

PECENED: 201062025 **Environmental Impact** Assessment Report (EIAR) Volume 3 Appendices - Part 3 Chapter 11 and 12

In respect of

A Proposed Large-scale Residential Development at Ratoath, Co. Meath

On behalf of

Beo Properties Ltd.

June 2025

1 Overview

1.1 Overview Appendices

1 Overview1.1 Overview Appendices	N/A N/A
Chapter 1 Introduction	N/A
Chapter 2 Background to the Scheme	N/A
Chapter 3 Planning Policy Context	N/A
Chapter 4 Alternatives	N/A
Chapter 5 Air Quality	N/A
Chapter 6 Climate Factors	N/A
Chapter 7 Noise & Vibration	N/A
Chapter 8 Biodiversity	8.1 Bat Survey
	8.2 Non-volant Terrestrial Fauna
	Assessment
Chapter 9 Archaeology, Architectural &	9.1 Archaeological Impact Assessment
Cultural Heritage	(AIA) Report
Chapter 10 Landscape and Visual	10.1 Verified Views (Baseline and
	Photomontages)
Chapter 11 Land, Soils and Geology	11.1 Site investigation
Chapter 12 Water	12.1 Uisce Eireann EIAR Scoping
	Response Document
Chapter 13 Population & Human Health	N/A
Chapter 14 Material Assets: Traffic &	N/A
Transport	
Chapter 15 Material Assets Waste	N/A
Management	
Chapter 16 Material Assets Utilities	N/A
Chapter 17 Interactions	N/A
Chapter 18 Summary of Mitigation Measures	N/A

Appendix 11.1 - Site investigation



PRCENED. 20/06/2025

HOUSING DEVELOPMENT RATHOAT COUNTY MEATH

PIVOTAL CONSTRUCTION

O'CONNOR SUTTON CRONIN CONSULTING ENGINEERS

CONTENTS

I INTRODUCTION
II FIELDWORK
III TESTING
III DISCUSSION / SUMMARY

APPENDICES

BORING RECORDS I **ROTARY CORE LOG** II TRIAL PIT LOGS III PLATE BEARING TESTS IV INFILTRATION TESTS V **DYNAMIC PROBES** VI LABORATORY VII SITE PLAN VIII

FOREWORD

REWORD

The following Conditions and Notes on Site Investigation Procedures should be read in conjunction with this report.

General.

Recommendations made, and opinions expressed in the report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held for conditions which have not been revealed by exploratory work, or which occur between exploratory hole locations. Whilst the report may suggest the likely configuration of strata, both between exploratory hole locations, or below the maximum depth of the investigation, this is only indicative, and liability cannot be accepted for its accuracy.

Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction below or close to the site.

Standards

The ground investigation works for this project have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as BS 5930 (1999), BS 1377 (Parts 1 to 9) and Engineers Ireland Specification & Related Documents for Ground Investigation in Ireland (2006). The following Irish (IS) and European Standards or Norms are referenced:

- IS EN 1997-2 Eurocode 7: 2007 Geotechnical Design Part 2: Ground Investigation & Testing
- IS EN ISO 22475-1;2006 Geotechnical Investigation and Sampling Sampling Methods & Groundwater Measurements
- IS EN ISO 14688-1:2002 Geotechnical Investigation and Testing Identification and Classification of Soil, Part 1: Identification and Description
- IS EN ISO 14688-2:2004 Geotechnical Investigation and Testing Identification and Classification of Soil, Part 2: Classification Principles

Routine Sampling.

Undisturbed samples of soils, predominantly cohesive in nature are obtained unless otherwise stated by a 104mm diameter open-drive tube sampler or Piston Sampler. In granular soils, and where undisturbed sampling is inappropriate, disturbed samples are collected. Smaller disturbed samples are also recovered at intervals to allow a visual examination of the full strata section.

In-Situ Testing.

Standard penetration tests were conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated in accordance with EN ISO 22476-3:2005 to obtain the Energy Ratio (E.) of each hammer. A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (Etheor) as calculated from the drive weight assembly. The recorded number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2002 and IS EN ISO 14689-1:2004.

Where peat has been encountered during site works, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 & Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986).

Retention of Samples.

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material is discarded unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

Reporting

Recommendations made and opinions expressed in this report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations.

The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for the project client and the information should not be used without prior written permission. Any recommendations developed in this report specifically relate to the proposed development. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

REPORT ON A SITE INVESTIGATION FOR A PROPOSED HOUSING DEVELOPMENT RATHOAT COUNTY MEATH FOR PIVOTAL CONSTRUCTION

O'CONNOR SUTTON CRONIN CONSULTING ENGINEERS

Report No. 22578

September 2020

I Introduction

A new residential development is proposed for a site located south of Rathoat in County Meath.

An investigation of sub soil conditions in the area of the new development has been carried out by IGSL for O'Connor Sutton Cronin, Consulting Engineers, on behalf of Pivotal Construction.

The scheduled site investigation included the following elements.

平	Cable Percussion Boreholes	4 nr.
•	Rotary Holes	I nr.
•	Trial Pits	6 nr.
•	CBR by Plate Test	15 nr.
•	Infiltration Test to BRE Digest 365	4 nr
•	HD Dynamic Probes	2 nr.
•	Geotechnical Laboratory Testing	

Chemical Laboratory Testing

Note:

Scheduled slit trenches at three locations were cancelled during the investigation period.

This report includes all factual data from completed field and laboratory operations and discusses these findings relative to the proposed new development.

II Fieldwork

This development is to take place on a greenfield site located off the Fairyhouse Road

just south of Rathoat Village in County Mean.

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory locations are noted on the OCSC drawing enclosed in Appendix VIII

The exploratory location is the properties of the occurrence of the oc

The various elements of the investigation are detailed in the following paragraphs. All field works were supervised by an experienced geotechnical engineer who carefully recorded stratification, took photographs as necessary, recovered samples and prepared detailed records.

Close liaison was maintained throughout with the Consulting Engineer. All appropriate documentation was submitted and approved prior to site commencement. Each location was scanned electronically (CAT) to ensure that existing services were not damaged. A shallow trial pit was also opened by hand at borehole locations to confirm this.

All HSE safety regulations pertaining to COVID 19 were followed for this project.

Boreholes

The exploratory holes (BH01 to BH04) were bored with conventional 200mm cabletool methods using a Dando Exploratory Rig.

Detailed geotechnical records are contained in Appendix I to this report - the records give details of stratification, sampling, in-situ testing and groundwater. Note is also taken of any obstructions to normal boring requiring the use of the heavy chisel for advancement.

The boreholes reflect a high degree of consistency. Topsoil overlies a stratum of firm to stiff brown gravelly CLAY which continued to approximately 2.00 metres. Stiff to very stiff grey black gravelly CLAY is then encountered and boreholes continued to completion in this stratum at depths ranging from 4.60 to 8.10 metres. Cobbles and occasional boulders were noted randomly during the course of boring. Boreholes were terminated when further advancement was precluded by such boulder presence.

The sub-soils comprise GLACIAL TILL or BOULDER CLAY deposition, typically brown boulder clay overlying black boulder clay or lodgement till. The stratification is quite typical of the general area.

No ground water was encountered during the course of the borehole investigation. A standpipe was installed in BH01 to facilitate long-term ground water observation. Ground water level readings are included with the boring records.

Rotary Core Drilling

Rotary core drilling was scheduled at one location to advance borehole depth and. establish rock horizon if practical. The hole was designated RB01.

A GEO 205 rig was used to drill a 100mm diameter hole to a depth of 16.50 metres.

A detailed drilling record is presented in Appendix II. The record confirms the presence of brown and black boulder clay extending to approximately 10.00 metres.

From 10.00 to 16.50 metres alternating layers of gravel and sand were noted with some adverse "blowing" noted in the fine sand layers.

It was not possible to recover core of the granular soils, sample identification was based on examination of fragmented drilling returns.

Standard Penetration Tests (SPT) were carried out at intervals during the course of rotary core drilling with results noted in the RH column of the detailed drilling log.

Trial Pits

Six Trial Pits were excavated using a JCB excavator under engineering supervision. Detailed trial pit logs with photographs are enclosed in Appendix III. Trial Pits are referenced TP01 to TP06. All locations have been surveyed to National Grid.

The records present a high degree of consistency, with surface topsoil initially noted. The topsoil is generally 200mm thick.

Below the topsoil a stratum of firm to stiff brown gravelly CLAY (Brown boulder clay) is encountered. This is consistent with the glacial till or boulder clay noted in the boreholes and continues to depths generally between 1.50 and 2.00 metres.

Very stiff to hard grey black lodgement till underlies the brown boulder clay and excavations were terminated in this stratum at depths between 1.90 and 3.00 metres. Difficulty in excavation in the black boulder clay was noted in each location.

Trial excavations were generally dry and stable throughout the investigation period.

A minor variation to the general pattern was noted in TP03 where the boulder clay becomes sandier and minor water seepage was noted at 2.20 metres.

Pits were backfilled with excavated material and compacted in layers. Disturbed areas were levelled and tidied on completion.

In Situ CBR by Plate Bearing Test

The CBR value of the soils at shallow depth was established at fifteen locations using Plate Bearing Test Apparatus. Tests were carried out at proposed roads or pavement areas. A steel plate is loaded and off-loaded incrementally over two stages and the deflection under load and recovery under off-load is measured by a system of dial gauges. The data is processed and load settlement graphs are prepared. An equivalent CBR value is calculated in accordance with NRA HD25-26/10. At each location testing was carried out at 0.50 metres BGL

Results are summarised in the following table and details are presented in Appendix IV with stratification noted on an appropriate Trial Pit record.

Test No.	CBR at Load Cycle (%)	CBR @ Re-Load (%)
PBT 01	5.8	6.7
PBT 02	15.2	46.3
PBT 03	7.2	27.9
PBT 04	11.0	13.4
PBT 05	11.8	32.5
PBT 06	12.8	36.3
PBT 07	5.0	36.3
PBT 08	4.9	10.2
PBT 09	4.9	9.8
PBT 10	3.4	5.2
PBT 11	3.2	6.1
PBT 12	3.0	4.4
PBT 13	3.6	5.8
PBT 14	5.4	6.9
PBT 15	21.5	45.1

Infiltration Tests

Infiltration testing was performed in accordance with BRE Digest 365 'Soakaway Design' at four locations. Details are presented in Appendix V. The Test Pits were opened to approximately 2.00 metres deep and detailed logs were prepared. The stratification comprised topsoil overlying stiff brown-grey gravelly CLAY.

To obtain a measure of the infiltration rate of the sub-soils, water is poured into the test pit, and records taken of the fall in water level against time. The test is normally carried out over two cycles following initial soakage. The infiltration rate is the volume of water dispersed per unit-exposed area per unit of time, and is generally expressed as metres/minute or metres/second. In these calculations the exposed area is the sum of the base area and the average internal area of the pit sides over the test duration.

No fall in water level was recorded in the first test cycle over the sixty-mute test period, confirming the impermeable nature of the boulder clay deposits.

An Infiltration Rate (f) of 0.00 metres/minute has been recorded at each location confirming test failure

Heavy Duty Dynamic Probes

Heavy Duty Dynamic Probes were taken at two specified locations. Probing was in accordance with the heavy-duty probe specification of BS 1377: Part 9: 1990. In these tests, the soil resistance is measured in terms of the number of drop-hammer blows required to drive the test probe through each 100 mm increment of penetration. Probing is terminated when the blow count exceeds 25/100mm to avoid damage to the apparatus. Where loose material is present a single blow count may drive the apparatus in excess of 100mm. In this instance blow counts of zero may be recorded. Individual probe records are contained in Appendix VI and are summarised as follows.

Probe No.	SOFT ZONE N ₁₀₀ < 2	STIFF N ₁₀₀ > 6	REFUSAL
DP01	0.00 - 0.40	0.60	2.00
DP02	0.00 - 0.50	0.50	2.20

III. Testing

(a) In Situ Standard penetration Tests

Standard penetration tests were carried out at approximate 1.00 metre intervals in the geotechnical boreholes and corehole to measure relative in-situ soil strength. N values are noted in the right hand column of the individual records, representing the blow count required to drive the standard sampler 300mm into the soil, following initial seating blows. Where full test penetration was not achieved the blow count for a specific penetration is recorded, or refusal is indicated where appropriate. The results of the tests are summarised as follows:

STRATUM	N VALUE RANGE	AVERAGE	COMMENT
Brown Gravelly C	LAY		· ~
1.0 m BGL	14 to 19	17	Firm to Stiff
2.0 m BGL	22 to 28	25	Stiff
Black Gravelly Cl	LAY		·
3.0 m BGL	24 to 34	29	Stiff to Very Stiff
4.0 m BGL	31 to 38	35	Very Stiff
5.0 to 8.0 m BGI	33 to 50	40	Very Stiff to Hard
Rotary Hole			
8.0 to 16.00 metre	es > 50	50	Hard

P.

A number of limited penetration SPT tests were recorded on boulders or cobbles within the boulder clay stratum. These high results are not included in the above table or used in assessing average values.

All SPT tests in the rotary holes recorded refusal after limited penetration and are noted as N > 50.

(b) Laboratory Tests

A programme of laboratory testing was scheduled following completion of site operations. Geotechnical testing was carried out by IGSL in it's INAB-Accredited laboratory. Chemical testing was carried out in the UK by EUROFINS. The test programme included the following elements:

•	Liquid and Plastic Limits / Moisture Content	IGSL
•	PSD Grading by wet sieve and hydrometer.	IGSL
•	Sulphate / Chloride / pH	EUROFINS

All laboratory data is presented in Appendix VII and individual tests are briefly discussed as follows.

Liquid and Plastic Limits

PECENED. Soil samples from the site had Atterberg Limits determined in accordance with Double The results reflect a high degree of uniformity in the gravelly clay stratum. The soils are results into the CL category of the standard Casagrande classification, where the control of the control of the standard Casagrande classification, and the control of the con

The Natural Moisture Content ranges from 9 to 17%.

PSD Grading

The particle size distribution curves for three samples were determined by wet sieve and hydrometer analysis. The resulting graphs are uniformly and typically straight-line in nature, with smooth particle size distribution from the fine clay to coarse gravel fraction.

Both Atterberg Limits and PSD Grading results are typical of the local glacial till deposition.

Chemical

Two samples have been analysed to determine sulphate, chloride and pH values. Sulphate concentrations (SO4 2:1 extract) of < 0.010 g/l were established with pH values of 8.0 and 7.5. Water Soluble Chloride contents of < 0.010 g/l were also confirmed.

A sulphate design class of DS-1 (ACEC Classification for Concrete) is indicated for sulphate concentrations lower than 0.5 g/l. No special precautions are therefore deemed necessary for protection of below ground concrete.

IV. Discussion:

The new housing development is to be located on the site as shown on the attached plan. The area is greenfield, in former agricultural use.

A detailed investigation has been carried out under the direction of O'Connor Sutton Cronin. Consulting Engineers. The factual data from field and laboratory is presented in Sections 1 to 111 of this report.

SUMMARY STRATIFICATION

A high degree of consistency has been confirmed in the borehole and trial pit locations.

Superficial topsoil is present to an average depth of 0.20 metres.

Below the topsoil, GLACIAL TILL or BOULDER CLAY is encountered. This stratum is initially firm to stiff brown sandy gravelly CLAY, extending to about 2.00 metres and overlying stiff to very stiff black gravelly CLAY.

The black boulder clay continues to an approximate depth of 10.00 metres. Rotary drilling has confirmed more granular soils (SAND and GRAVEL) from 10.00 to the final investigation depth of 16.50 metres. Bedrock has not been identified.

No ground water was noted during the course of the borehole investigation and only a minor seepage was noted in an isolated sandy zone in Trial Pit TP03.

A standpipe installed at BH01 recorded water level at 8.20 metres BGL 0n 24/06/2020. A reading taken three weeks later (14/07/2020) recorded ground water standing at 1.74 metres BGL.

ALLOWABLE BEARING PRESSURES

The strength of the soils has been established by In-Situ Standard Penetration Tests in the boreholes and rotary hole. Dynamic Probe resistance is used to assess allowable bearing. Visual assessment of the ground during trial pit operations by experienced IGSL personnel has also been considered in establishing allowable bearing pressures. Geotechnical testing confirms the glacial till characteristics and the high degree of uniformity in the sub soil. The characteristics of the boulder clay in the general area are well documented and the findings on this site are typical of the regional pattern.

Standard Penetration Tests in the boulder clay at respective depths of 1.00, 2.00 and 3.00 metres, with suggested allowable bearing pressures, are indicated as follows:

Depth	N Value Range	Average N Value	ABP (F	Kn/Sq.m.)
•	J	J	Using Lowest N	Using Average N
1.00	14 – 19	17	150	175
2.00	22 - 28	25	200	275
3.00	24 to 34	29	250	300

RECOMMENDED FOUNDATIONS

For conventional two-storey construction an allowable bearing pressure of 150 KPa is generally appropriate.

We would recommend adopting this allowable bearing pressure for conventional reinforced strip or pad foundations placed nominally at a depth of 1.00 metre. Utilising the lower SPT range would permit this allowable bearing pressure.

Maximum settlement of the order of 10mm can be expected in the glacial soils under this load intensity. Differential movement will be negligible.

We strongly recommend visual inspection of foundation excavations by experienced personnel to ensure uniformity and suitability of the founding medium. Any soft or suspect material should be removed and where necessary replaced with low-grade concrete. The soils encountered will be sensitive to moisture content variation and excavations should be protected by blinding or foundation concrete placed rapidly following excavation.

Should higher loading intensities be envisaged or if basement structures are proposed, foundation depth can be increased to avail of higher SPT values and increased allowable bearing pressure.

Excavation / Ground Water

No difficulties are envisaged in excavation in the boulder clay deposits. The lower black lodgement till is quite hard with some boulder presence, however experienced local contractors will have extensive experience in dealing with this stratum. No significant ground-water ingress was recorded some minor water seepages may occur.

Some care should be taken in deep service excavation. Statutory safety regulations prohibit personnel entering unsupported excavations greater than 1.20 metres deep, irrespective of apparent stability.

A final standing water table approximately 1.70 metres BGL has been indicated by standpipe observation. This will not be relevant in short term foundation excavation, but can be used in assessing possible uplift if basement structures are proposed.

Proposed Roads / Paved Areas

). ?0/06/2025 CBR values have been established by Plate Bearing Tests. An average CBR of 4 to 5% can be adopted for design purposes using the results at initial load cycle. Visual inspection of excavated formation is again advised to ensure that all organic or unsuitable fill material is removed.

Infiltration

Very low infiltration rates have been established by BRE Digest 365 test. The values are typical of cohesive glacial till or boulder clay material. The results indicate that the soils are unsuitable for dispersion of storm or surface water in conventional soakaways.

Disposal of storm / surface water to a suitable local watercourse or the use of the local authority storm water system should be considered.

Foundation Concrete

Low sulphate and chloride levels and near neutral pH values confirm that normal foundation concrete will be free from aggressive chemical attack.

IGSL/JC September 2020

PRICEINED: 20/00/2025

Appendix I Boring Records

GEOTECHNICAL BORING RECORD

REPORT NUMBER

1	<u> </u>	<u>, </u>														22578	
CON	ITRA	CT R	atoath , C	o.Meath								•	BOREH). D.	BH01	
CO-	ORDI	NATES	70	2,256.00 E	RIC	3 TYPE	***************************************			D/	ANDO 2	ነበሰብ ት	SHEET	and house in the		Sheet 1 of 1	
			75	0,600.00 N	ВС	REHOL			mm)	20	00		DATE C				
		LEVEL (m AOD)	90.85	BC	REHOL	E DEPT	H (m)		8.2	20		DATE C	OMPC	5	24/06/2020	
	ENT			struction	1	T HAMN						- 1	BORED		. •	W.BUTLER	
ENG	NEE	R 00	CSC		EN	ERGY F	POTAS	%)	1	т			PROCE	SSED	3Y	G.E.	1
=								_	. =	:			ples			6,3	ဖြ
Deptn (m)				Description			힏	atio	1 2		þer	岩。	£	Ver		Field Test Results	Standpipe Details
e e							Legend	Elevation	Denth (m)	₹	Ref. Number	Sample Type	Depth (m)	Recovery		Results	₹
0	TOD	SOIL			····			1	1					<u>r</u>	-		W T
1			rown/are	y sandy SILT/0	CLAY with		<u> </u>	30.05	1	<u></u>							
	occa	isional gr	avel	,		-		1									
						- 	<u></u>					_				N = 19	
1						- -					AA135069	В	1.00			(1, 3, 4, 5, 4, 6)	ľ
						[3	₹===										
							<u> </u>								1		し目
						F	©			/	AA135070	В	2.00			N = 22 (2, 3, 3, 3, 9, 7)	
						<u> -</u>		88.35	2.5	50						(=, =, =, =, =, ; /	ľ
				andy gravelly	CLAY with	₹			1								
	occa	isional co	obbles			Ē)				AA135071	8	3.00			N = 34	, E
						F	3			ľ	-W199013		3,00			(5, 4, 6, 6, 10, 12)	
						چا ح	<u></u> _										『目
							<u> </u>										┝▤
L							- 80	86.65	4.2	20	AA135072	B	4.00			N = 33 (9, 7, 10, 9, 7, 7)	₿目
ſ	Very	stiff to he	ard black	sandy graveli	y CLAY with	Š	92										目
	some	e copples	5			Ē		1									ľ⊟
						7	3				AA135073	В	5.00			N = 45	
						7		:		ľ		ь	3.00			(8, 6, 9, 10, 12, 14)	し目
						\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<u> </u>	9									ľĒ
						<u></u>											PE
						- -		1		/	AA135074	В	6.00			N ≈ 50/225 mm (9, 13, 22, 19, 9)	┝鬨
						Ę											l₀ 🗏
						7	<u> </u>	1									
						E)	1			AA135075	В	7.00			N = 50/150 mm	♪目
						₹		1								(6, 15, 23, 27)	ŀ
						Ę		1									
						17	- 0 -	00		,						N = 5565	
·	End	of Boreh	ole at 8 3	20 m		 	-	82.75	8.1	10	AA135076	В	8,00	ŀ		N = 50/75 mm (25, 50)	0
	LIIU	OI POIGH	OIG 41 0.2	.0 111									-				
						-					:						
						Vuona na n											
						The second secon					:						
															-		
\perp							·		<u></u>								<u> </u>
				HISELLING			Wate	- 1 C	acina	100	naled f	Ris	<u> </u>	ime \		ER STRIKE DET	TAILS
_	1 (m)	To (m)	Time (h)	Comments			Strik		asing epth		ealed At	Kis To		ıme min)	Con	nments	
6. 7.		6.9 7.6	1 0.5												No	water strike	
Έ		8.1	1.5														
										<u> </u>	į.						
							1 -		Hole	1	Casing	De	nth to			NDWATER PRO	GRES
		ATION DI		- 1555			Dat	te	Depti		Depth	1 78	pth to ater	Comm	ents		
	Date 06-20			Top RZ Base 00 8.10	Type 50mm SF		-										
ΞN	IARK	S Covid	19 Safe	Working Area	erected . CA	scanne	ed locat	ion	Sa	mple	Legen	d		i i T	. Unrlies	turbed 100mm Diameter	
		and na	and aug :	nspection pit	Jamed out .				L8 -	Bulk Dist Large E	turbed Bulk Disturbe	ď		Sar P⊸	mple Undistu:	rbed Piston Sample	
				~~~~~		····			Env	- Enviro	nmental San	nple (Jar	+ Vial + Tub)	w.	Water:	Sample	

1931

#### **GEOTECHNICAL BORING RECORD**

REPORT NUMBER

22578

<u>ل</u>	551														
COI	NTRAC	T Rate	ath , Co.N	leath (							1	BOREH SHEET		D. <b>BH02</b> Sheet 1 of 1	
	ORDIN DUND L	ATES EVEL (m	750,4	88.00 E 13.00 N 91.98		PE IOLE DIAM IOLE DEPT		(mm)	2	ANDO 2 00 .90	000		OMMEN	NCED 23/06/2020	
	ENT SINEER		tal Constr	uction	!	MMER RE Y RATIO (						BORED PROCE		W.BUTLER	
_						***************************************			~		San	nples			ø.
Depth (m)			Des	cription		Legend		Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Rесоvеry	Field Test Results	Standpipe Details
0	TOPS	OIL	***************************************			37.37	91.73	3 0	).25						
1		ght brown ional grav		dy SILT/CLA	Y with					AA135063	В	1.00	The contract of the contract o	N = 14 (2, 2, 3, 4, 3, 4)	
2	Stiff to CLAY	very stiff with occa	grey and sional col	grey/black s obles	andy gravelly		90.08	3 1	1.90	AA135064	В	2.00		N = 28 (2, 3, 7, 6, 7, 8)	
3						3 0 0 0	11101110			AA135065	В	3.00	* 1000 TO THE TOTAL THE TOTAL TO THE TOTAL TOTAL TO THE T	N = 28 (5, 4, 4, 5, 9, 10)	
4							9 - - - - - - - 87.18	8 4	4.80	AA135066	В	4.00		N = 31 (20, 6, 7, 7, 8, 9)	
5		tiff to har cobbles	d black ve	ry gravelly s	andy CLAY with	000	8			AA135067	В	5.00	THE RESERVE THE SECOND	N = 54 (7, 7, 10, 11, 14, 19)	
6						0 0 0	85.0	8 6	5.90	AA135068	В	5.00		N = 61 (9, 8, 12, 14, 16, 19)	
7	Obstru End o		e at 6.90 r	n							The state of the s	***************************************		N = 50/75 mm (8, 17, 50)	
8												Andrews and the second			
ши	יבא חם	PATA PO	RING/CHI	SELLING		1	<u> </u>			1	<u> </u>			WATER STRIKE DETA	ΔIIS
		To (m)	Time	Comments		Wat	er C	Casin		Sealed	Ris		Time	Comments	
ε	6 5.4 5.7	6.2 6.6 6.9	(h) 1 0.5 1.5	•		Stril	ve	Depti	11	At	To		min)	No water strike	
											······································		G	ROUNDWATER PRO	GRES
	TALLA Date	TION DET		RZ Base	Туре	Da	ate	Ho De		Casing Depth	De V	epth to Vater	Comm	ents	
RE	MARKS	Covid 1	9 Safe Wo		erected . CAT sc arried out .	anned loca	ition	- 11	B - Bulk C	le Legen Disturbed (tub Disturbed e Bulk Disturbe			San	- Undisturbed 100mm Diameter riple Undisturbed Piston Sample	
								li	Env - Env	e Buik Disturbe vironmental Sa	mple (Jai	r + Vial + Tub		Water Sample	

135L

#### **GEOTECHNICAL BORING RECORD**

REPORT NUMBER

22578

. []		1																
COI	NTRAC	T R	atoath , C	o.Me	ath									BORE				
		IATES LEVEL (		1,691. 0,277.		l		E OLE DIAM OLE DEPT		(mm)	) 2	ANDO 2 00 .90	000	DATE (	OMME	NCED 22/0	et 1 of 1 06/2020 06/2020	
	ENT SINEER		votal Cor C <b>S</b> C	struc	tion	;		MER RE				1		BORED PROCE			BUTLER	·
ᇹ										_	Ē		San	nples		_ \	5/3	o o
Depth (m)			Г	Descri	ption			Legend	1	Elevation	Depth (m)	Ref. Number	Sample Type	Depth	Recovery	Field Resu		Standpipe
0	TOPS					(2)		<u> </u>	93.45	50	0.20_							
	cobbi	ight brov es	wn sandy	SILT	/CLAY w	ith occasio	onal	<u>**</u> * *				AA135065	В	1.00		N	= 16	W
1	Firm	grey san	dy SILT/	CLAY	,				92.45	5	1.20	AA 135055	В	1.00			, 4, 3, 4)	
2	Stiff g	rey and	grey/blad al cobble	ck sar	idy grave	elly silty CL	AY		91.65	5 2	2.00	AA135056	8	2.00	The state of the s		= 27 , 9, 6, 6}	
3							;					AA135057	8	3.00			= 24 , 4, 9, 7)	
4	Very some	stiff to hi cobbles	ard black	sand	y gravelly	/ CLAY wit	h		89.85	5 3	3.80	AA135058	8	4.00		N = (12, 6, 7	= 35 , 9, 8, 11)	
5												AA135059	8	5.00			= 33 8, 9, 10)	
3												AA135060	В	6.00			= 64 21, 15, 14)	
												AA135061	В	7.00			150 mm 25, 25)	
3		uction of Boreho	ole at 7.9	0 m	***************************************			1	85.75	5	7.90	AA135062	8	7.90			175 mm , 50)	WWW
9												- No. of the control						
ΗA	RD ST	RATA B	ORING/C	HISEI	LING				<u> </u>	_1_		1	L,,	.1	<u></u>	NATER STR	RIKE DET	AILS
		To (m)	Time (h)	Con	nments			Wate Strik		asin Depti		ealed At	Ris To		Time (min)	Comments		
6 7	.3 .7	6.5 7.9	0.75 2						Princessanasanusanisprinces					ALEXANDER PROPERTY OF THE PROP		No water	strike	
															G	ROUNDWA	TER PRO	GRE
	TALLA Date	TION DE	TAILS	on IF	Z Basel	Тур	e	Dat	le	Ho Dej		Casing Depth	De V	epth to Vater	Comm	ents		
<u>`</u>		1.00	1 32	J 1		1 3 12	<del>-</del>											
ŒN	MARKS	Covid and ha	19 Safe tand dug i	Worki nspec	ng Area tion pit c	erected . C arried out	AT scan	ned locat	ion	] 6	3 - Bulk Di				Sar	- Undisturbed 100m nple Undisturbed Piston		
										المالية	Env - Envi	Bulk Disturber connental San	ple (Jar	+ Vial + Tub		Water Sample		

## 1531

IGSL, GDT

#### **GEOTECHNICAL BORING RECORD**

REPORT NUMBER

22578 BOREHOLE NO. CONTRACT Ratoath, Co.Meath **BH04** SHEET Sheet 1 of 1 CO-ORDINATES **RIG TYPE** 701,754.00 E **DANDO 2000** DATE COMMENCED 25/06/2020 BOREHOLE DIAMETER (mm) 749,952.00 N 200 DATE COMPLETED GROUND LEVEL (m AOD) 26/06/2020 92.58 BOREHOLE DEPTH (m) 5.10 CLIENT Pivotal Construction SPT HAMMER REF. NO. BORED BY W.BUTLER **ENGINEER** ocsc **ENERGY RATIO (%) PROCESSED BY** JE. Samples Standpipe Details E Ê Elevation Ref. Number Sample Type Recovery Field Test Depth ( Legend Description Depth ( Depth (E) Results -0 12 AU 92.43 TOPSOIL 0.15 荖 Firm light brown sandy SILT/CLAY with occasional ___X _____ AA135077 В 1.00 N = 15 ō (2, 2, 3, 2, 4, 6) 1 90.78 1.80 Stiff grey and grey/black sandy gravelly SILT/CLAY X AA135078 Β 2.00 (4, 3, 5, 5, 6, 8) ۵ ______ 89.68 ō 2.90 Very stiff to hard black very gravelly sandy CLAY with <u>(9</u> N = 35 (3, 9, 10, 9, 6, 10) AA135079 В 3.00 <u>.</u> some cobbles AA135080 N = 39 В 4.00 (6, 7, 8, 8, 12, 11) 87.98 4.60 Obstruction N = 50/150 mm (6, 17, 23, 27) End of Borehole at 5.10 m -6 8 HARD STRATA BORING/CHISELLING WATER STRIKE DETAILS Time Water Casing Sealed Rise Time From (m) To (m) Comments Comments (h) Strike Depth (min) 4.3 0.75 No water strike 4.5 0.5 4.9 5.1 1.5 **GROUNDWATER PROGRESS** Hole Casing Depth to Water INSTALLATION DETAILS Date Comments Depth Depth Date | Tip Depth RZ Top RZ Base Type 26-06-20 Start of 2nd day REMARKS Covid 19 Safe Working Area erected . CAT scanned location Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed UT - Undisturbed 100mm Diameter and hand dug inspection pit carried out. Sample P - Undisturbed Piston Sample W - Water Sample Env - Environmental Sample (Jar + Vial + Tub)

RECEINED: 20/06/2025

		In Situ Gı	In Situ Groundwater Monitoring	nitoring			
Site Location	Site Location Ratoath, Co. Meath						
Project No. 22578	. 22578					/IGST/	***************************************
Client	Client Pivotal Construction	Ų.				Ltd.	
Engineer	2820						
			Date of Monitoring				
Exploratory Hole No. Ground Leval (m. 00)	George Level (m.OD)	Standpine	End of Boring (m bal)	14/07/2020 (m bd)	(MAC)	(dow)   (pq w)	
BH01	90.85		8.2	1.74			
				:			
						The state of the s	

PRICEINED: 20/06/2025

Appendix II Rotary Core Logs



#### **GEOTECHNICAL CORE LOG RECORD**

REPORT NUMBER

22578

	NTR/	pet to	· F	atoa	th Develo	pment				<del></del>				CHOLE	E NO	RB		
ÇO	-ORI	ANK	TES								***************************************			E COM	MENCE		et 1 of	
GR	OUN	ID LI	EVEL	(mO	D)				RIG TYPE FLUSH		Geo20 Air/Mis			E COM				
	ENT				al Constru	iction			INCLINATI		-90	-	3	LLED B		- CIG		
	GINE	ER	T	CSC	; T				CORE DIA	METER (mi	m) 78		LOC	GED B	Y	Ų,	O'She	a
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa Lo (m	m)	Non-intact Zone	Legend			Descript	ion			Depth (m)	Elevation	Standpipe Details	SPT (N Value)
Ö									SYMMET as returns	RIX DRILLI of grey/da	NG: No rec	overy, obs	erved by	driller AY				
1	1.50	0	0	0						, o, <b>g</b> , <b>o</b> , ta		,, ca, g	,	:				
2		0	0	0					CVMMET	RIX DRILLI	NG: No roo	ovon/ obo	ongod by	drillor	2.20			
3	3.00								as returns occasiona	of grey/bla	ick sandy g	ravelly CL	AY with	urmer				
4		0	0	0				0 0 0										
	4.50		<u> </u>					<u>O</u> 9										
			-					0 0										
5		0	0	0		1		<u>a</u>										
									-									
6	6.00		<b> </b>		1													
			***************************************					9										
		0	0	0														
7	7.50							<u></u>	SYMMET	RIX DRILLI	NG: No rec	overy, obs	erved by	driller	7.20			N = 88
	7.50				1				as returns	of grey/bro	own sandy (	ravelly Cl	.AY					(3, 5, 12, 17 28, 31)
9		0	0	0														
		"						=										
	9.00		<u> </u>		_													N = 150 (5, 14, 23, 36
9																		40, 49)
		0	0	0				<u>.</u>								<u> </u>		
3EI	MAR	KS	.l	<u> </u>	1			<u></u> Q	L					····	WAT	TER S	RIKE	DETAILS
Hol	e ca	sed	0.00-	16.50	om. Erect	Covid-19	Saf	e Zon	e - 1hr	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)		mmen	ts	
										6.50 10.20		N/S N/S		,,		Slow Slow		
															GRO	DUND	NATE	R DETAILS
NS	TAL	LAT	ION D	ETA	ILS					Date	Hole Depth	Casing Depth	Depth Water	to Cor	mment	S		-,
	Date		Tip D	epth	RZ Top	RZ Base	)	Typ	)e									
						į				L	1							



#### **GEOTECHNICAL CORE LOG RECORD**

REPORT NUMBER

22578

ONTE	RAC	Γ	Rato	ath	Develo	pment							DRI SHE	CHOLE	NO	RB(	<b>01</b> et 2 of	2
O-OR ROUI	ND L	EVEL	. (mC		Constru	ection			RIG TYPE FLUSH INCLINATI		Geo20 Air/Mi: -90		DAT	E COMI	LETE	<b>D</b> 27/0 28/0	7/2020	)
NGIN	EER		ocso	<del></del>	<del></del>			<u></u>		METER (m	m) 78		LOG	GED B	<b>Y</b>	`G	O'She	a
Core Run Depth (m)	T.C.B.%	S.C.R.%	R.Q.D.%		Frac Spac Lo (m 250	cing og m)	Non-intact Zone	Legend			Descript	ion		;	Depth (π)	Elevation	Standpipe Details	SPT (N Valbe)
10.5							• • •	000	SYMMET	RIX DRILLI	ING: No rec	overy, obs	erved by	driller	10.20			N = 96
10.5	0	0	0					000	as returns SYMMET as returns	s of grey/bro RIX DRILLI s of grey/bro tes blowing	own sandy ( ING: No rec own/black c	GRAVEL	erved by	driller	11.10			(3, 7, 14, 2 27, 35)
12.0	d	_	ļ					<del></del>			-				40.00			N ≈ 115/1 mm
	0	0	0					00000		RIX DRILLI s of grey/bla				driller	12.20			(8, 19, 24, 4 50)
13.5	0							000 000										N = 91/90 r (5, 20, 41, 1
4	0	0	0					8000										
15.00 5	0	0	0			T y y y y y y y y y y y y y y y y y y y		800000000										N = 50/10 r (38, 50)
16.50	0			-				80	End	of Borehole	e at 16.50 m	l			16.50			N = 50/15 (45, 50)
8		MATERIAL PROPERTY.															-	
9	THE					nary species as demonstration.												
EMAF	KS			<u></u>						T					WA"	FP CT	BIKE	DETAILS
ole cased 0.00-16.50m. Erect Covid-19 Safe Zone				e - 1hr	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Co	mmen							
						6.50 10.20		N/S N/S		oon oo dhaaraa		Slow Slow						
				<del></del>							ا المام	I Casine			GRO	DUNDV	VATE	R DETAIL
Date						RZ Base		Туг	ie	Date 28-07-20	Hole Depth 16.50	Casing Depth 16.50	Depth t Water 4.40				mins aft	er end of

PRICEINED: 20/06/2025

Appendix III Trial Pit Logs



REPORT NUMBER

CONTRACT Ratoath Development  LOGGED BY D.Nolan  CLIENT Pivotal Construction ENGINEER OCSC  CO-ORDINATES  GROUND LEVEL (m)	701,80 750,62 91.76	01.00 E 23.88 N		1 2			1	
LOGGED BY D.Nolan  GROUND LEVEL (m)  CLIENT Pivotal Construction	750,62	01.00 E 23.88 N		-, : I	<b>)</b> .	Sheet	1 of 1	
				DATE CO	133205 B 0.50-0.60 133206 B 1.00-1.20			
					Samples	les		meter
Geotechnical Description	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KR	Hand Penetrometer
TOPSOIL.    St. 3/2	0.25	91.51		And the second s				
Stiff brown moist sandy gravelly CLAY with medium cobble content and low boulder content. Boulders < 300mm.	0.75	91.01				and the second of the second o		
1.0  Stiff dark grey/black moist slightly sandy gravelly CLAY	1.80	89.96		133206	В	1.00-1.20		
with medium cobble content and low boulder content. Boulders < 420mm.				133207	В	1.90-2.10		
End of Trial Pit at 2.30m	2.30	89.46						
3.0				Podelite Pode				
Groundwater Conditions No seepage		•						
Stability Good								
General Remarks CAT [Cable Avoidance Tool] used to scan area prior to breaking ground. F	Pit very I	nard to dig	g @ 2.3	ភា.				



#### TRIAL PIT RECORD

REPORT NUMBER

22578

			CO-ORDINAT	ES	702 44	57.13 E		SHEET	<del></del>		t 1 of 1	
.OG	GED BY	D.Nolan			750,61	18.77 N		DATE ST			/2020 /2020	
CLIE	NT NEER	Pivotal Construction OCSC	GROUND LE	VEL (m)	90.92			EXCAVA METHOD	TION )	JCB		
		The second secon							Samples	0		neter
		Geotechnical Descri	ption	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer
0.0	TOPSO	IL.		22.22								
	Stiff gre	y/brown slightly moist slightly vith low cobble content.	sandy very gravelly	0	0.30	90.62		133218	В	0.50-0.60		
.0				0				133219	В	0.90-1.00	! 	
	Stiff bro low cob	wn mottled grey moist sandy ble content.	gravelly CLAY with	0	1.40	89.52		133220	В	1.50-1.60		
.0	Firm to: CLAY w Boulder	stiff dark grey/black very mois vith low cobble content and lo s < 250mm.	st sandy gravelly w boulder content.	0	1.90	89.02		133221	В	2.00-2.10		Language Control of the Control of t
	End of 1	Trial Pit at 2.30m	44444	<u> </u>	2.30	88.62						
3,0					A TANAN AND AND AND AND AND AND AND AND AND		1. ALLEGA AND AND AND AND AND AND AND AND AND AN					
	indwater eepage	Conditions			1	1	<u> </u>			1		1
Stab												
Gen	eral Rema	arks voidance Tool] used to scan a		around [	Tit von 1	and to di	n @ 2 3	lm				

									R	EPORT NU	JMBER	
ا عال	154	Т	RIAL PIT I	RECO	RD					225	578	
CON.	TRACT	Ratoath Development						TRIAL PI	T NO.	TP0:		
LOGG	GED BY	JL.	CO-ORDINAT	ES		9.98 E 8.87 N		DATE S		23/06	t 1 of 1 5/2020 5/2020	**************************************
CLIE		Pivotal Construction OCSC	GROUND LEV	/EL (m)	91.59			EXCAVA METHOL	TION		acked	
			<u> </u>		***************************************				Samples			eter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KRa	Hand Penetrometer (KPa)
0.0	TOPSOIL	.: Soft light brown sandy CLAY with	rootlets	28 36			>	O.E.	<del></del>			
	slightly gr content. S subangul Cobbles	firm to stiff yellow brown mottled lig ravelly slightly sandy silty CLAY with Sand is fine to medium. Gravel is all ar fine to coarse of mudstone and l are angular of limestone. iff grey brown and grey slightly san		0.15 0.55	91.44 91.04		AA132188		0.40-0.50	>130		
1.0	clayey SI medium. coarse of	in grey brown and grey signty san LT with a low cobble content. Sand Gravel is subangular to subrounde Ilimestone. Cobbles are subangula ied of limestone.	is fine to d fine to				The state of the s	AA132189 AA132190		0.60-0.70 1.50-1.60		
2.0	cobble co	r slightly sandy gravelly CLAY with ontent. Sand is fine to medium. Gra ar to subrounded fine to coarse of are subrounded of limestone. (Rec	vet is limestone.	× (	1.90	89.69	(Seepage)	AA132191	В	2.00-2.20		
l l l l l l l l l l l l l l l l l l l		grey very slightly sandy gravelly Cl cobble content	LAY with a		2.40	89.19		AA132192	В	2.60-2.80	>130	
3.0	End of T	rial Pit at 3.00m			3.00	88.59			Account of the second of the s		Management of the state of the	The state of the s
Grou	indwater C page at 2.2		an talk a consistent when the con-			1	<u> </u>		<b>3.</b>	· · · · · · · · · · · · · · · · · · ·		
Stab Good												
	eral Remar [Cable Av	ks oidance Tool] used to scan area pr	ior to breaking (	ground. F	Pit termi	nated at r	equired	depth.				AAA .

			,					F	REPORT NU	MBER	
15	T Les	RIAL PIT I	RECO	RD					225	78	
CON	TRACT Ratoath Development						TRIAL PI	T NO.	TP04		
LOG	GED BY D.Nolan	CO-ORDINATI	ES	701,69 750,46	91.00 E 54.00 N		DATE ST	. / _	25/06		
CLIE	INT Pivotal Construction	GROUND LEV	/EL (m)	91.83			EXCAVA METHOD	TION	JCB		
		,						Samples	0		neter
	Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KRe)	Hand Penetrometer (KPa)
0.0	TOPSOIL.		7 77 7 37 37								
ranson from the same of the sa	Firm grey/brown moist sandy gravelly CLAY	,	0	0.25	91.58		133201	В	0.50-0.60		
1.0	Firm brown moist slightly slightly sandy grav with medium cobble content and low boulde Boulders < 300mm.	velly CLAY er content.		0.90	90.93		133202	В	0.80-1.00		
-	Firm to stiff dark grey moist slightly sandy go with medium cobble content and medium bo Boulders < 300mm.	ravelly CLAY oulder content.	0	1.60	90.23		133203	В	1.50-1.60		
2.0							133204	В	2.00-2.10		
	End of Trial Pit at 2.60m			2.60	89.23						
1				:			ALERA TOTAL				
3.0			44.00								
1021											
	undwater Conditions seepage										
Stab			***************************************								
Gen	eral Remarks [Cable Avoidance Tool] used to scan area pr	rior to breaking	ground. F	Pit very l	nard to di	g @ 2.6	Sm.		. ,		
GSL T											

10	الري		TRIAL PIT	RECO	RD					REPORT NU 225		
	TRACT	Ratoath Development						TRIALP		TP05	5 t 1 of 1	
DG(	GED BY	D.Nolan	CO-ORDINA  GROUND L		702,00 750,39 91.95	03.00 E 94.09 N		DATE S	OMPLE	ETED 29/06/2020		
LIEI NGI	NT NEER	Pivotal Construction OCSC	GROONDE		31.33	I ^m I		EXCAVA METHOL		JCB		
								Sample		s Q		rometer
		Geotechnicał Descript	íon	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer
0	TOPSC	DIL.		1 3 4 4 3 4 4 7								
	Firm to gravelly	stiff brown slightly moist very sl CLAY.	ightly sandy	6 76	0.25	91.70						
	Firm to	stiff dark grey/black moist sligh	lly silty sandy	<u> </u>	0.60	91.35		133214	В	0.50-0.60		
	gravelly	y CLAY with medium cobble cor	itent.	<u> </u>				133215	В	0.90-1.00		
	Stiff to	very stiff dark grey/black moist s y CLAY with high cobble conten	lightly sandy	P   1	1.10	90.85		133213	В	0.30-1.00		
	gravelly boulder	y CLAY with high cobble content r content. Boulders < 500mm.	and medium									
				8				133216	В	1.50-1.60		
	End of	Trial Pit at 1.90m		<u> </u>	1.90	90.05	•					
0	End of	ווומו דוג מניו. שטווו										
						***************************************						
-												
ַ												
								***************************************				
	ndwater eepage	Conditions				<u> </u>		1				1
	lihr								**************************************			
000												
ene AT	ral Rem [Cable A	arks voidance Tool] used to scan an	ea prior to breakin	g ground. F	it very f	nard to dig	<b>@</b> 1.9	m.				

9				2500	<b>D</b> D			····	F	REPORT NL	MBER	
Js	 554		TRIAL PIT I	RECO	RĐ					225	578	
CON	TRACT	Ratoath Development						TRIAL PI		TP06	3 1 of 1	
LOG	GED BY	D.Nolan	CO-ORDINAT		701,69 750,30	96.01 E 96.00 N		DATE ST	ARTED	26/06	/2020 /2020	·····
CLIE ENGI	NT INEER	Pivotal Construction OCSC	GROUND LEV	/EL (m)	93.25			EXCAVA METHOD		JCB		
									Samples			neter
HANDON COMPANY		Geotechnical Description			Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KRa)	Hand Penetrometer (KPa)
0.0	TOPSO	IL.		7 7 7 7 3 7 7 7								
	Firm to sandy g medium	stiff brown mottled grey slightly moi travelly CLAY with medium cobble on boulder content. Boulders < 310m	st slightly content and m.	0 0	0.25	93.00		133208	В	0.50-0.60		
1,0								133209	В	1.00~1.10		The state of the s
- - - 2.0	Stiff to v sandy g medium	very stiff dark grey/black moist sligh travelly CLAY with medium cobble on boulder content. Boulders < 250m	tly silty slightly content and m.	× × × × × × × × × × × × × × × × × × ×	1.70	91.55		133210	В	1.90-2.10		
- -	End of	Trial Pit at 2.40m		XQ =	2.40	90.85						
3.0	A LANGE OF THE PARTY OF THE PAR			ANNA MATERIAL PROPERTY AND ANNA PROPERTY AND ANNA PROPERTY AND ANNA PROPERTY AND	AND							
-												
	undwater eepage	Conditions										
Stab Good								<del></del>				
Gene CAT	eral Rema [Cable A	arks voidance Tool] used to scan area p	rior to breaking	ground. F	Pit very I	nard to dig	g @ 2.	łm.				

TP01: 2.3m







TP02: 2.3m



PRICEINED: 20106/2025









TP04: 2.6m



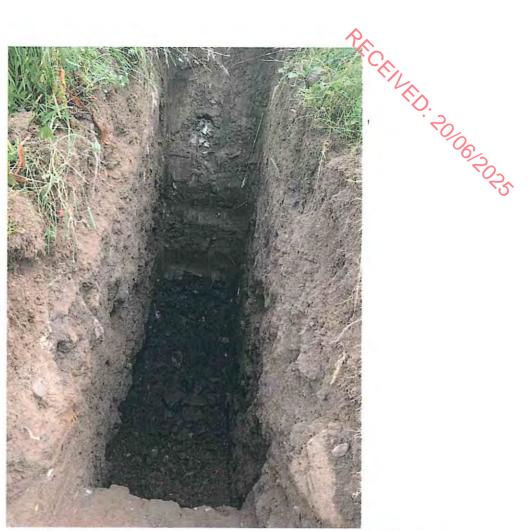


TP05: 1.9m





TP06: 2.4m





SA02: 2m





- 1

SA03: 2.1m





SA04: 2m





PRCHINED. 20/06/2025

**Appendix IV** Plate Bearing Tests

-		TRIAL PIT	RECO	RD				RE	EPORT NI 22	JMBER 578	
USSL CONTRACT	Ratoath Development			······································	<u></u>		TRIACP		CBR		<u></u>
LOGGED B	Y DN	CO-ORDINA			52.93 E 38.04 N		L	TARTED OMPLETE	29/06 D 29/06	t 1 of 1 5/2020 5/2020	<u>,,_,</u>
CLIENT	Pivotal Construction OCSC	GROUND L	EVEL (m)	92.68			EXCAVA METHOI	ATION D	JCB		
								Samples	~~~	2	meter
	Geotechnical Descripti	on	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer
.0 TOPS	SOIL.		7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7								
Firm grave	to stiff brown mottled grey very slig elly CLAY.	ghtly sandy	3.1/3.1/3 1/3.1/3 8 	0.25	92.43						
End	of Trial Pit at 0.50m			0.50	92.18		a water and a second a second and a second and a second and a second and a second a				
			Liver and American								
					**************************************						
.0											
The second secon											
ATTACAMENT TO THE TAXABLE PROPERTY.			MARKA SARVANIA PROPERTY AND					1975, van een en en		PPANIS	
roundwat	er Conditions		was the same of th					*****			
ìry						VALUE   VALUE					
itability Good											
General Re Plate beari	marks ng test carried out at 0.50m.					***************************************					



		1	RIAL PIT F	RECO	RD					225	578	
CON	TRACT	Ratoath Development						TRIAL PI		CBR Shee	<b>102</b> t 1 of 1	
	GED BY		CO-ORDINATI		702,15 750,62 90.87	7.58 E 8.17 N		DATE ST	ARTED MPLETE	30/06	5/2020 5/2020	
CLIE	INEER	Pivotal Construction OCSC		Y	1	I		METHOD	)	20		
									Samples		200	ometer
	The state of the s	Geotechnical Description		Legend	Depth ( <b>m</b> )	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KRa)	Hand Penetrometer (KPa)
0.0	TOPS				0.25	90.62						
A CONTRACTOR OF THE PROPERTY O	gravel	own mottled grey slightly moist very s ly CLAY.	slightly sandy		0.50	90.37		and the second s	The state of the s			
	End o	f Trial Pit at 0.50m		and the second s				Andrew Control of the			AND	
1.0				Market							A SA	
-						and the state of t	AND THE PARTY OF T	manyary.	- The state of the		Landing -	And the state of t
Gro Dry	oundwate	er Conditions						_1	J	<u> </u>	1	
Sta Go	bility od	444444444444444444444444444444444444444	144-14-14-14-14-14-14-14-14-14-14-14-14-			1111 H. W.		- Variable - Art and a second		•	AMMAN	
∛l Pla	neral Rei te bearir	marks ig test carried out at 0.50m.			<del></del>	•						
SL IF LOG												

15	الرث		TRIAL PIT	RECO	RD				R	EPORT N	UMBER 578	
CON	TRACT	Ratoath Development						TRACP		СВР		
LOG	GED BY	JL	CO-ORDINA	TES	702,19 750,53	91.95 E 39.30 N			TARTED	23/08	t 1 of 1 5/2020 5/2020	
CLIE ENGI	NT NEER	Pivotal Construction OCSC	GROUND LE	VEL (m)	91.15			EXCAVA METHO	ATION	7T T	racked vator	
									Samples			meter
		Geotechnical Descriptio	n	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPS0 frequer	OIL: Soft to firm light brown sandy nt rootlets	silty CLAY with	7 70 70 70 70 7 77 7			Walter Baseline Control					- Children - The Children - Child
	slightly Gravel	ccasionally firm to stiff yellow brow gravelly sandy silty CLAY. Sand i is angular to subangular fine to co ne and mudstone.	s fine to medium.	X - X	0.20	90.95				The second and the se		
-	End of	Trial Pit at 0.50m		<u>X</u>	0.50	90.65					To Called Married To Talled	
-					AND THE STREET, STREET			in-resident section of the section o		one management and	T. T. S. A. A. A. B.	
- _{1.0}						AA-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A		and the second				
•								Laboratory and the same of the			A CONTRACTOR OF THE CONTRACTOR	
<del>-</del>				ALMINISTRATION TAX TRANSPORT							Photograph seasons are a seasons as a season	
Grou Dry Stab Good					a de la composição de l	out to the state of the state o			de de descriptor en la constante de la constan			LL-OCK-PORTER THE
<b>Gro</b> u Dry	ındwater	Conditions			1	1	1	1		1	<u> </u>	<b></b>
Stab Good												
	eral Rem e bearing ied of en	arks test carried out at 0.50m. During try. In line with his instruction at th	test, landowner P le time, we vacate	eter Care	y expres	ssed surp carrying	rise at out the	seeing us i remaining	in his field works.	l as he ha	d not be	en

							***************************************	R	EPORT N	UMBER	
Taar Taar		TRIAL PIT F	RECO	RD					22	578	
CONTRAC	T Ratoath Development	······					TRIAL P		CBF		
.OGGED	BY DN	CO-ORDINATI	ES	702,10 750,29	09.99 E 98.81 N			TARTED OMPLET	01/07	et 1 of 1 7/2020 7/2020	***************************************
CLIENT	Pivotal Construction	GROUND LEV	/EL (m)	91.70			EXCAV/ METHO	ATION	JCB	772020	
NGINEER	R OCSC		T				1	Samples	<u>``</u> 0		'n
						o o		Samples	T	E E	stromet
	Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KFa)	Hand Penetrometer (KPa)
^{0.0} TOI	PSOIL.		7 7 7 7 2 7 7 7								
			76 70	- American	-						
			V 4 7 7	0.25	91.45						
Stif	f brown mottled grey moist gravelly CLA	Y.		0.23	51.45						
				- Annual							
Enc	of Trial Pit at 0.50m			0.50	91.20						
	TO THAT PR ALC.SUM										
1.0											
- Alexandria de Caractería de						A-C					!
							Aleksan and the same of the sa				
	ater Conditions										
<b>Groundw</b> Dry	ater Conditions										
Stability Good		,	***************************************						<del>1810/00/11 = 1  </del>		
General F Plate bea	Remarks ring test carried out at 0.50m.			·····							***

									RI	EPORT NU	JMBER	
15			TRIAL PIT	RECO	RD					225	578	
CON	TRACT	Ratoath Development						TRALP	IT NO.	CBR		
	- 1	and the second s	CO-ORDINA	TE6	702.16	03.85 E		SHEET			t 1 of 1	
LOG	GED BY	DN	CO-OIDINA	ILO	750,18	39.91 N			TARTED		7/2020 7/2020	
CLIE	NT	Pivotal Construction	GROUND LE	VEL (m)	91.77			EXCAVA		JCB		
ENGI	NEER	ocsc		T	ı			METHO		500		
				The state of the s					Samples	d		ometer
		Geotechnical Description	on	<b>Q</b>		tion	Water Strike	<u>e</u>		_	Vane Test (KRa	Hand Penetrometer (KPa)
				Legend	Depth (m)	Elevation	Water	Sample Ref	Туре	Depth	Vапе	Hand (KPa)
0.0	TOPSO	DIL.		34 34								
				76 70								
				1/2/1/2								
-				N NN N NA XX	0.25	91.52						
-	Stiff bro	own slightly moist very gravelly C content.	LAY with medium		0.20	31.32						
	T-10-10-10-10-10-10-10-10-10-10-10-10-10-											
-					1							
-					0.50	91.27						
	End of	Trial Pit at 0.50m							1			
-										·		
-												
1.0												
								-				
-												
-												
Gro	undwater	Conditions		1	_l	1		1	1		·	1
Groi Dry Stat Goo												
Stat Goo		L. SANSIER MAINTENANCE AND THE STATE OF THE	SWAPE CONTRACTOR	····	. ,							***************************************
	eral Rem	arke	MANAGE A						············		<del></del>	
Plate	e bearing	test carried out at 0.50m.										
3												

TopSoil.  Stability Good  TopSoil.										Ri	EPORT N	JMBER	****
CO-ORDINATES   Tot 543.89 E   Tot	15	151,		TRIAL PIT	RECO	RD					22	578	
CO-ORDINATES 70 463-9 B 749 569.10 N  COLENT Pivotal Construction COSC  GROUND LEVEL (m) 92.38  COLENT Pivotal Construction COSC  GROUND LEVEL (m) 92.38  COLENT Pivotal Construction COSC  Samples  Samples  Samples  Siff brown motified grey moist very slightly sandy gravelly CLAY.  COCO TOPSOIL	CON	TRACT	Ratoath Development						1 1 -				
Geolechnical Description  Geolechnical Description  TOPSOIL  Suffi brown motified grey moist very slightly sandy gravelly CLAY.  Groundwater Conditions Dry  Stability Good	LOG	GED BY	DN	CO-ORDINAT	ΓES	701,64 749,96	13.99 E 59.10 N		DATE S	TARTED	30/06	5/2020	
TOPSOIL.  Stiff brown mottled grey moist very slightly sandy gravelly CLAY.  End of Trial Pit at 0.50m  Groundwater Conditions Dry  Stability Good				GROUND LE	VEL (m)	92.38			EXCAV/ METHO	ATION D	JCB		<del></del>
TOPSOIL.  Stiff brown mottled grey moist very slightly sandy gravelly CLAY.  End of Trial Pit at 0.50m  Groundwater Conditions Dry  Stability Good										Samples		<b>2</b>	neter
TOPSOIL.  Stiff brown mottled grey moist very slightly sandy gravelly CLAY.  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Topsoil  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled grey moist very slightly sandy gravelly  Stiff brown mottled			Geotechnical Descriptio	n	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KP	Hand Penetrometer (KPa)
End of Trial Pit at 0.50m  To a substitute of the state o	0.0	TOPSO	DIL.		1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2								
End of Trial Pit at 0.50m  1.0  Groundwater Conditions Dry  Stability Good		Stiff bro	own mottled grey moist very slight	ly sandy gravelly	0 0	0.20	92.18						
Groundwater Conditions Dry  Stability Good		End of	Trial Pit at 0.50m		- 0	0.50	91.88						
Groundwater Conditions Dry  Stability Good					444, 1944								
Groundwater Conditions Dry  Stability Good					ELVEN A LINE T				a transfer and the second				
Stability Good	1.0									A CANADA A CANADA CANAD			
Dry Stability Good							To a contract of the contract					and the state of t	
Dry Stability Good								**************************************					
Stability Good	Dry		· Conditions						W				
15												_	
General Remarks Plate bearing test carried out at 0.50m. Test moved out of ditch.	Gene	eral Rem e bearing	arks test carried out at 0.50m. Test m	oved out of ditch.						<del></del>			



15		RIAL PIT RECO	RD				1	225	578	
CON	TRACT Ratoath Development					TRIAL P	IT NO.	CBR Sheet	<b>.07</b> t 1 of 1	
LOG	GED BY DN	CO-ORDINATES	749,93	06.51 E 35.72 N		DATE S	TARTED OMPLETE	30/06 D 30/06	/2020 /2020	
CLIE	NT Pivotal Construction INEER OCSC	GROUND LEVEL (m)	92.50			EXCAVA METHO!	ATION .	JCB		
		11.					Samples		200	meter
	Geotechnical Description	regend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (K	Hand Penetrometer (KPa)
0.0	TOPSOIL.  Stiff brown slightly mottled grey slightly moi sandy gravelly CLAY.	2 6 20 2 6 20 2 6 20 2 6 20		92.25					and the state of t	
	End of Trial Pit at 0.50m		0.50	92.00		and the second s				
1.0				And a state of the	Advisoration to the state of th					Di Alla La Anguera de Carta de
The state of the s			The state of the s	Annabary and the second	d debates for region of the debate debates deb		The state of the s		Torquitte.	And the second s
Dry	undwater Conditions				1		1	<u></u>	1	1
Stat Goo	bility od									
Gen	neral Remarks te bearing test carried out at 0.50m. Test mov	red 10m out of ditch.								



<u>ੇ</u>	- 3	•	RIAL PIT F	KECUI	ΚU					225	578	
CONT	RACT	Ratoath Development						TRALP		CBR Shee	108 t 1 of 1	
rogg	ED BY	DN	CO-ORDINATI		702,02 749,94	7.05 E 3.98 N		DATE ST		01/07	//2020 //2020	
CLIEN ENGIN		Pivotal Construction OCSC	GROUND LEV	'EL (m)	92.42			EXCAVA METHOD	TION ?	JCB		
				1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.					Samples	~	(1) (a)	meter
		Geotechnical Description		Legend	Depth (π)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSC		alle CLAV		0.30	92.12			To the state of th			
The state of the s		own slightly moist slightly sandy grave	elly CLAY.		0.50	91.92						
A CONTRACTOR OF THE CONTRACTOR								Autorities				
1.0				The state of the s	Assertada da da agrapaçõe de maria da agrapaçõe de			The state of the s			No. of the latest and	
The second secon					- Anna-Ante-Anna-Anna-Anna-Anna-Anna-Anna-Anna-Ann	estation dept.					T. A. BARRION D. A. P.	
Gro	ndustar	Conditions				S. L. Control of the						
Dry		Contaitions										
Stabi Good	lity											
Gene Plate	ral Rem bearing	arks test carried out at 0.50m.										



	1515	-	TRIAL PIT I	RECO	RD					225	578	
CON	TRACT	Ratoath Development		···				TRIAL PI		CBR Sheet	109 t 1 of 1	
LOG	GED BY	DN	CO-ORDINAT		702,05 749,62	8.07 E 7.97 N		DATE ST	ARTED OMPLETE	01/07 D 01/07	/2020 /2020	
CLIE ENGI	NT NEER	Pivotal Construction OCSC	GROUND LEV	/EL (m)	88.78			EXCAVA METHOD	TION ,	JCB		
					biological and a second				Samples			ometer
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KFa)	Hand Penetrometer (KPa)
0.0	Firm to s	IL. stiff grey/brown moist very slightly s	sandy gravelly		0.30	88.48			and the second			
- The second	End of 1	Trial Pit at 0.50m		. 8.	0.50	88.28		The state of the s				
1.0												
	To a second page of the second p						- Additional property and the second	DAY OF THE PARTY O				A CONSTRUCTORY CONTRACTORY CON
Groi Dry	undwater	Conditions		Tanana and and and and and and and and an								
Stat Goo	ility d											
Gen	eral Rema e bearing	arks test carried out at 0.50m.	4//4///									



	ا سرد اراتاتان	•	TRIAL PIT REC	COR	)					22	578	
CON	TRACT	Ratoath Development						TRIAL PI		CBF Shee	<b>₹10</b> t 1 of 1	
LOG	GED BY	DN	CO-ORDINATES	7.	49,96	0.16 E 2.44 N		DATE ST		30/08	6/2020 6/2020	
CLIE ENGI	NT NEER	Pivotal Construction OCSC	GROUND LEVEL (	(m) 9	3,46			EXCAVA METHOD	TION	JCB		
									Samples	~	2	meter
		Geotechnical Description	<b>I</b>		(E)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KRa)	Hand Penetrometer (KPa)
0.0	TOPSO	IL. stiff brown moist silty slightly grave	<u>ए ह</u> इ. इ.	<b>公立とい</b> 10 10 10 10 10 10 10 10 10 10	.20	93.26						
A CONTRACTOR OF THE PARTY OF TH	Firm to	stiff brown moist siity siigntiy gravei	IN CLAT.		T. T							
-	End of	Trial Pit at 0.50m	3/2	<u>v</u>	.50	92.96						
•				- ALTONOMIST CONTRACTOR OF THE PERSON OF THE			İ					
-				. servenor							WWW.dater.	
1,0												
-												
A. C.				7								
Grou Dry	indwater	Conditions										
Stab Goo			W-1-1-MY1979-1-MY19881-90-70-7									
Gene	eral Rema	arks test carried out at 0.50m, Test mov	red 6m due to electric	c fence	and d	itch.						

	1				***************************************	***************************************			F	EPORT N	UMBER	
Je	15L		TRIAL PIT	RECO	RD			^		22	578	
CON	TRACT	Ratoath Development						TRIAL P		CBF		
LOG	GED BY	JL	CO-ORDINA	ATES	701,9	94.89 E		<del></del>	TAR/TED		et 1 of 1 6/2020	
			GROUND L	EVEL (m)	91.10	86.01 N		DATE C	OMPLET	)	6/2020 racked	*****
CLIE ENGI	NT NEER	Pivotal Construction OCSC						METHO			vator	
									Samples	9	<del>(</del>	meter
		Geotechnical Descripti	on	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSO frequen	IL: Soft to firm light brown sand t rootlets	y silty CLAY with	70.70 70.70 74.70 74.70	and the state of t							
	Firm occ slightly Gravel i limestor	casionally firm to stiff yellow bro gravelly sandy silty CLAY. Sand s angular to subangular fine to ne and mudstone.	wn mottled grey is fine to medium coarse of	× × - × × - × × - × - × - ×	0.20	90.90		- Procedure				
-	End of	Trial Pit at 0.50m	······································	× × × × × × × × × × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × - × -	0.50	90.60						
-							Address of the control of the contro					
-						Table Print T						
1.0											A CONTRACTOR OF THE CONTRACTOR	
<del>-</del>						- The contract of						
						And Andrews Company of the Company o	***************************************				Section 1	
	- d	Cdist	ent				<u> </u>	<u></u>				
Grou Dry Stab Good Plate	muwater	Conditions										
Stab Good						***************************************						
Gene	eral Rema bearing	erks test carried out at 0.50m.									***************************************	
L I COL												

T Ugsl	RIAL PIT RE	ECOF	RD				R	EPORT NI 22	578	
CONTRACT Ratoath Development			<u></u>			TRAC PI		CBR	R12 et 1 of 1	
OGGED BY DN  CLIENT Pivotal Construction	CO-ORDINATES		701,80 750,60 92.27	6.01 E 6.00 N		DATE ST	TARTED OMPLETI	29/06	6/2020 6/2020	
NGINEER OCSC		1	T			METHO		70/0		
							Samples	1	Legy Personal Property of the	rometer
Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer
TOPSOIL.	हें हें हें हें हें									
Firm to stiff brown mottled grey moist slightly slightly sandy gravelly CLAY	y silty very		0.30	91.97						
End of Trial Pit at 0.50m			0.50	91.77						
1.0		The second secon						A A A A A A A A A A A A A A A A A A A		A SAME AND
Groundwater Conditions		An Audit Marine of Control								
Dry	MANUFE TO THE PROPERTY OF THE									
Stability Good										
Seneral Remarks Plate bearing test carried out at 0.50m.										

								F	REPORT NUMBER				
1.	551/ 551/		TRIAL PIT	RECO	RD			^		22	578		
CONTRACT Ratoath Development									TRIAL PIT NO. CBR13 SHEET Sheet 1 of 1				
LOGGED BY DN  CLIENT Pivotal Construction				CO-ORDINATES 702,001.98 E 750,413.91 N				DATE S	TARTED OMPLET	29/06	Sheet 1 of 1 29/06/2020 29/06/2020		
			GROUND LE	GROUND LEVEL (m)			92.19			EXCAVATION JCB METHOD			
ENG	INEER	ocsc					1	<u> </u>					
								Samples			P _O	тее	
	Geotechnical Description					_	trike				est (K	anetro (	
				Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)	
0.0	TOPSO	IL.		<u> </u>									
<u> </u>				10 10									
				2 7 7 7	0.20	91.99				:			
	Firm to	stiff brown moist slightly sandy gra	velly CLAY.	<u> </u>									
				<u></u>									
				- 0									
-	End of 7	Frial Pit at 0.50m			0.50	91.69							
-				- Washington					Value of the second				
	}												
								ļ					
-								L. Control of the Con					
					:								
1.0													
+													
-													
				**************************************									
<u>,</u>				nes-devinement of the second			-						
-													
						-							
Groi Dry	undwater	Conditions										-	
Grot Dry Stab Goo	oility d		1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		37101								
Gen	eral Rema	arks											
Plate	e bearing	test carried out at 0.50m.											
Щ.													

									REPORT NUMBER			
1651	41	RIAL PIT RECORD							22578			
CONTRA	CT Ratoath Development				TRUM PIT NO			CBR14				
LOGGED	BY DN	CO-ORDINATES 701,703.05 E 750,481.92 N						TARTEC				
CLIENT	CLIENT Pivotal Construction ENGINEER OCSC		GROUND LEVEL (m) 91.83				EXCAV. METHO	ATION D	JCB			
ENGINEE							Samples		es ·	002	ster	
nowed with the control of the contro	Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	g g	Depth	Vane Test (KPA)	Hand Penetrometer (KPa)	
0.0 TO	PSOIL.		<u>117</u> 117	æ(£)	ᆱ	e _W	Sar	Type	De	Var	포도	
-	n to stiff brown mottled grey moist slightly	silty slightly	表 で で で で で で で で で で で が で が で が で が で	0.20	91.63							
gra	velly CLAY.	Sity Signay										
	d of Trial Pit at 0.50m		X	0.50	91.33							
West and the second sec												
- 1.0												
<b>Groundwa</b> Dry	ater Conditions							<del> </del>				
Stability Good		The second secon										
Groundwa Dry Stability Good General R Plate bear	Remarks ring test carried out at 0,50m.											

										REPORT NUMBER				
Jest Jest		TRIAL PIT RECORD									22578			
CONTRACT Ratoath Development			TF SI					IT NO.						
LOG	GED BY	DN		CO-ORDINATES		701,618.23 E 750,322.71 N			TARTED OMPLET	30/06	Sheet 1 of 1 30/06/2020 D 30/06/2020			
CLIE	NT NEER	Pivotal Construction OCSC	GROUND LE	VEL (m)	93.55			EXCAVATION METHOD		JCB				
								Samples				neter		
		Geotechnical Description	ר	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)		
0.0	TOPSO	IŁ.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7 77 3 77 77 77 78 77 78			and the second s							
<u> </u>	Stiff to very stiff brown mottled grey very slightly sandy gravelly CLAY				0.30	93.25		133217	CBR	0.30-0.50				
-	End of Trial Pit at 0.50m				0.50	93.05								
1.0				Constitution of the Consti										
-								;						
ממרימתו מייידית			NAMES AND		The same of the sa									
Grou Dry		Conditions					whore washers a server	····						
E Stability Good														
Groundwater Conditions Dry  Stability Good  General Remarks Plate bearing test carried out at 0.50m. Test moved 10m due to power line. Test tried twice, first time plate was under a stone and second time there was not much movement so a sample was taken for a lab CBR. (Sample number 133217).														

Page 1 of 2

1

Page 2 of 2

 $p^{\prime}$ 

Page 2 of 2

Page 1 of 2

Page 1 of 2

Page 2 of 2

Page 1 of 2

Page 2 of 2

1

1

Page 2 of 2

Page 2 of 2

Page 1 of 2

1

Page 2 of 2

Page 1 of 2

Page 2 of 2

T-

Page 1 of 2

Page 2 of 2

Page 1 of 2

Page 2 of 2

PRICENTED. 201062025

Appendix V BRE Digest 365 Tests

Soaka	way D	esign f -value from field tests	(F2C) IGSI
Contract: Test No.	Ratoath SA01	Contra	
Client	Pivotal Con	struction	CEIL
Date:	27/06/2020		
	of ground co	onditions	(2)
from	to	Description	Ground water
0.00	0.30	TOPSOIL,	0
			ahla
0.30	1.00	Firm brown slightly silty slightly sandy gravelly CLAY with locontent	No ingress
0.30	1.00		observed
1.00	1 90	Firm grey/brown slightly silty slightly sandy gravelly CLAY w	
1.00	1.80	medium cobble content and low boulder content. Boulders <	
		Firm to stiff dark grey slightly sandy gravelly CLAY with med	
1.80	1.95	cobble content and low boulder content. Boulders < 220mm	1.
		A Charles	
ield Data		Field Test	
Depth to	Elapsed	1 20070728421	
Water	Time		.95 m
(m)	(min)		<u>,40</u> m
0.84	0.00	Length of Pit (L)	.90 m
0.84	1.00		1
0.84	2.00		.84 m
0.84	3.00		.85 m
0.85	4.00	Elapsed time (mins)= 60	0.00
0.85	5.00		
0.85	6.00	Top of permeable soil	m
0.85	7.00	Base of permeable soil	]m
0.85	8.00		
0.85	9.00	i	
0.85	10.00		
0.85	12.00	30 C C C C C C C C C C C C C C C C C C C	100
0.85	14.00		.76 m2
0.85	16.00		083 m2
0.85	18.00	Total Exposed area = 5.	843 m2
0.85	20.00		
0.85	25.00	- Carlotte Company Com	West Carlos and
0.85	30.00	Infiltration rate (f) = Volume of water used/unit expo	sed area / unit time
0.85	40.00		
0.85	50.00	f= 0 m/min or	0 m/sec
0.85	60.00	No fall in water level after 3 minutes - test fai	led
0.03	45.00	Depth of water vs Elapsed Time (mins)	led
	40.00		
0	70.00		
E	35.00 — 30.00 —		
j	30.00 🕂		•
<u>.</u>	25.00		•
i 3	30.00		1
a d	2 - 60		
<u>71</u>	5.00		•
_	10.00		
	5.00	¥	
	0.00 <del> </del> 0.84	0.84 0.84 0.84 0.85 0.85 0	.85 0.85
	0.04		.03 0.03
		Depth to Water (m)	
			T.
			1
		i i	1

## Soakaway Design f -value from field tests (F2C) IGSL Contract: Ratoath Contract No. 22578 Test No. **SA02** Client **Pivotal Construction** Date: 27/06/2020 Summary of ground conditions from to Description Ground water 0.00 0.20 Firm grey/brown slightly sandy gravelly CLAY with medium cobble No ingress 0.20 0.90 content. observed Firm to stiff brown slightly sandy gravelly CLAY with medium cobble 0.90 2.00 content and low boulder content. Boulders < 400mm. Field Data Field Test Depth to Elapsed Water Time Depth of Pit (D) 2.00 m (m) (min) Width of Pit (B) 0.40 m 0.80 0.00 Length of Pit (L) 1.80 0.80 1.00 Initial depth to Water = 2.00 0.80 0.80 m 0.80 3.00 Final depth to water = 0.80 m 0.80 4.00 Elapsed time (mins)= 60.00 0.80 5.00 0.80 6.00 Top of permeable soil m 0.80 7.00 Base of permeable soil 0.80 8.00 0.80 9.00 0.80 10.00 0.80 12.00 0.80 14.00 0.72 Base area= m2 0.80 16.00 *Av. side area of permeable stratum over test period 5.28 m2 0.80 Total Exposed area = 18.00 m2 0.80 20.00 0.80 25.00 0.80 30.00 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.80 40.00 0.80 50.00 0 m/min or 0 m/sec 0.80 60.00 Depth of water vs Elapsed Time (mins) 45.00 40.00 **2**35.00 €30.00 Ĕ_{25.00} E <u>6</u>20.00 ह्ये 5.00 10.00 5.00 0.00 0.00 0.20 0.40 0.60 0.80 1.00 Depth to Water (m)

## f -value from field tests Soakaway Design (F2C) IGSI Contract: Ratoath Contract No. 22578 Test No. SA03 Client **Pivotal Construction** Date: 27/06/2020 Summary of ground conditions from Description Ground water 0.00 0.30 TOPSOIL. Firm to stiff brown mottled grey slightly sandy gravelly CLAY with No ingress 0.30 1.70 medium cobble content and low boulder content. Boulders < observed Stiff dark grey/black slightly sandy gravelly CLAY with medium 1.70 2.10 cobble content and low boulder content. Boulders < 330mm. Field Data Field Test Depth to Elapsed Water Time Depth of Pit (D) 2.10 m (m) (min) Width of Pit (B) 0.40 m 1.80 0.87 0.00 Length of Pit (L) m 0.87 1.00 0.87 2.00 Initial depth to Water = 0.87 m 0.87 3.00 Final depth to water = 0.88 m 0.87 4.00 Elapsed time (mins)= 60.00 0.87 5.00 0.87 6.00 Top of permeable soil m 0.87 7.00 Base of permeable soil 0.87 8.00 9.00 0.87 0.87 10.00 0.87 12.00 0.87 14.00 Base area= 0.72 m2 0.87 16.00 *Av. side area of permeable stratum over test period 5.39 m2 0.87 18.00 Total Exposed area = 6.11 m2 0.87 20.00 0.88 25.00 Volume of water used/unit exposed area / unit time 0.88 30.00 Infiltration rate (f) = 0.88 40.00 0 m/min 0 m/sec 0.88 50.00 f= or 0.88 60.00 No fall in water level after 20 minutes - test failed Depth of water vs Elapsed Time (mins) 45.00 40.00 35.00 €30.00 **≟**25.00 E 820.00 ले 15.00 10.00 5.00 0.00 0.87 0.87 0.88 0.88 0.87 0.87 0.88 0.88 Depth to Water (m)

## f -value from field tests Soakaway Design (F2C) IGSL Contract: Ratoath Contract No. 22578 Test No. **SA04** Client **Pivotal Construction** Date: 27/06/2020 Summary of ground conditions from Description Ground water 0.25 0.00 TOPSOIL. Firm to stiff brown mottled grey slightly sandy gravelly CLAY with 0.25 1.70 medium cobble content. None observed Firm to stiff dark grey/black very slightly sandy gravelly CLAY with 1.70 2.00 medium cobble content. Field Data Field Test Depth to Elapsed Water Time Depth of Pit (D) 2.00 m (min) (m) Width of Pit (B) 0.40 m 0.71 0.00 1.70 Length of Pit (L) 0.71 1.00 0.71 2.00 Initial depth to Water = 0.71 m 0.71 3.00 Final depth to water = 0.72 m 0.71 4.00 Elapsed time (mins)= 60.00 0.71 5.00 0.71 6.00 Top of permeable soil m 0.71 7.00 Base of permeable soil 0.71 8.00 9.00 0.71 0.71 10.00 0.71 12.00 0.71 14.00 0.68 Base area= m2 0.71 16.00 *Av. side area of permeable stratum over test period 5.397 m2 0.71 18.00 Total Exposed area = 6.077 m2 0.71 20.00 0.71 25.00 0.71 30.00 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.72 40.00 0.72 50.00 0 m/min 0 m/sec or 60.00 0.72 No fall in water during initial 50 minutes - test failed Depth of water vs Elapsed Time (mins) 45.00 40.00 35.00 30.00 **≟**25.00 E 820.00 南15.00 10.00 5.00 0.00 0.72 0.71 0.71 0.71 0.71 0.72 0.72 0.72 Depth to Water (m)

PRICEINED: 20/06/2025

Appendix VI Dynamic Cone Records

1	1
12	主
1	ദ്രഭൂ /
1	1002

## **DYNAMIC PROBE RECORD**

REPORT NUMBER

22578

CONTRACT	Ratoath Development						BE NO.		DP01 Sheet 1 of 1
CO-ORDINA GROUND LI CLIENT	EVEL (mOD)  Pivotal Construction	HAMMER MASS (kg)		50 100		DAT	E DRILI E LOGG	ED :	25/06/2020 25/06/2020
ENGINEER	OCSC	FALL HEIGHT (mm)		500		PRO	BE TYP	E	DPH
Depth (m)	Geotechnical Desc	ription	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record
1.0							0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50	0 0 0 0 2 3 6 9 10 8 6 7 9 11 19 17 19 21	
2.0 End	of Probe at 1.93 m						1.80	23 / 25	
3.0								4	
4.0							t		
REMARKS	ATER OBSERVATIONS  Avoidance Tool] used to scan are	ea prior to probe construction			A				

-				
2		1		5
(1	-	J	,	, in
1	00	35	37	
Ε,	1		2	
C	ON	TR	AC	T

## **DYNAMIC PROBE RECORD**

REPORT NUMBER

22578

CONTRACT							BE NO.		DP02 Sheet 1 of 1
CO-ORDINA GROUND L CLIENT	LEVEL (mOD)	HAMMER MASS (I		50 100		DAT	E DRILL		25/06/2020 25/06/2020
ENGINEER	Pivotal Construction OCSC	FALL HEIGHT (mr		500		PRO	BE TYP	E	(DPH
Depth (m)	Geotechnical Des	cription	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record
0.0	of Probe at 2.15 m						0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.20 1.30 1.40 1.50 1.60 1.70 2.00 2.10	0 0 0 1 13 14 10 8 8 10 16 10 8 8 6 10 11 16 20 25	
4.0									
GROUNDW.	ATER OBSERVATIONS  Avoidance Tool] used to scan ar	rea prior to probe construc	tion	*					

RECEINED: 20/06/2025

# Appendix VII Laboratory Data

Test Report	Determination of Moisture Content, Liquid & Plastic Limits	Tested in accordance with BS1377:Part 2:1990, clauses 3.2*, 4.3, 4.4 & 5.3
IGSL Ltd	Unit J5, M7 Business Park	Co. Kildare
Materials Laboratory	Newhall, Naas	045 846176



Report No. R113295 Contract No. 22578 Contract Name: Customer OCSC Consulting Engineers, 9 Prussia St, Stoneybatter, Dublin

Ratoath, Co.Meath

	Description
	Classification
	Liquid Limit
	ty % Preparation Liqu
	%
	Plasticity
	Plastic
15/07/20	Liquid
ted:	Moisture
Date Tested:	Sample
10/07/20	Lab. Ref
Samples Received:	o. Depth (m)
Samples Re	TP Sample No
	BH/TP

NOTE: "Clause 3.2 of BS1377 is a "withdrawn" standard due to publication of ISO17892-1:2013  Opinions and interpretations are outside the scope of accreditation.  The results relate to the specimens tested. Any remaining material will be retained for one month.  Approved by  Date  Approved by  1 of 1	dard due to pul f accreditation laining materia	as received. 77 is a "withdrawn" stan are outside the scope of simens tested. Any remproved by	ple as received.  51377 is a "withdi ons are outside ti specimens tested Approved by	ily to the sam use 3.2 of BS ind interpretati relate to the i	Results app NOTE: *Cla Opinions an The results	ed ve reports	U - Undisturbed Results ap NOTE: *CI Opinions a The result rized to approve reports H Byrne (Laboratory Manager)	U - Undisturbed Persons authorized to approve reports H Bvrne (Laboraton		meter definitive meter one point boratory	AR - As received  NP - Non plastic Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method IGSL Ltd Materials Laboratory	Liquid Limit Clause: SL Ltd M
blication of ISO17892-1:2075	dard due to pu	ed. thdrawn" stan	ple as receive 31377 is a "wi	ly to the samuse 3.2 of BS	Results app NOTE: *Cla	pə	U - Undisturbed				AR - As received NP - Non plastic	
PK					Remarks:	ırbed	B - Bulk Distu	Sample Type: B - Bufk Disturbed			WS - Wet sieved	1
												1
												1
Brown sandy gravelly CLAY	C L B	4.4	MS	61	17	14	31	17	В	A20/2908	1.0	AA135077
Grey/brown sightly sandy, gravejly, CLAY with many cobbles	C L G	4.4	SM	48	16	11	27	8.9	В	A20/2907	6.0	AA135060
Grey sandy gravelly CLAY	CL G	<b>4</b> '4	MS	58	15	13	28	13	В	A20/2906	3.0	AA135057
Grey sandy gravelly CLAY	CL G	4.4	WS	20	17	13	30	13	В	A20/2905	3.0	AA135065
Grey/brown slightly sandy, gravelly, CLAY with some cobbles	C.L.	4.4	MS	43	16	13	29	11	В	A20/2904	7.0	AA135075
Grey sandy gravelly CLAY	CL G	4.4	WS	22	19	12	31	14	В	A20/2903	3.0	AA135071
Brown sandy gravelly CLAY	CL Br	4.4	WS	64	19	15	34	15	В	A20/2902	1.0	AA135069
	(855930)	Clause		<425µm	Index	Limit %	Limit %	Content %	Type		, ,	
)escription	Classification   Description	Preparation Liquid Limit	Preparation	%	Plasticity	Plastic	Liquid	Moisture	Sample	Lab. Ref	Sample No. Depth (m)	0

R113295.Pl.xls

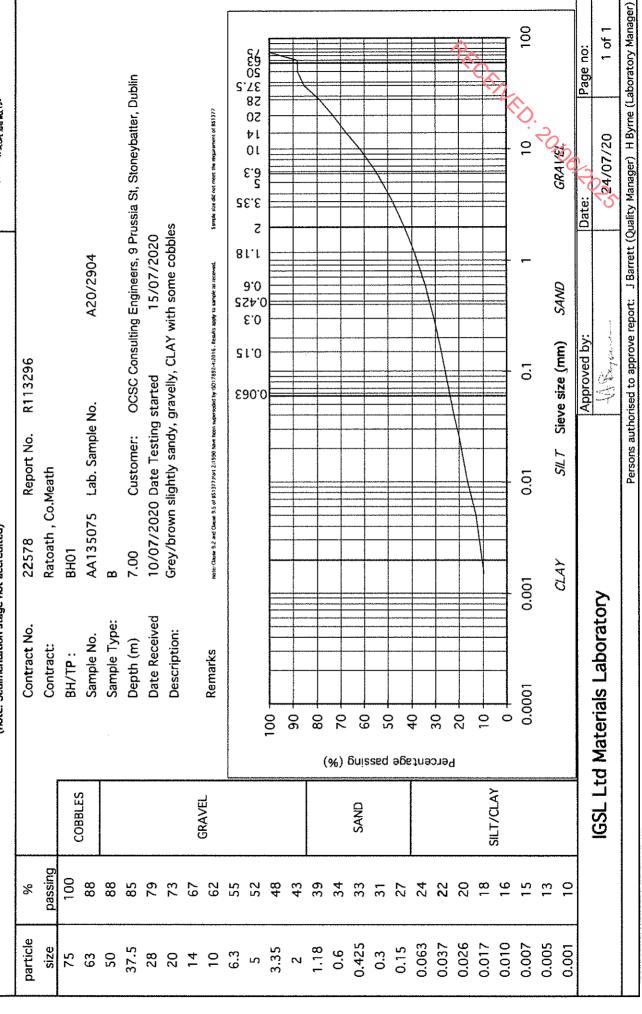
Tmp: Pl.II Rev 02/10

# Determination of Particle Size Distribution TEST REPORT

Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



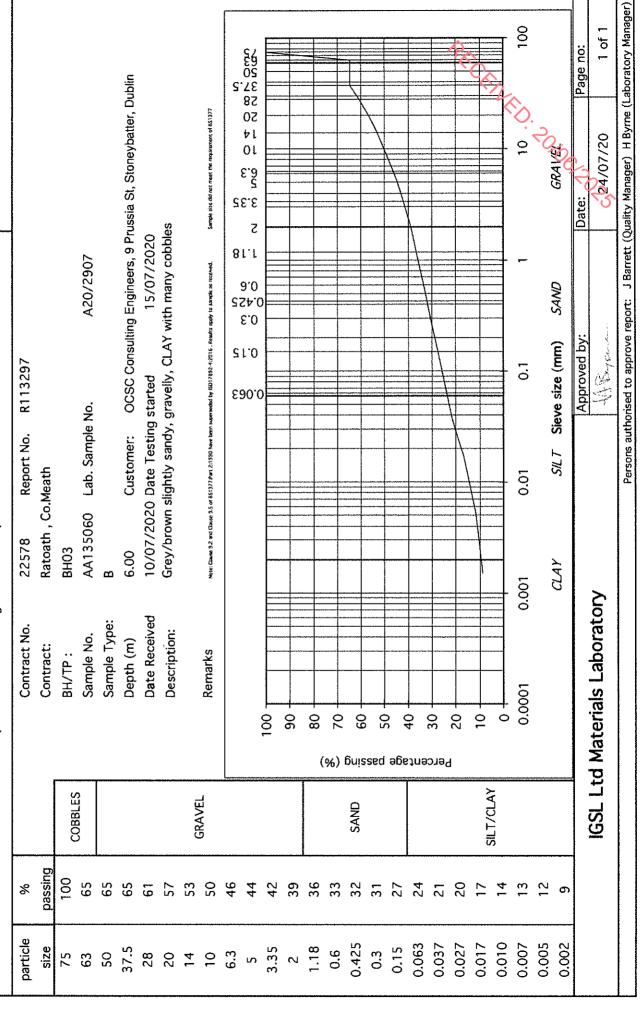


# Determination of Particle Size Distribution TEST REPORT

Tested in accordance with: B\$1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



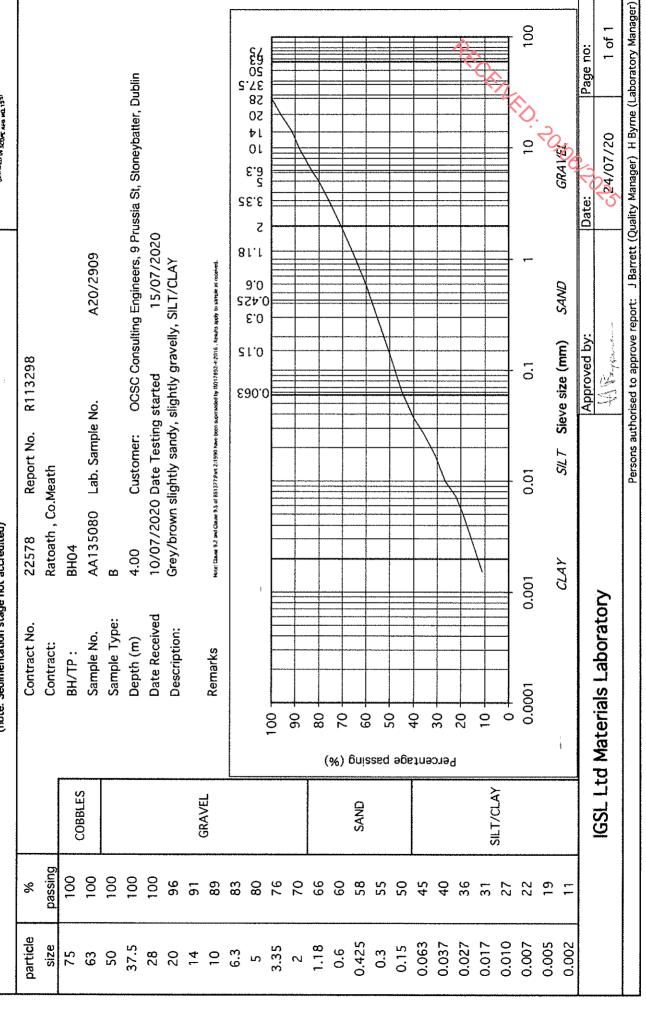


# Determination of Particle Size Distribution TEST REPORT

Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)







# 😂 eurofins

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.com

# **Final Report**

**Report No.:** 20-18135-1

Initial Date of Issue: 22-Jul-2020

Client IGSL

Client Address: M7 Business Park

Naas

County Kildare

ireland

Contact(s): Darren Keogh

Project 22578 Rataoth Meath (OCSC)

Quotation No.: Q19-18246 Date Received: 15-Jul-2020

Order No.: Date Instructed: 15-Jul-2020

No. of Samples: 2

Turnaround (Wkdays): 7 Results Due: 23-Jul-2020

Date Approved: 22-Jul-2020

Approved By:

Details: Glynn Harvey, Technical Manager

RECEINED: 20/06/2025

Client: ISSI						
Chair, 1994		Chen	ntest	b No.	Chemiest Job No.:   20-18135	20-18135
Quotation No.: Q19-18246	0	hemte	st Sam	Chemtest Sample ID.:	1031960	1031961
Order No.:		Clien	Client Sample Ref.:	le Ref.:	135069	135077
		Sa	Sample Location:	cation:	BH1	BH4
			Sample	Sample Type:	SOIL	SOIL
			Top Depth (m):	th (m):	1.00	1.00
Determinand	Accred.	SOP	Units LOD	100		
Moisture	z	2030	%	0.020	12	10
pH (2.5:1)	z	2010		4.0	[A] 8.2	[A] 8.4
Magnesium (Water Soluble)	Z	2120	l/g	0.010	< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4	ח	2120	l/g	0.010	< 0.010	< 0.010
Total Sulphur	n	2175	%	0.010	[A] 0.019	[A] 0.029
Chloride (Water Soluble)	n	2220	l/6	0.010	[A] < 0.010	[A] < 0.010
Nitrate (Water Soluble)	Z	2220	l/ĝ	0.010	< 0.010	< 0.010
Ammonium (Water Soluble)	n	2120	1/6	0.01	< 0.01	< 0.01
Sulphate (Acid Soluble)	n	2430	%	0.010	[A] 0.017	[A] 0.031

## **Deviations**

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1031960	135069		BH1		А	Amber Glass 250ml
1031960	135069		BH1		А	Plastic Tub 500g
1031961	135077		BH4		A	Amber Glass 250ml
1031961	135077		BH4		А	Plastic Tub 500g

# **Test Methods**

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

## **Report Information**

PRCRINED.

## Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
  - < "less than"
  - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

## Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

## Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

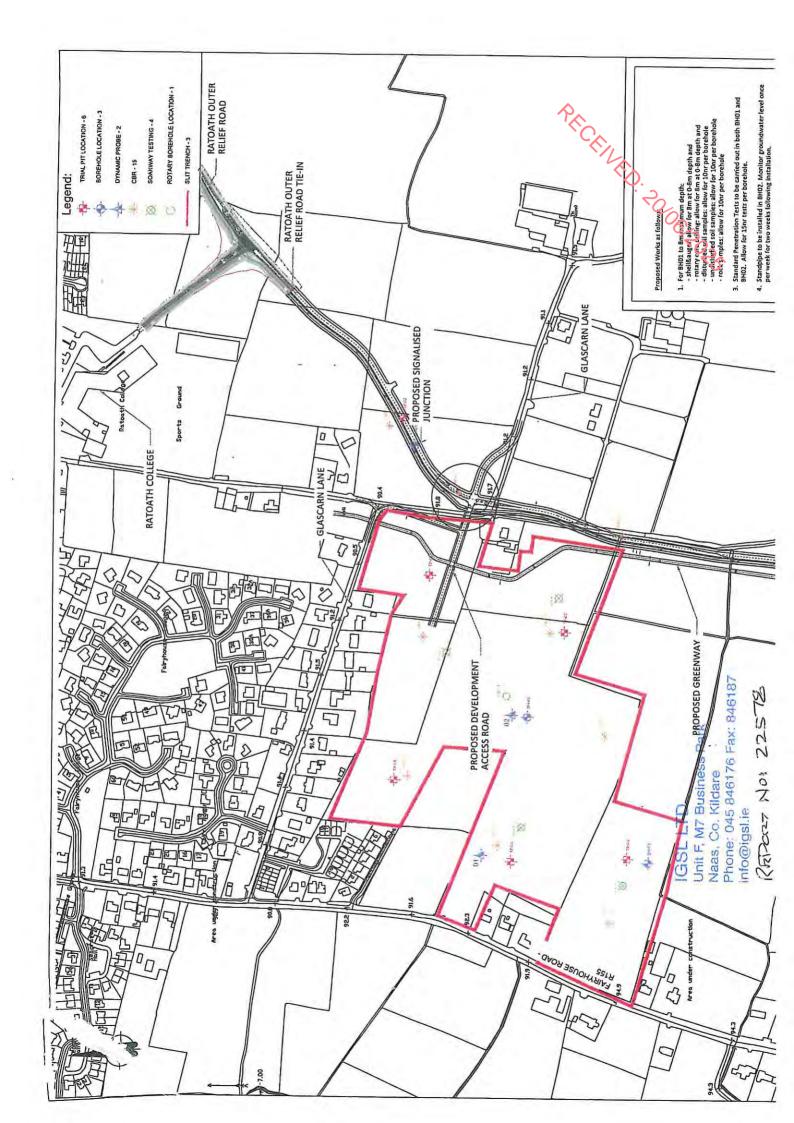
All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.com

PRICEINED. 20/06/2025

Appendix VIII Site Plan



Appendix 12.1 - Uisce Eireann EIAR Scoping Response Pocument



Uisce Éireann Ref: PN25000019842

O'Connor, Sutton, Cronin & Associates Ltd 9 Prussia Street, Dublin. D07KT57

Attention: Mark Killian

Email: mark.killian@ocsc.ie

27th March. 2025

Bosca Baile Átha C **Uisce Éireann** Bosca OP 6000 Baile Átha Cliath 1 Uisce Éireann PO Box 6000 Dublin 1 D01 WA07 Ireland

> T: +353 1 89 25000 F: +353 1 89 25001 www.water.ie

Re: EIAR Scoping Request - Proposed Large Scale Residential Development at Newtown, Ratoath, Co. Meath.

A Chara.

Uisce Éireann has received your Environmental Impact Assessment (EIA) scoping request relating to a proposed Large Scale Residential Development consisting of c.364 no. residential units in Newtown, Ratoath, Co. Meath.

It is Uisce Eireann's current policy to maintain safe and secure drinking water supplies and that no development that will impact Drinking Water Source. Uisce Eireann must be satisfied that the proposed development has no impact on drinking water quality and that water sources are adequately protected. It is a requirement of the Water Framework Directive that waters used for the abstraction of drinking water are protected so as to avoid deterioration in quality.

The following aspects of Water Services should also be considered in the scope of an EIA where relevant:

- a) Where the development proposal has the potential to impact an Uisce Éireann Drinking Water Source(s), the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to Uisce Éireann's Drinking Water Source(s) during the construction and operational phases of the development. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified as part of the report.
- b) Where the development proposes the backfilling of materials, the applicant is required to include a waste sampling strategy to ensure the material is inert.
- c) Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the environmental management plan and incident response.

UE / LH / OP6000 / 0323

- d) Any and all potential impacts on the nearby public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/ surface water interactions.
- e) Impacts of the development on the capacity of water services (i.e. do existing water services have the capacity to cater for the new development). This is confirmed by Uisce Éireann in the form of a Confirmation of Feasibility (COF). It a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Uisce Éireann to determine the feasibility of connection to the Uisce Éireann network.
- f) The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the proposed development.
- g) In relation to a development that would discharge trade effluent any upstream treatment or attenuation of discharges required prior to discharging to an Uisce Éireann collection network.
- h) In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks and potential measures to minimise and or / stop surface waters from combined sewers.
- i) Any physical impact on Uisce Éireann assets reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets.
- j) When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the applicant's site / lands to the public network and any drinking water abstraction catchments to ensure these are included and fully assessed in any pre-planning proposals. Details, where known, can be obtained by emailing an Ordnance Survey map identifying the proposed location of the applicant's intended development to <a href="mailto:datarequests@water.ie">datarequests@water.ie</a>
- k) Other indicators or methodologies for identifying infrastructure located within the applicant's lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site.
- I) Any potential impacts on the assimilative capacity of receiving waters in relation to Uisce Éireann discharge outfalls including changes in dispersion / circulation characterises. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified within the report.
- m) Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (and resultant potential impact on the capacity of the source) or the potential of the development to influence /



present a risk to the quality of the water abstracted by Uisce Éireann for public supply should be identified within the report.

- n) Where a development proposes to connect to an Uisce Éireann network and that network either abstracts water from or discharges wastewater to a protected"/ sensitive area, consideration as to whether the integrity of the site / conservation objectives of the site would be compromised should be identified within the report.
- o) Uisce Éireann does not permit building over of its assets. As an applicant you are required to;
  - survey the site to determine the exact location of the assets. Any trial investigations should be carried out with the agreement and in the presence of Uisce Éireann.
  - Provide evidence of separation distances between the existing Uisce Éireann assets and proposed structures, other services, trees, etc. have to be in accordance with the Irish Water Codes of Practice and Standard Details.
- p) Where a diversion of Public Infrastructure may be required subject to layout proposal of the development and separation distances, the applicant is required to submit a Diversions Enquiry to diversions@water.ie
- q) Mitigation measures in relation to any of the above ensuring a zero risk to any Uisce Éireann drinking water sources (Surface and Ground water).

This is not an exhaustive list.

## Please note:

- Where connection(s) to the public network is required as part of the development proposal, applicants are advised to complete the Pre-Connection Enquiry process and have received a Confirmation of Feasibility letter from Uisce Éireann ahead of any planning application.
- Uisce Éireann will not accept new surface water discharges to combined sewer networks.

Queries relating to the terms and observations above should be directed to <a href="mailto:planning@water.ie">planning@water.ie</a>

Signed on behalf of Dermot Phelan Connections and Developer Services

