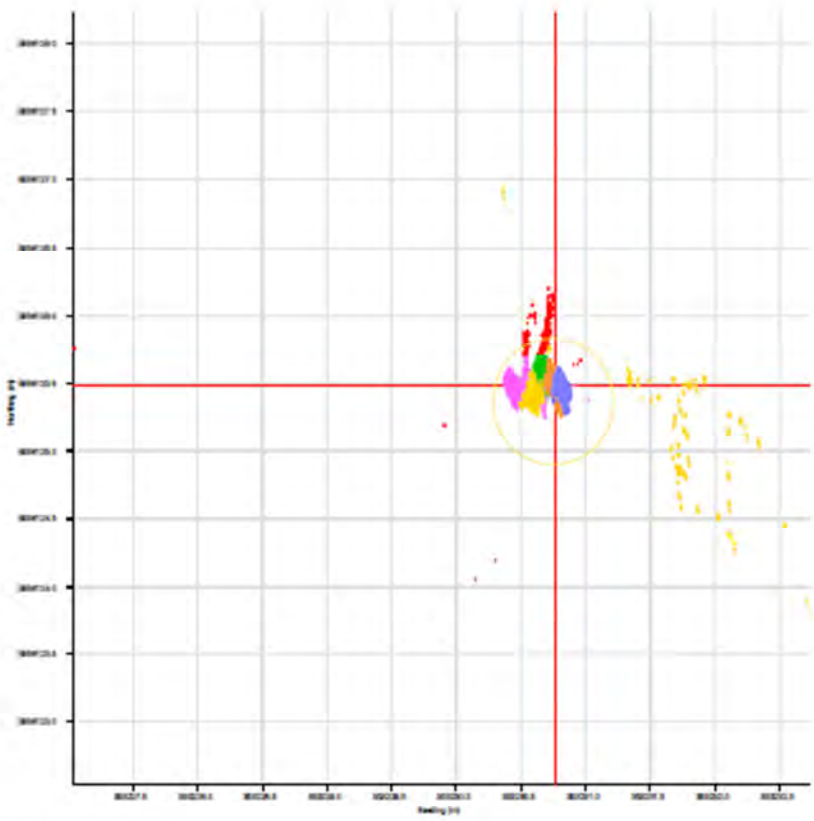

Figure 7: Position scatter plot

Table 11: Position scatter groups

	Sensor Group	East [m]	North [m]	H [m]	ΔEast [m]	ΔNorth [m]	ΔH [m]
	SPK2-STBD-Starfix.G4 Plus 20003	353 230.764 E	5 558 125.487 N	12.948 CD	0.00	0.00	0.00
	SPK1-PORT-Starfix.G4 Plus 10003	353 230.660 E	5 558 125.559 N	12.906 CD	-0.11	0.07	-0.04
	SPK2-STBD-Starfix.G2 20006	353 230.783 E	5 558 125.474 N	12.912 CD	0.02	-0.01	-0.04
	SPK1-PORT-Starfix.G2 10006	353 230.466 E	5 558 125.452 N	13.216 CD	-0.30	-0.04	0.27
	SPK2-STBD-Starfix.XP2 20002	353 230.825 E	5 558 125.457 N	12.883 CD	0.06	-0.03	-0.07
	SPK1-PORT-Starfix.XP2 10002	353 230.749 E	5 558 125.365 N	13.210 CD	-0.01	-0.12	0.26

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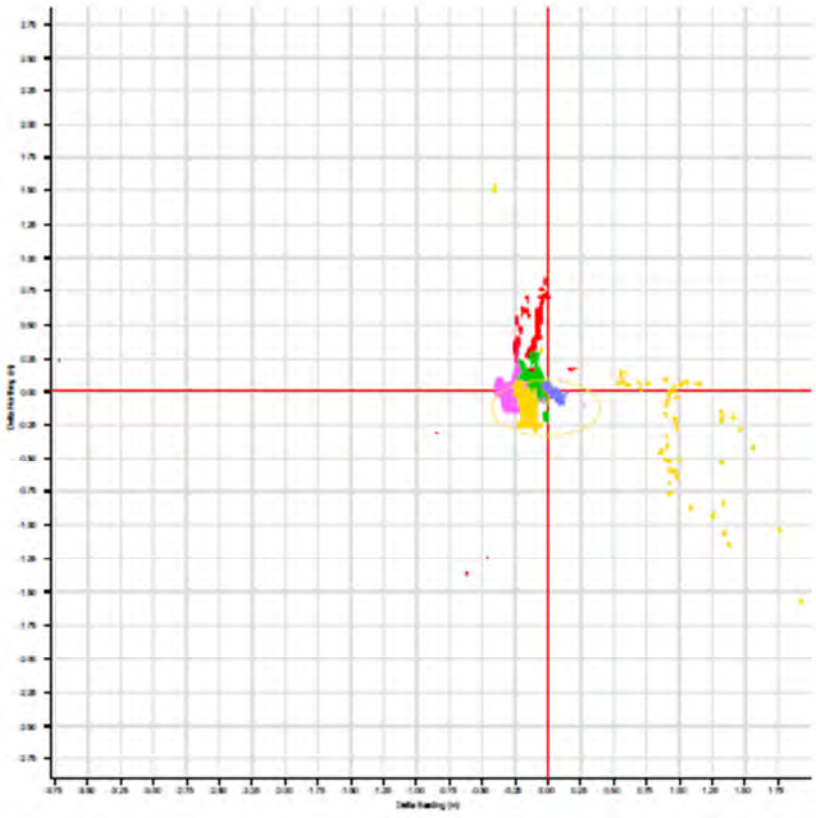

Figure 8: Delta scatter plot

Table 12: Delta scatter groups

	Sensor Group	ΔEast [m]	ΔNorth [m]	ΔH [m]	ΔEast SD [m]	ΔNorth SD [m]	ΔH SD [m]
	SPK2-STBD-Starfix.G4 Plus 20003	0.00	0.00	0.0	± 0.00	± 0.00	± 0.00
	SPK1-PORT-Starfix.G4 Plus 10003	-0.10	0.07	0.0	± 0.06	± 0.09	± 0.33
	SPK2-STBD-Starfix.G2 20006	0.02	-0.01	0.0	± 0.02	± 0.02	± 0.05
	SPK1-PORT-Starfix.G2 10006	-0.30	-0.04	0.3	± 0.06	± 0.07	± 0.39
	SPK2-STBD-Starfix.XP2 20002	0.06	-0.03	-0.1	± 0.03	± 0.03	± 0.03
	SPK1-PORT-Starfix.XP2 10002	-0.01	-0.12	0.3	± 0.41	± 0.21	± 0.31

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Appendix D

Position Verification

D.1 Position Verification of Port StarPack G4+ solution against RTK Reference Point

Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Session Details

Session	CL2 position verification-v1
Start Time	25 May 2022, 14:53:35+01:00
End Time	25 May 2022, 15:53:34+01:00
Session Length	59m 59s

Table 3: Mean Position for Deme Neptune at CL2

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	50° 09' 25.71034" N	50° 09' 25.71034" N
Longitude	005° 03' 18.24239" W	005° 03' 18.24239" W
Height	62.679 m Ell., -1.328 m ISS	62.679 m Ell., 9.306 m Ort.
Easting	353 205.557 m E (± 0.03 m)	
Northing	5 558 124.390 m N (± 0.25 m)	
Height	12.727 m CD (± 0.13 m) , -1.328 m ISS (± 0.05 m)	

Table 4: Sensor Averages

Sensor	Sensor Average	SD
Heading	85.3° T, 86.8° G	± 0.3°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	0.0 m	

Table 5: Mean Position to Target

Target	RTK fix CL2		
Position	353 205.562 m E, 5 558 124.400 m N		
Range	0.01 m Grid		
Bearing To	24.8° G	Bearing From	204.8° G

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D.2 Position Verification of Stbd StarPack G4+ solution against RTK Reference Point

Fugro Geoservices Inc

Mean Position Report

Table 1: Project details

Project Name	DEME Neptune at Arklow Bank
Project Number	210537_JUB
Client	Fugro Geoservices Inc
Project Type	Positioning
Starfix Version	v2020.1143.9 (build 0)

Table 2: Session Details

Session	CL2 position verification STBD-v1
Start Time	25 May 2022, 15:57:58+01:00
End Time	25 May 2022, 16:57:57+01:00
Session Length	59m 59s

Table 3: Mean Position for Deme Neptune at CL2

	WGS 84 / UTM zone 30N,VORF LAT height [UK]	WGS 84 (EGM2008)
Latitude	50° 09' 25.71006" N	50° 09' 25.71006" N
Longitude	005° 03' 18.24179" W	005° 03' 18.24179" W
Height	62.864 m Ell., -1.329 m ISS	62.864 m Ell., 9.491 m Ort.
Easting	353 205.569 m E (± 0.03 m)	
Northing	5 558 124.381 m N (± 0.05 m)	
Height	12.912 m CD (± 0.11 m) , -1.329 m ISS (± 0.04 m)	

Table 4: Sensor Averages

Sensor	Sensor Average	SD
Heading	85.3° T, 86.9° G	± 0.1°
Pitch	0.00 °	± 0.00 °
Roll	0.00 °	± 0.00°
Depth (Manual)	0.0 m	

Table 5: Mean Position to Target

Target	RTK fix CL2		
Position	353 205.562 m E, 5 558 124.400 m N		
Range	0.02 m Grid		
Bearing To	339.4° G	Bearing From	159.4° G

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End of Document

Appendix F

Vessel Data

F.1 Equipment Datasheets

Description	Document Number
DEME Neptune	Datasheet 001
Comacchio MCS 1200	Datasheet 002
Pilcon Winch	Datasheet 003
Geobor-S	Datasheet 004
20T Hydraulic Rams	Datasheet 005

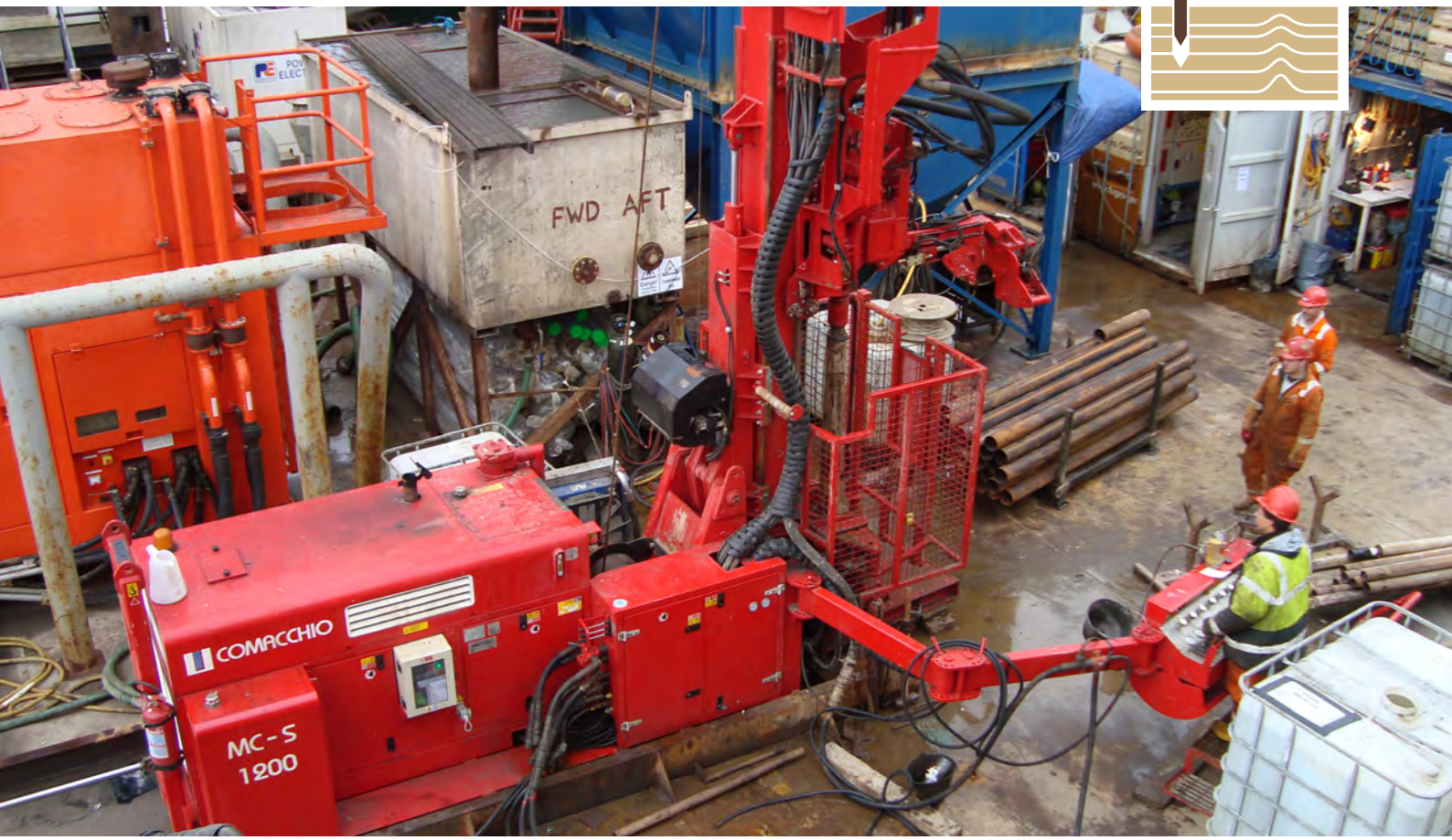
<table>
<tr><th colspan="2">Vessel Specification (Neptune)</th></tr>
<tr><td>Company (as defined by the ISM Code)</td><td>DEME OFFSHORE LU SA</td></tr>
<tr><td>Vessel name</td><td>Neptune</td></tr>
<tr><td>Year / Builder</td><td>2012 by IHC Offshore & Marine B.V.</td></tr>
<tr><td>Type</td><td>Offshore Heavy Lift DP2 Jack-Up Vessel</td></tr>
<tr><td>Full class notation</td><td>✠A1, Self-Elevating Unit, restricted service ✠AMS, ✠ABCU, ✠DPS-2</td></tr>
<tr><td>Flag and Port of Registry</td><td>Luxembourg</td></tr>
<tr><td>IMO No.</td><td>9616864</td></tr>
<tr><td>L.O.A.</td><td>60m</td></tr>
<tr><td>Beam</td><td>38m</td></tr>
<tr><td>Depth</td><td>6m</td></tr>
<tr><td>Max draft</td><td>7,28 (Max. Draught loaded (Summer Mark))</td></tr>
<tr><td>Max deadweight Displacement (max draft)</td><td>Max EW is 6000t upgradeable to 6300t</td></tr>
<tr><td>GT/NT</td><td>5125 / 1537</td></tr>
<tr><td colspan="2">Dedicated Cargo Capacities Pumps and discharge rates:</td></tr>
<tr><td>Potable water</td><td>173m3 + 20m3/day fresh water production</td></tr>
<tr><td>Fuel</td><td>305m3 (DMA SPEC. AS PER ISO 8217:2012 – GASOIL ; Sulphur content must be less than 0.1%)</td></tr>
<tr><td colspan="2">Deck areas</td></tr>
<tr><td>Deck area</td><td>2000m2</td></tr>
<tr><td>Clear deck area</td><td>1600m2</td></tr>
<tr><td>Min point loading (T/M2)</td><td>
<table>
<tr><td colspan="2">The following design deck loads are applicable</td></tr>
<tr><td>Main deck - primary supporting members</td><td>10,0t/m²</td></tr>
<tr><td>Main deck - plating and secondary supporting members</td><td>10,0t/m²</td></tr>
<tr><td>Main deck below accommodation</td><td>0,5t/m²</td></tr>
<tr><td>Accommodation decks</td><td>0,5t/m²</td></tr>
<tr><td>Forecastle</td><td>5,0t/m²</td></tr>
<tr><td>Inner bottom</td><td>2,0t/m²</td></tr>
<tr><td colspan="2">The main deck area is suitable to withstand a 5 ton forklift</td></tr>
<tr><td colspan="2">The tanktop is designed for a 2 ton forklift</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Propulsion</td></tr>
<tr><td>Type</td><td>diesel-electric</td></tr>
<tr><td>Dynamic positioning</td><td>Kongsberg DP2</td></tr>
<tr><td>Propulsion</td><td>4x 1600KW Azimuth Thrusters</td></tr>
</table>

Installed power	8950KW
Main engines/generators	4 x diesel Caterpillar 3512C-HD
Auxiliary generators	2 x Caterpillar C32 ACERT
Emergency generator - Make, model and power	1x Caterpillar C9 and 1x Caterpillar LSAM46.2L9
Propellers and rudders - Number and type	4 x azimuthing thrusters (Wartsila CS250-S/WN-K-2400HR)
Cranes	
Main crane	Main crane SWL 600 ton at 25 m Certified for man riding See attached crane curve Note: Auxiliary Crane shown on Neptune drawings included in this Annex A is not present/operational for this Charter
Towing and Anchor Handling - Anchor positioning	
No. of anchors/type.	4 x Delta flipper, 6 ton, proof load 678kN
Anchor Winches	4 x Brusselle anchor winches
Dedicated anchor racks	yes
Anchor wire	Diameter 44mm - MBL 1350kN - Length 600m
PLC	Allen-Bradley
Towing and Anchor Handling - Towing Arrangement	
Minimum Bollard pull of tugboat	49tn
Communications	
MMSI No.	253532000
GMDSS areas	GMDSS, A1+ A2
Fixed VHF	2
Fixed UHF	0
VSAT facilities	Yes: +49 421 517 219 1741 (Captain desk) +49 421 517 219 1742 (Conference call)
Dynamic Positioning	
Class society DP notation	ABS class DP2
Make and model of DP computers	KONGSBERG type: K-POS-DP-21
Reference systems	• GPS 1 - Septentrio Asterx (1) • GPS 1 - DGPS correction via RTK or via Terrastar D corrections

	through Veripos LD3 Demodulator) • GPS 2- Septentrio Asterx (2) • GPS 2 - DGPS correction via RTK or via Veripos Apex² corrections through Veripos LD5 Demodulator) • GPS 3 - Trimble SPS 855 • GPS 3 - correction license Omnistar • MBL Fanbeam MK 4 (laser optical ref. syst.) - 1 fanbeam but usable from 2 locations (leg1 or leg3) • Kongsberg Cyscan MK4 (laser optical ref. syst,) - on leg4
Total LSA	2 x 3 LRA 35 Personals / 124 Life Jacket / 65 immersion suite / 60 Donuts (emergency descending devices) / 1 MOB
Hospital / medical room	Yes
Accommodation in accordance with ILO conventions C92 & C133	yes
Asbestos free certificate	yes
Single Cabins	4
Double cabins	28
Total amount of cabins	32
Offices	3
Capacity of offices	3 persons
Meeting room	1
Capacity of meeting room	8 persons
Gymnasium	Yes. Gym equipment: treadmill, step, rowing device, 5 power devices, 3 bikes
Messroom	1
Capacity of messroom	30 persons (in case of shortage of places, shifts will be created)
Galley	1
Amount of freezers	1 main and 2 day freezers
Amount of fridges	1 main and 2 day fridges
Amount of defrosters	1 piece
Quiet room	1
Capacity of quiet room	8 persons
Recreational Room	1
Capacity of recreational room	10 persons

Smoking room	1
Capacity of smoking rooms	4 persons
Laundry	1
Amount of washing machines in laundry	5 pieces
Amount of drying machines in laundry	5 pieces
Changing rooms	2
Amount of lockers in changing room	30 pieces/changing room
Amount of toilets in changing room	3 pieces/changing room (1 for female personnel)
Amount of showers in changing room	1 piece/changing room
Recreational Facilities	Television and associated DVD-player in each cabin Television and PlayStation 4 in Rec. room Ship's library in quiet room Internet availability for each passenger
Sewage treatment plant	Gertsen & Olufsen - BRO09250
Standby and Firefighting - No. of pumps and monitors	2 fire pumps + 1 emergency fire pumps
FRC/MOB boat (No., type and capacity)	Six survival craft, capable of floating and breaking free in the event of the unit becoming submerged of aggregate capacity of 180 persons. One rescue boat of capacity for six persons.
Other requirements and appended documents	
Deck machinery	Fork-lift truck (or Cherry Picker, e.g. Maeda-LC785)) and driver
Access Gangway	Gangway for access to quayside at port
Fuel Consumption – MGO:	38mt/day –Transit 10mt/day – DP mode positioning operations prior to jackup 4mt/day – Jacked up mode Standby consumption will depend on which mode the vessel is operating
Boat Landing	One boat landing suitable for the use of CTVs Fitted with certified fall arrest SRL. See drawings (attached)
Lifted transfer system	Certified Frog personnel transfer system (Frog XT4)
Neptune deck plan & general arrangement	Attached

Transit speed and economic speed	Transit Speed average 7.2kn; Economic speed 5.0kn
Speed on DP	DP speed (averages): • Outside 500m: 2.0kn / 1.0m/s • Inside 500m: 1kn / 0.5m/s • Inside 100m: 0.2kn / 0.1m/s * Deme accept no liability should the vessel (Neptune) operation during the Charter Period not achieve the above indicated speeds



FUGRO
COMACCHIO MC1200

The MC1200 is a hydraulic skid mounted drilling rig capable of operating all rotary and/or rotary percussive drilling systems.

During the design stage, Fugro worked closely with Comacchio to ensure the development of a fully integrated drilling unit capable of withstanding both the complex and rigorous nature of marine works. For example, the MC1200 has a unique triple holding clamp and breakout arrangement for handling the various casings required. These are complimented by a set of hydraulically adjusted drill string centralisers.

The main mast is equipped with a crane boom and a drill string manipulator arm that enables drill rods and casings to be manoeuvred to and from the working deck with minimal manual intervention.

The main power supply is fully silenced and the hydraulics operate a closed system with biodegradable oil.

The control console is deployed on a multipositional arm, providing the driller with an uninterrupted view of all drilling activities. All rotating parts are guarded within a fully interlocked cage.

The MC1200 is suitable for all aspects of rotary soil investigations, core drilling as well as specialised civil engineering works such as micropiles, anchors and ground consolidation works.



MC1200 deck layout on Excalibur jack-up.

SPECIFICATIONS

MC1200 Marine Drill

Power Pack

Diesel engine:	New generation 132 kW DEUTZ diesel engine series 2012
Engine power:	132 kW (180 HP)/2300 rpm
Main pump:	2 x 190 lt/min./2 x 50, 2 gal/min.
Oil tank:	400 lt / 105.6 gal
Fuel tank:	350 lt / 92.5 gal

Mast

Feed stroke:	4750/7200/10 200 mm
Total length:	7100/9550/12 550 mm/ 23,3/31,3/41,2 ft
Feed force:	7000 daN/ 15 736 lbs
Retract force:	7000 daN/ 15 736 lbs

Clamps

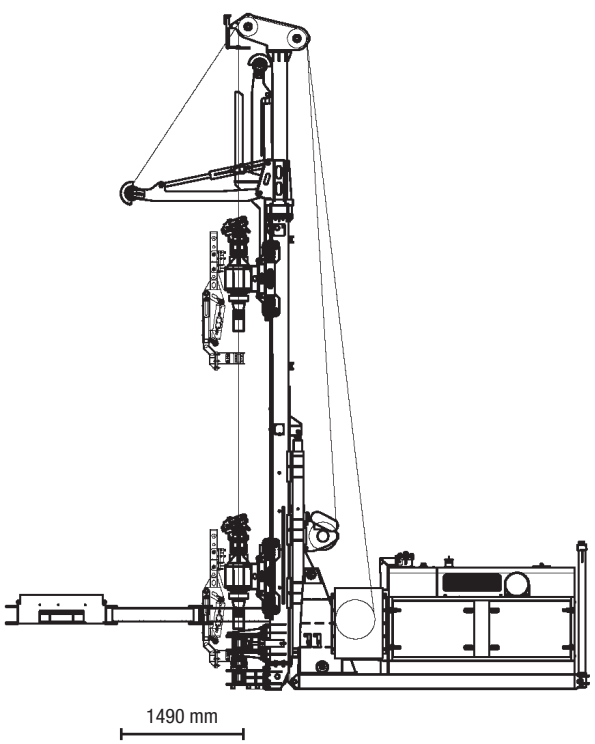
Min. handling:	45 mm / 1,8”
Max. handling:	360 mm /14.1”
Clamping force:	280 kN / 62 946 lbs
Breaking torque:	3500 daNm / 25 814 lb ft

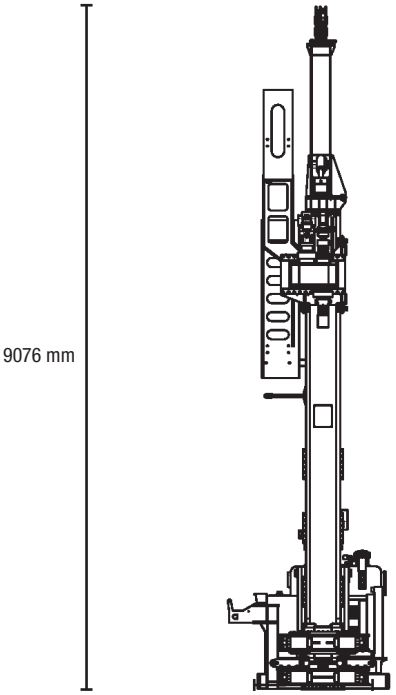
Rotary Head

Gears:	6
Max torque:	1230 daNm/ 9072 lb ft
Max speed:	340 (550) rpm
Head passage:	93 mm/3,6”
Swivel passage:	2”

Winch

Max line pull:	2000 daN/4496 lbs
Drum capacity:	50 mt/164 ft
Rope speed:	30 mt/min./98 ft/min
Rope diameter:	10 mm/0.39”





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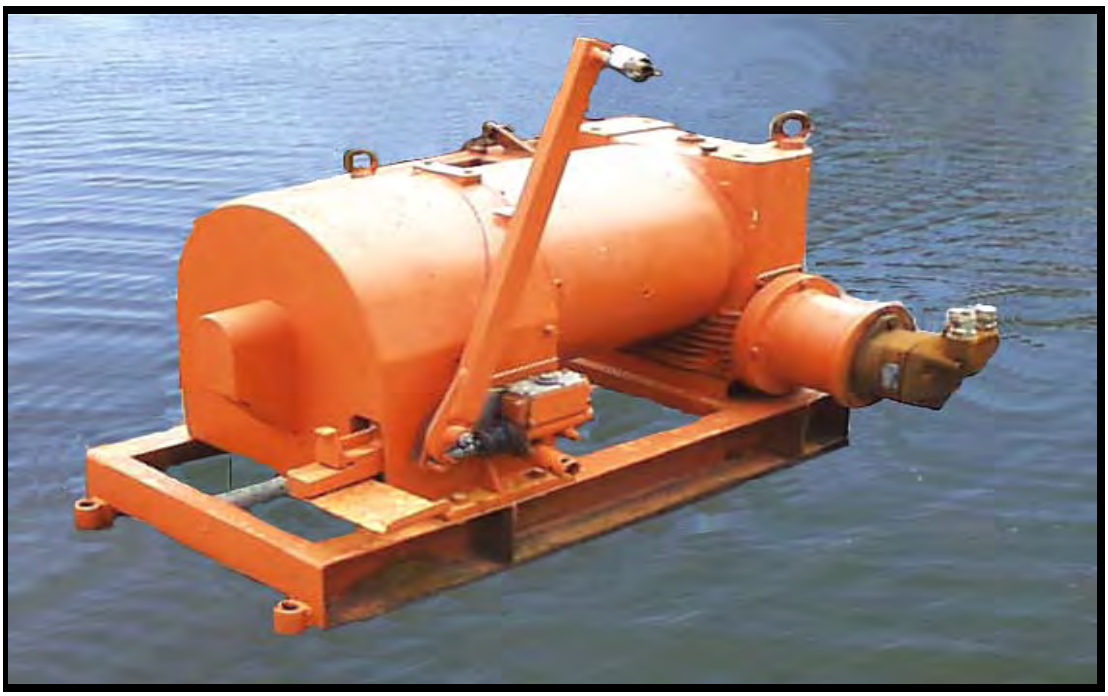
FUGRO GEOSERVICES LIMITED

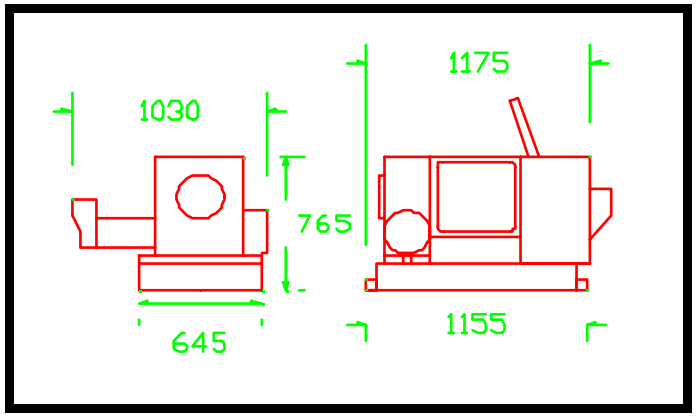
PILCON SHELL AND AUGER WINCHES

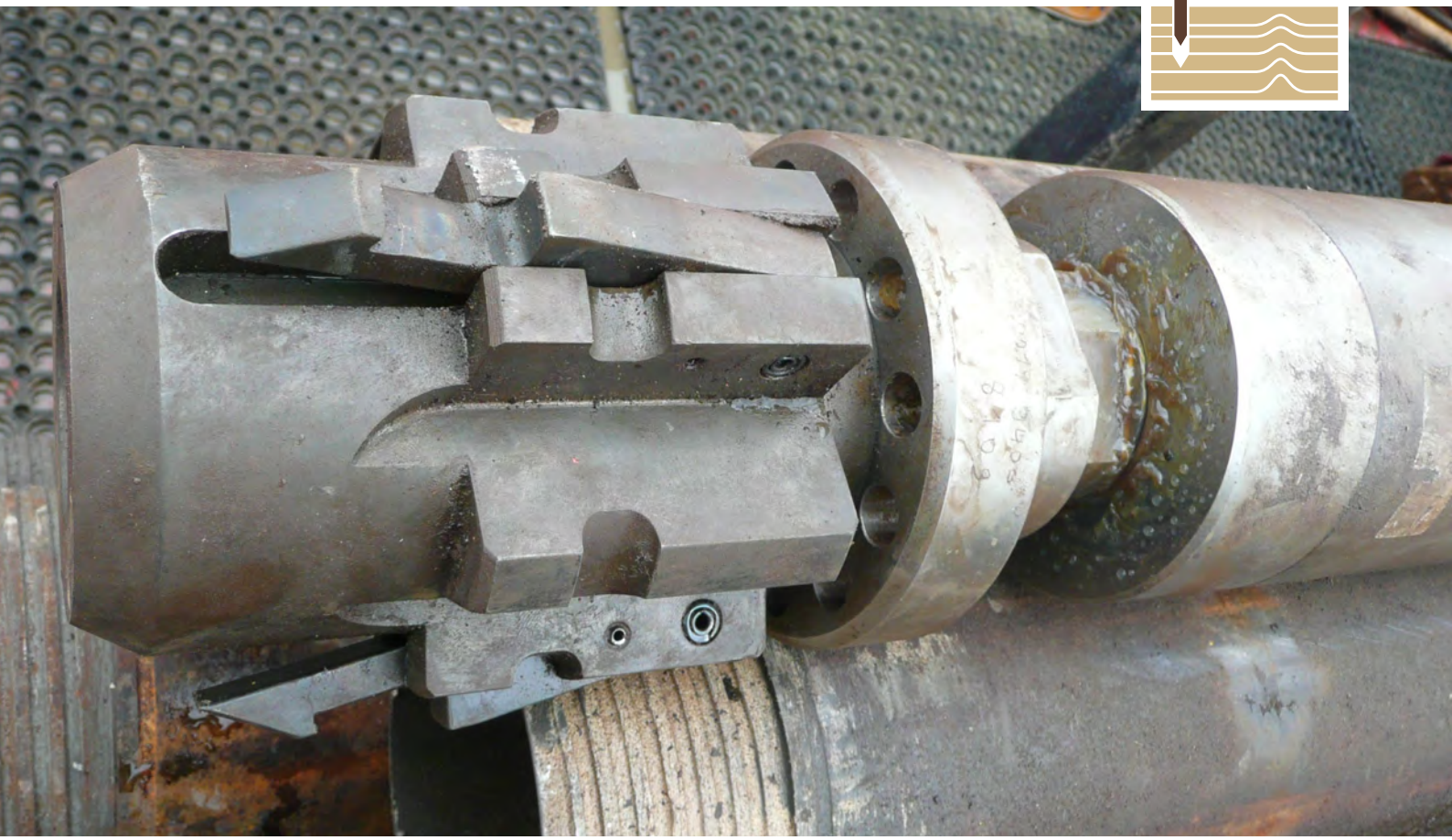
(Plant numbers 323, 403, 404)



Specification:

- **Hydraulic motor:** Volvo F11-058, Cont. power 52.5 kW
- **Hydraulic input:** 150 lpm @ 210 bar
- **Manufactured by:** Pilcon
- **Rated line pull:** 250 kN
- **Wire rope capacity:** Max. 13 mm dia. 184m, 16 mm dia. 121m, 19 mm dia. 86m





FUGRO
GEOBOR-S

With 40 years of drilling experience, Fugro has examined and tested many methods of coring - aiming to minimise core disturbance and maximise core recovery and quality.

GEOBOR-S SYSTEM

Our experience leads us to recommend the use of Geobor-S triple tube wireline drilling system, which has been specially developed for core drilling and undisturbed sampling in a wide variety of soil and rock formations. The Geobor-S is a triple tube core barrel which cuts an “S” size core sample. It has a plastic core liner, which is seated within the inner barrel assembly, considerably reducing friction between the core and the inner tube and enhancing core recovery.

SAMPLE RECOVERY

A nominal 102 mm diameter core sample is recovered from this system, generally in 1.5 m lengths.

The relatively large diameter enhances drilling performance whilst obtaining high-quality core samples, for soil and rock testing.

We provide a wide range of coring bits including but not limited to:

- annular and face discharge,
- surface set and impregnated diamond,
- tungsten carbide saw tooth,
- PCD (polycrystalline diamond).

The core barrel itself is designed for flushing with water, mud or air, and can easily be adapted for most soil and rock conditions by the use of an appropriate core bit or non-coring device.





CORE LINER

The core liner is a rigid, transparent PVC tube with a wall thickness of approximately 1 mm that fits snugly inside the Geobor-S core barrel inner tube, trimmed to 1.5 m lengths. This is provided for all coring works.

The core samples are recovered within the core liner tube and removed from the inner barrel between each consecutive run. The sample can be retained within the core liner tube sealed at both ends and placed into the core box. This minimises handling induced core disturbance, both on the drill deck and during subsequent transport of the core sample to the onshore core store and testing laboratories.

From our experience, the combination of the Geobor-S system used with core liners:

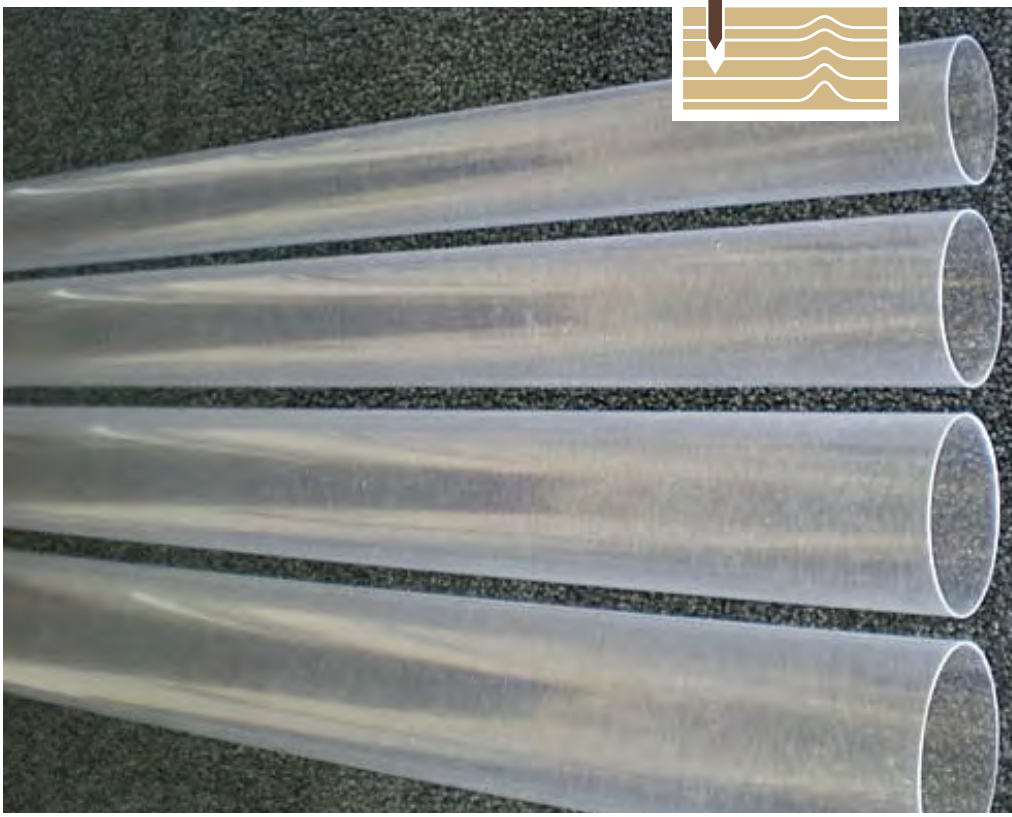
- reduces coring and transport induced disturbance,
- maintains sample quality,
- significantly enhances recovery especially in mixed formations.

Furthermore, we monitor the effectiveness of the various bit types throughout drilling, selecting bits appropriate to varying ground conditions as each borehole progresses. This allows us to maximise core quality and recovery in an appropriate and cost effective manner.

Four methods can be used to suit varying ground conditions:

1. In medium to hard formations, many types of core bits can be used depending on the formation.

2. For coring in soft soil formations, TC-set bits are used and the bit consists of two parts (pilot and reamer).



Geobor-S Core Liner.

Technical Specifications	Metric	Imperial
Hole diameter, method 1 & 4:	146.0 mm	5.75 in
Hole diameter, method 2 & 3:	150.0 mm	5.90 in
Drill bit outer diameter:	145.6 / 149.6 mm	5.73 / 5.90 in
Drill rod outer diameter:	139.7 mm	5.58 in
Bit kerf, method 1:	21.8 mm	0.86 in
Bit kerf, method 2 & 3:	23.8 mm	0.94 in
Core diameter:	102.0 mm	4.05 in
Hole area (od 146/150):	167.3 / 176.7 cm²	26.0 / 27.4 in²
Core area:	81.7 cm²	12.7 in²
Cutting area in % of hole area:	51.7 %	51.7 %

3. For coring in very soft or loose formations, TC-set bits are used. The bit is in two parts as in method two but one core lifter is extended to run 25 mm in front of the bit.

4. For coring in very soft, loose formations with varying layers. The spring-loaded inner tube assembly is extended to run in front of the bit, but is retractable for optimised adaptation to the consistency and density of the ground.

OTHER ADVANTAGES

The advantages of wireline coring over conventional coring (using drill rods and core barrels) include:

- Separate temporary lining casing for borehole stabilisation may not be required.
- The drill string is more rigid.
- The core barrel may be recovered without removing the outer drill rod, thus reducing disturbance to the borehole wall.
- The small annulus between the drill pipe and borehole wall requires significantly lower volumes of flush fluid compared to conventional drilling to achieve adequate uphole velocity for removal of cuttings from the hole. As a consequence, erosion of the formation (particulary at the bit face) is reduced.

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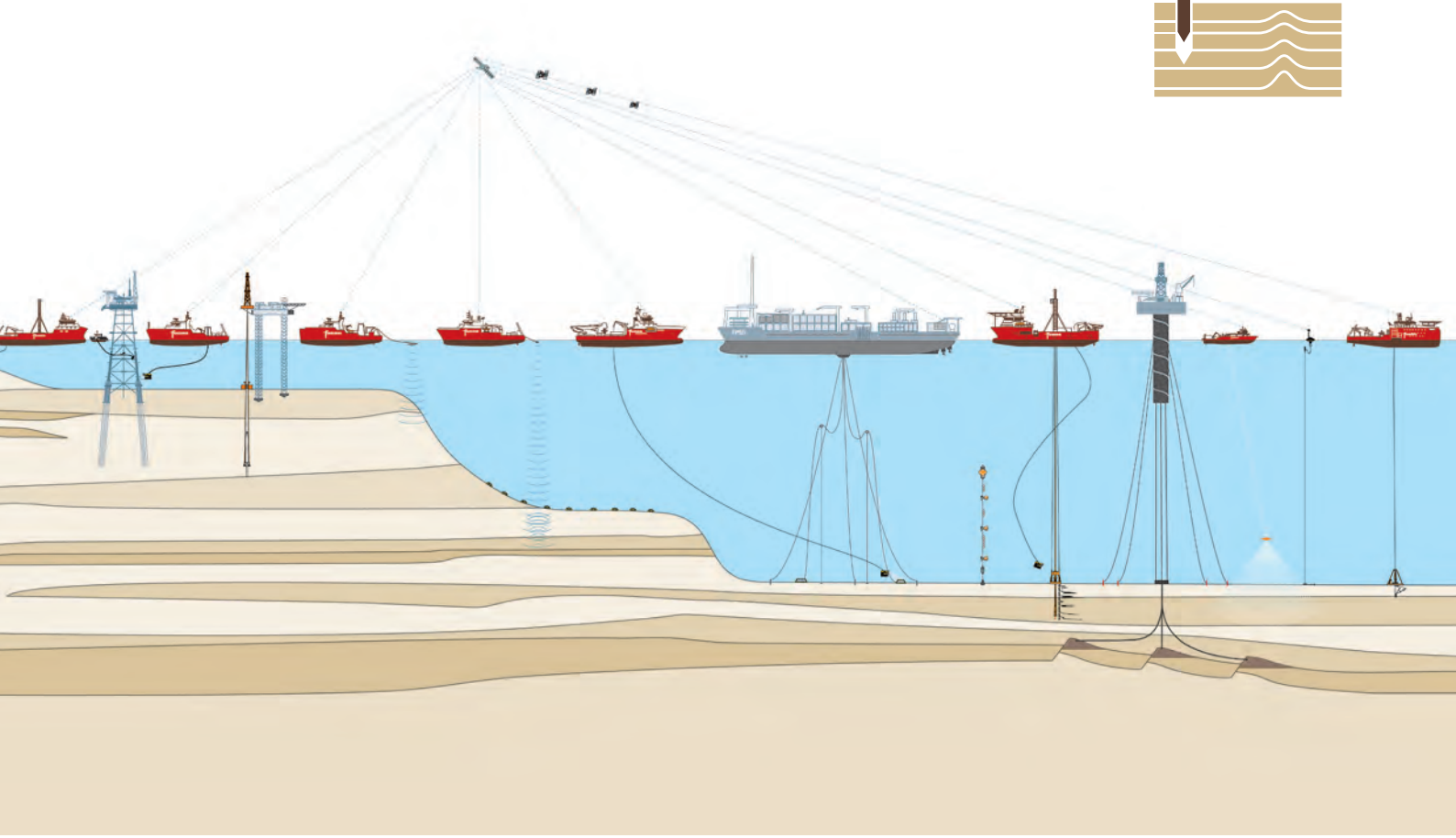
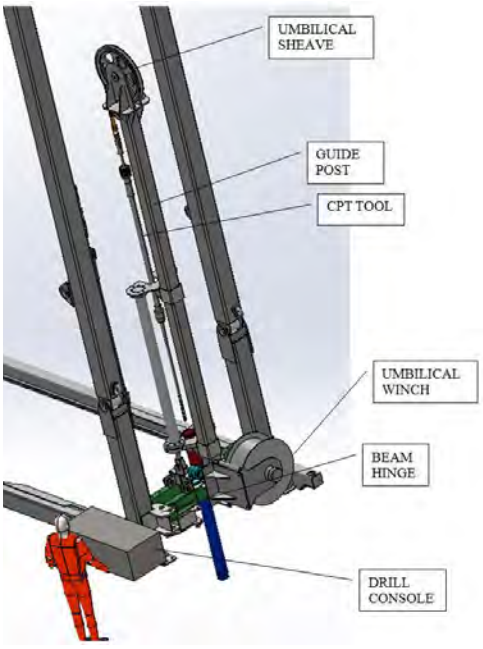


FUGRO SEACORE
20T WIRELINE CPT SYSTEM

This CPT tool offers the flexibility with either 20T top push continuous CPT results pushed conventionally with 20T deck mounted hydraulic rams or a wireline 20T down hole thrust with a 1.5m CPT stroke. Both operations provide real time data on the deck on the platform so that results can be assessed as the data is tested Insitu.

SPECIFICATION

- Setup: Dedicated umbilical winch & sheave for wireline CPT tool deployment. Feed system deployed from a hinged beam.
- Umbilical 12mm Dia, 109kN MBL with 25.5kN fuse element adjacent CPT tool
- Thrust System: hydraulic push, 232kN [23t] capacity from 2 rams.
- Rate of CPT penetration 20mm/sec
- CPT stroke in downhole wireline is 1.5m or continuous CPT to refusal with push from deck. Compatible with Geobor S drill string
- Hydraulic supply: 200 bar
- Real time CPT parameters are acquired and transmitted via umbilical to laptop on deck for display and logging.



20T Wireline CPT System.

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