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APPENDIX 5-14

ONSHORE COMPENSATION COMPOUND SITE INVESTIGATIONS



Onshore Compensation Compound Trial Pits Report

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SCEIRDRE ROCKS 220Kv GIS SUBSTATION

SITE INVESTIGATION FACTUAL REPORT

H &MV Engineering, Hamilton House Block 2, Plassey Business Park, Castletroy, Co. Limerick.

	Prepared by	Approved by	Rev. Issue Date:	Revision No.	
	Ronan Killeen	Declan Joyce	19 th July 2024	23 CE_106/03	
<u>Signature</u>					

FOREWORD

The trial pit records have been compiled from an examination of the samples by a Geotechnical Engineer and from the Drillers' descriptions.

The report presents an opinion on the configuration of the strata within the site based on the trial pit results. The assumptions, though reasonable, are given for guidance only and no liability can be accepted for changes in conditions not revealed by the trial pits.

The fieldwork was carried out in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Ground Investigations with precedence given to IS EN 1997-2 where applicable.



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2	The Site & Geology
3	Fieldwork

Appendix 1	Trial Pit Records
Appendix 2	Photographs (Trial Pits)
Appendix 3	'As-Built' Site Plan
Appendix 4	Digital Data (AGS Data)



1 Introduction.

Irish Drilling Ltd. (IDL) was instructed by H & MV Engineering Ltd. to carry out a site investigation at the site of the proposed Sceirde Rocks 220Kv GIS Substation Site.

This site investigation was carried out to provide detailed factual geotechnical information of the underlying ground conditions at the site.

The fieldwork was carried out on July 3rd 2024.

2 Site & Geology

The site is located west of Doonbeg, County Clare.

The fieldwork was carried out on agricultural lands. Weather conditions in general were quite variable with the majority of the fieldwork carried out over a typical summer period in Ireland.

A Site Plan, prepared by the client's representatives and amended by IDL to show approximate 'As-Built' fieldwork locations, is included with this report.

The following were the main published information sources used: Geological Map of Ireland: 1:500,000 scale map series.

Site investigation data is available as point source data at the proposed site:

Overview of Subsoil Geology

Peat:

The deposition of peat occurred in post-glacial periods and is generally associated with the start of warmer and wetter climatic conditions. Peat is an unconsolidated usually dark brown to black organic material comprising a mixture of decomposed and undecomposed plant matter that accumulated in an acidic waterlogged environment. Peat has an extremely highwater content generally averaging over 90% by volume.

Estuarine Deposits:

These comprise of estuarine sands, gravels and silts from water borne deposits.

Glacial Till:

Glacial Till is what was often referred to as Boulder Clay. It is a diverse material that is largely deposited sub-glacially and has a wide range of characteristics due to the variety of parent materials and different processes of deposition. Tills are tightly packed, unsorted, heterogeneous, unbedded, and can have a wide range of particle sizes and types, which are often but not exclusively angular or sub-angular.

The type of parent material plays a critical role in providing the particles that create different subsoil permeability with sandstones giving rise to a high proportion of sand sized grains in the till matrix.

Solid Geology

The Geological Map of Ireland: (GSI 1:100,000 scale map series) indicate that the site is underlain by siltstone and sandstone rock of the Gull Island Formation.

3 Fieldwork.

3.1 Fieldwork Plant:

The following plant was mobilised to site by IDL to carry out fieldwork operations: 1nr. Ex70SR Tracked Excavator.

3.2 Fieldwork Operations:

A general summary of fieldwork operations carried out to date includes the following:

• Excavation of 3nr trial pits.



3.3 Trial Pits:

Three trial pits were excavated on site using a tracked excavator.

The pits were logged and photographed by an Engineer with observations made on ground conditions, pit stability, water ingress and services encountered. The pits were excavated to depths ranging from 2.70m to 3.00m below ground level.

Small and bulk disturbed soil samples were recovered at each change in strata and returned to the laboratory and presented for testing.

In-Situ testing consisting of hand shear vane tests were also carried out where possible in cohesive soils. The tests were carried out using a Edeco Pilcon DR5118 Hand Shear Vane Unit with a 33mm vane and a conversion factor of 1.0. Records of the shear vane test results are included on the engineering logs included as appendix 1 of this factual report.

Detailed engineering logs for the trial pits completed are included with this report in Appendix 1.

3.4 General Summary:

The trial pit locations were set out on site using a Trimble CU Bluetooth GPS Surveying Unit and the co-ordinates are included on the logs presented in the appendices.

All fieldwork co-ordinates are reported to Irish Transverse Mercator (ITM) with Reduced Levels recorded relative to Malin Head Datum and with an accuracy level of + or - 0.10m.

Ground conditions encountered during the completion of the fieldwork were typical and as expected for this region and predominantly consisted of peat and/or silt overlying Glacial Tills.

The Glacial Tills in general consisted of slightly sandy gravelly silt/clay with cobbles and boulders.

For detailed descriptions of the ground conditions encountered please refer to the engineering logs included in the appendices of this report.



The following Key Legend Table details the symbology used on the engineering logs to describe ground conditions encountered:



The fieldwork was carried out in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Site Investigations with precedence given to IS EN 1997-2 where applicable.

Ronan Killeen Chartered Engineer Irish Drilling Limited July 19th 2024



Appendix 1 Trial Pit Records

CLIENT: H&MV Eng Co-ordinates: E 502,380.9 N 653,261.4 Rig: Hitachi ex70 Rev: DRAFT Ground level: 18.27m O.D. DATE: 3.7.24 GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: PIT DIRECTION: 0° Image: Application of the strikes of the strike of the strike of the strikes of the strikes of the strikes of the strike of	N/A le.								
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-3 -3									
Remarks: Hand vane at 1.00m bgl. TP dry on excavation. TP terminated at 2.70m bgl. Obstruction as boulders. TP backfilled with arisings.	Scale: 1.25								
Irish Drilling Ltd	Ph. +353 91841274 Fax								

PROJECT: Sceirde Rock Landfall TRIALPIT:TP-SS-02 LOCATION: Co. Clare Sheet 1 of 1 CLIENT: H&MV Eng Co-ordinates: Rig: Hitachi ex70SR									
ENGINEER: H&MV Eng E 502,314.2 N 653,100.5 Ground level: 22.91m O.D. PIT DIRECTION: 0° GROUNDWATER PIT DIRECTION: 0° Water strikes: Rose to after: 1st: dry 2nd: LOGGED BY: DF	Rev: DRAFT DATE: 3.7.24 ► Shoring/Support: N/A B ↓								
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S TPS FILE 1 JULY 8 20									
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PRO LOC	PROJECT: Sceirde Rock Landfall TRIALPIT: TP-SS-03 LOCATION: Co. Clare Sheet 1 of 1													
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-						× × × ×	21.28	0.40	Firmg	ev brown SILT.				
			B1 D2	0.50-0.7 0.50-0.7		× × ₀ ×	21.18	0.50	Stiff bl	uish grey slightly gravelly SIL	T. Gravel is	s angular fine.		
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Appendix 2 Trial Pit Photographs

Irish Drilling Ltd: Trial Pit Photos:



Figure 1 H:\23CE106.SceirdreRocks tp photos\TP SS01 1.jpg



Figure 2 H:\23CE106.SceirdreRocks tp photos\TP SS01 2.jpg



Figure 3 H:\23CE106.SceirdreRocks tp photos\TP SS01 3.jpg



Figure 4 H:\23CE106.SceirdreRocks tp photos\TP SS02 1.jpg

Irish Drilling Ltd: Trial Pit Photos:



Figure 5 H:\23CE106.SceirdreRocks tp photos\TP SS02 2.jpg



Figure 6 H:\23CE106.SceirdreRocks tp photos\TP SS02 3.jpg



Figure 7 H:\23CE106.SceirdreRocks tp photos\TP SS03 1.jpg



Figure 8 H:\23CE106.SceirdreRocks tp photos\TP SS03 2.jpg



Figure 9 H:\23CE106.SceirdreRocks tp photos\TP SS03 3.jpg



Appendix 3 'As-Built' Site Plan

TPSS02 TPSS03	their Vane Location ^{AB} (VL (9 ¹) Depth m Trial Pit (Sub-Station TPSS02 TPSS03 T		Legend : Peat Probe
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