

Coed Darcy

Factual Site Investigation Report

St Modwen Developments
R1870/23/5262 - Draft

April 2023



eNGLOBE

Confidentiality

“This document is intended solely for the purposes stated herein. Any use of the report must take into consideration the purpose and scope of the contract under which the report was prepared, as well as the limitations and conditions specified therein and the state of scientific knowledge at the time the report is issued. Englobe Corp. does not make any warranties or representations other than those expressly contained in the report.

This document is the work of Englobe Corp. Any reproduction, distribution, or adaptation, in whole or in part, is strictly prohibited without the prior written permission of Englobe and its Client. For greater certainty, the use of report excerpts is strictly prohibited without the written permission of Englobe and its Client, and the report should be read and considered in its entirety.

No information contained in this report may be used by any third party without the written permission of Englobe and its Client. Englobe Corp. disclaims all liability for any unauthorized reproduction, distribution, adaptation, or use of the report.

If tests have been performed, the results of these tests are valid only for the sample described in this report.

Subcontractors of Englobe who may have performed laboratory work are duly evaluated according to the purchasing procedure of our quality system. For further information or details, please contact your project manager.”

St Modwen Developments R1870/23/5262 - Draft

Prepared by:

S Gronow pp  05/04/23

Project Manager at Englobe

Project Manager:

A Bates  05/04/23

Contracts Manager at Englobe

QA Approved by:

M Holmes pp  05/04/23

Operations Director at Englobe

Revisions and publications log

REVISION No.	DATE	DESCRIPTION
00	March, 2023	First Draft
01	April 2023	Draft for issue after QA
02		

Executive Summary

Englobe has been commissioned by St Modwen Developments Ltd to undertake supplemental site investigation works and provide a factual report for the Coed Darcy Tip as part of a Pre-Construction Services Agreement. Various investigations and remediation works have preceded this phase and the objective of these works is to supplement the dataset to enhance the understanding and allow further conceptualisation and modelling of ground, ground gas/vapour and groundwater conditions. The Coed Darcy tip is a closed landfill site located at the Coed Darcy Development site, Llandarcy, Neath and is to the west of junction 42 of the M4 motorway in South Wales. The landfill site covers an area of approximately 6 hectares. The site's elevation is around 8 to 20 m above ordnance datum and is approximately centred at National Grid Reference SS 70339 95534.

A total of 11 groundwater monitoring boreholes were constructed together with two ground gas/vapour monitoring boreholes. The purpose of the boreholes was to investigate ground conditions around the periphery of the landfill area and allow assessment of groundwater conductivity across specific strata. Ground conditions together with visual and olfactory observations of contamination were logged. On-site geotechnical testing was undertaken during drilling works from specific boreholes and samples were retrieved to allow specific geotechnical and chemical analysis. Ground gas/vapour monitoring was also undertaken from new and existing monitoring wells.

A total of 16 soil samples were retrieved from varying depths during the drilling works and submitted for laboratory chemical analysis. A total of 142 geotechnical samples were also retrieved from varying depths during the drilling works and 83 samples were subject to laboratory geotechnical analysis. In-situ geotechnical testing was also undertaken where appropriate. Borehole logs and analysis results are included within the appendices of this report.

The installed boreholes were surveyed and have been subject to groundwater monitoring to record groundwater elevations and permeability testing.

Table of Contents

1	Introduction and Objectives	1
2	Site Background.....	2
3	Site Investigation Methodology	4
4	Site Investigation Findings	7

TABLES

Table 1 - Contact Points	1
Table 2 - Summary of Previous Investigation Works Carried Out	5
Table 3 - Summary of Ground Conditions	11
Table 4 - Summary of Visual and Olfactory Observations of Contamination	11
Table 5 - Summary of Groundwater Monitoring Event 31 st January 2022	12
Table 6 - Summary of Groundwater Monitoring Event 15 th March 2022	13
Table 7 - Stabilised Physio-Chemical Parameters Recorded During 15 th March 2022 Event	14
Table 8 - Soil Analyses	15
Table 9 - Groundwater Analyses	16
Table 10 - Summary of Ground Gas Monitoring Results	17
Table 11 - Summary of Vapour Monitoring Results	17
Table 12 - Summary of Field Duplicate Sample Analysis	18
Table 13 - Summary of Previously Unknown Services Encountered	19

FIGURES

D1870/23/5289/01 - Site Location Plan	
D1870/23/5289/02 - Current Site Layout	
D1870/23/5289/03 - Waste Areas	
D1870/23/5289/04 - Overview of investigation Locations	

APPENDICES

Appendix A - Drawings	
Appendix B - Borehole Logs	
Appendix C - Chemical Analysis	
Appendix D - Geotechnical Analysis	
Appendix E - Permeability Tests	
Appendix F - Photographs	



1 Introduction and Objectives

Englobe Regeneration UK Ltd (Englobe) has been commissioned by St Modwen Developments Ltd (St Modwen) to undertake pre-construction services for 'Crymlyn Tip', also known as the 'Containment Area' within previous reports, which is located on the site formerly occupied by the BP Llandarcy Oil Refinery near Neath, South Wales.

The Crymlyn Tip site is classed as an A07 In-house closed landfill site and is subject to a Cyfoeth Naturiol Cymru - Natural Resources Wales (CNC-NRW) Environmental Permit reference EPR/AP3990LR. The permit area is located within the wider site of the Coed Darcy Urban Village development as illustrated on drawing D1870/23/5289/01. The current site layout illustrating the permit boundary and associated site features are shown on drawing D1870/23/5289/02.

Various investigations and remediation works have preceded this phase and the objective of these works is to supplement the dataset to enhance the understanding and allow further conceptualisation and modelling of ground, ground gas/vapour and groundwater conditions.

This phase of work includes site investigation works, sampling, testing and monitoring. The objective of this report is to describe the works undertaken and provide the factual findings.



2 Site Background

2.1 Site Details

The Coed Darcy Urban Village development covers an area of 250 hectares and is located immediately west of junction 43 of the M4, with Neath situated approximately 4 km to the east and Swansea approximately 7 km to the west. The site is bordered to the north and west by Crymlyn Bog, a designated Special Area of Conservation (SAC), RAMSAR site and Site of Special Scientific Interest (SSSI) of international and ecological importance.

Crymlyn Tip, covering an area of approximately 6 hectares, is located on the western margin of the wider Coed Darcy development area and the site's elevation is around 8 to 20 m above ordnance datum (m AOD) centred at approximately National Grid Reference SS 70339 95534.

2.2 Neighbouring Land

The surrounding area of Crymlyn Tip generally comprises.

- Northern boundary - Crymlyn Bog;
- Eastern boundary - the wider Coed Darcy development area with the village of Llandarcy and the M4 motorway beyond;
- Southern boundary - the wider Coed Darcy development area with the village of Jersey Marine beyond;
- Western boundary - Crymlyn Bog.

2.3 Historical Development

Prior to the presence of BP Llandarcy oil refinery, which was opened in 1921, it is understood that the area of the Crymlyn Tip formed part of Crymlyn Bog and consisted of a series of natural ponds, lagoons and marshland. The area forming the tip was enclosed with an external bund comprising largely of ash built out into the Crymlyn Bog. The bund, which still defines the northern extent of the Tip stands circa

10 m above the bog at its eastern end and reduces to approximately bog level in the west. The bund formed a boundary structure to act as a containment feature in the event of bombing of the southern tank farm which could result in uncontrolled releases of free phase hydrocarbons. The ash bund has also been used as a primary access haul road into the Tip.

Following enactment of the Deposit of Poisonous Wastes Act 1972 disposal in the Tip was controlled by an annual 'season ticket' issued by Neath Rural District Council. In 1977, Neath Borough council granted BP a waste disposal license to operate the tip, which included disposal of asbestos, boiler cleanings, oil sludges, bitumens and waxes, ion exchange resin, spent clay, pyrophoric material and contaminated debris. Areas were designated for the disposal of asbestos from 1984.

In 1985, the refinery was rationalised from a main fuels to a lube oil and special product refinery, which saw an initial increase in waste disposal at the tip from the demolition works followed by a reduction in waste disposal. In 1990, BP handed management of the bog over to Countryside Council for Wales (CCW) who developed it as a Nature Reserve. In 1993, the Crymlyn Bog was designated as a National Nature Reserve and became designated as a RAMSAR site (wetland of international importance).

Following several modifications of the waste management licence, disposal of waste at the tip was discontinued in 1999, with the site being declared non-operational in 2001.

St Modwen took over the Crymlyn Tip Waste Management Licence EAWML 34003 (formerly Waste Disposal Licence NBWD5) in 2008. This was updated to a new and consolidated Environmental Permit reference EPR/AP3990LR in December 2010. The permitted area at that time covered 120,784 m² of land and was defined by the red line boundary shown in Schedule 7 of the permit. In May 2012, a Site Condition Report (SCR) was prepared for St. Modwen by Atkins Ltd for partial surrender of the Permit and in September 2017 an application was made, with a final SCR, to surrender approximately one third of the permitted area known as the 'Coed Darcy Wetlands', covering approximately 49,000 m² and largely comprising the ponds, lagoons and associated access tracks.



3 Site Investigation Methodology

3.1 Proposed Works

The works during this phase of site investigation included construction of additional groundwater and ground gas/vapour monitoring boreholes and gathering further data principally from the periphery of the landfill area. The objective of these works was to gather additional data to assist with the conceptualisation and modelling of the geotechnical and hydrogeological conditions around the periphery of the landfill area. Works were also undertaken to gather data for the ground gas/vapour conditions at the site to further inform an updated Landfill Gas Risk Assessment.

3.2 Works undertaken

The works were undertaken in line with the Construction (Design and Management) Regulations 2015 (CDM), whereby the duty holders were designated as per Table 1.

Table 1 - Project Team Organisational Roles

Organisation	Role	CDM duties
St Modwen	Client, Landowner and Permit Holder	Client
GeoEnvironmental Applications Ltd (GAL)	Client's contractor	Principal Contractor
Phil Jones Associates Ltd (PJA)	Client's consultant	Principal Designer
Englobe	Client's contractor	Contractor and Designer

Englobe established site-specific safe systems of work in agreement with the project team and mobilised to site on 24th October 2022. Englobe, together with Geotechnical Engineering Ltd, who Englobe subcontracted to undertake drilling and borehole construction works.

A total of 11 groundwater monitoring boreholes were constructed together with two ground gas/vapour monitoring boreholes. The purpose of the boreholes was to investigate ground conditions around the periphery of the landfill area and gather data to inform an updated hydrogeological assessment. Ground conditions together with visual and olfactory observations of contamination were logged. On-site geotechnical testing was undertaken during drilling works from

specific boreholes; and samples were retrieved to allow specific geotechnical and chemical analysis. Ground gas/vapour monitoring was also undertaken from new and existing monitoring wells and surface positions. The locations of the investigation and monitoring locations is shown on drawing D1870/23/5289/03, Appendix A.

A total of 16 soil samples were retrieved from varying depths during the drilling works and submitted for laboratory chemical analysis (see Table 2). A total of 142 soil samples were also retrieved from varying depths during the drilling works and 83 of them were subject to various laboratory geotechnical analysis (see Table 3). In-situ geotechnical testing was also undertaken where appropriate.

Table 2 (chemical) and Table 3 (geotechnical) provide a summary of the laboratory testing schedules. Logs of the ground conditions with the in-situ testing results can be found within Appendix B and results of the sampling and testing works are included within Appendix C (chemical) and Appendix D (geotechnical). The geotechnical samples highlighted in red signify potentially contaminated samples which were submitted via 'red' laboratory protocol for analysis.

Table 2 - Summary of Samples Submitted for Chemical Analysis

Sample ID	Depth	Analysis Scheduled
ENBH4	5.7	TPH-CWG
ENBH4	9.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	10.2	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	11.2	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	12.2	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	14.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	14.2	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH4	14.5	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	4.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	9.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	10.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	11.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	12.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	13.0	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	13.2	TPH-CWG, VOCs + TICs, SVOCs + TICs
ENBH5	14.5	TPH-CWG, VOCs + TICs, SVOCs + TICs

TPH-CWG: Total Petroleum Hydrocarbons - Carbon Working Group

VOCs: Volatile Organic Compounds

SVOCs: Semi-Volatile Organic Compounds

TICs: Tentatively Identified Compounds

Table 3 - Summary of Geotechnical Analysis Tests Undertaken

Test Method & Description	Quantity	Accredited Test
BS EN ISO 17892-1: 2013:5, Water Content	15	Yes
BS EN ISO 17892-12: 2018, Liquid & Plastic Limits	9	Yes
BS EN ISO 17892-1: 2014:5, Water Content	15	Yes
BS1377: Part 2: 1990: 4.2-4.4&5.2-5.4, Liquid & Plastic Limits	8	Yes
BS EN ISO 17892-2: 2014:5.1, Density - Linear Measurement	4	Yes
BS EN ISO 17892-2: 2014:5.2, Density - Immersion	1	Yes
BS1377: Part 2: 1990: 9.2, Particle Size Distribution - Sieve	13	Yes
BS1377: Part 4: 1990: 3, Dry Density/Moisture Content Relationship	5	Yes
BS1377: Part 7: 1990: 4.5, Determination of Shear Strength by Direct Shear	1	Yes
BS1377: Part 7: 1990: 5.5.4, Determination of Shear Strength by Direct Shear	1	Yes
Hand Vane	2	No
BS EN ISO 17892-9:2018, Consolidated Triaxial Compression Test	2	Yes

Test Method & Description	Quantity	Accredited Test
pH	14	Yes
Sulphate Content - 2:1 Water Soluble	14	Yes

Following the drilling works, each location was installed with groundwater / ground gas standpipes comprising HDPE slotted and plain pipework, as directed by the supervising engineer, depending on the position of the required response zone. The borehole was then backfilled with 2-6 mm filter pack (graded washed gravel) to the top of the response zone and bentonite pellets from the top of the gravel up to 0.5 m below ground level. The boreholes were completed with rubber bung and gas tap and headworks were constructed comprising flush steel secure covers concreted in place. The details of the ground conditions together with the borehole construction and backfill details are included within the borehole logs within Appendix B.

The installed boreholes were surveyed to record their co-ordinates and levels; and have been subject to monitoring to record groundwater elevations and presence of non-aqueous phase liquid (NAPL). Selected groundwater monitoring boreholes have also been subject to permeability testing. Ground gas/vapour monitoring boreholes have also been subject to gas/vapour monitoring and testing; and additional gas/vapour monitoring has been undertaken from across the landfilled area.



4 Site Investigation Findings

4.1 Summary of Ground Conditions within Boreholes

The intrusive investigation was carried out in accordance with BS10175:2011 +A2:2017 (BS, 2011). Observed ground conditions were recorded in accordance with BS5930:2015 +A1:2020 (BS, 2015). Detailed logs for the exploratory locations are provided within Appendix B and associated photographs within Appendix I. A summary of the ground conditions identified during the investigation has been provided in Table 4.

Table 4 - Summary of Ground Conditions

Description of Strata	Thickness (m)	Maximum Depth to Base (m bgl)
Northern Ash Bund (ENBH01 to ENBH05)		
Made Ground: Variable content including clay, silt, sand, gravel, ash, slag, clinker and brick	Varying from approx. 2.7 m toward the west decreasing to 0.6 m toward the east	2.7
Made Ground: Loose to very loose black sandy angular to subangular gravel of ash with occasional slag cobble	Varying from approx. 4.5 m toward the west increasing to 13.2 m toward the east	14.1
Superficial Geology: Yellow brown fibrous peat	Varying from approx. 2.75 m toward the west and 1.3 m toward the east	15.4
Superficial Geology: Soft to firm grey clay, sometimes sandy or gravelly	Varying from approx. 1.45 m toward the west and 0.2 m toward the east	16.6
Superficial Geology: Clayey sandy gravels and cobbles of mudstone and sandstone	Not proven	Not proven

Description of Strata	Thickness (m)	Maximum Depth to Base (m bgl)
Western, Southern and Eastern Perimeter (ENBH06a to ENBH11)		
Made Ground: Variable content including clay, sand gravel, ash, clinker, brick, concrete, bitumen, cobbles (of brick, slag, concrete, sandstone)	Varying between 1.1 and 7 m	7
Superficial Geology: Yellow brown fibrous peat	Varying between 2.4 m and at least 3 m	Not proven, at least 10 m
Superficial Geology: Firm grey clay, sand, gravel	Not proven	Not proven

4.2 Visual / Olfactory Indications of Contamination within Boreholes

Records of visual and olfactory observations of contamination are included in the logs within Appendix F. A summary of the visual and olfactory observations of contamination are provided within Table 5.

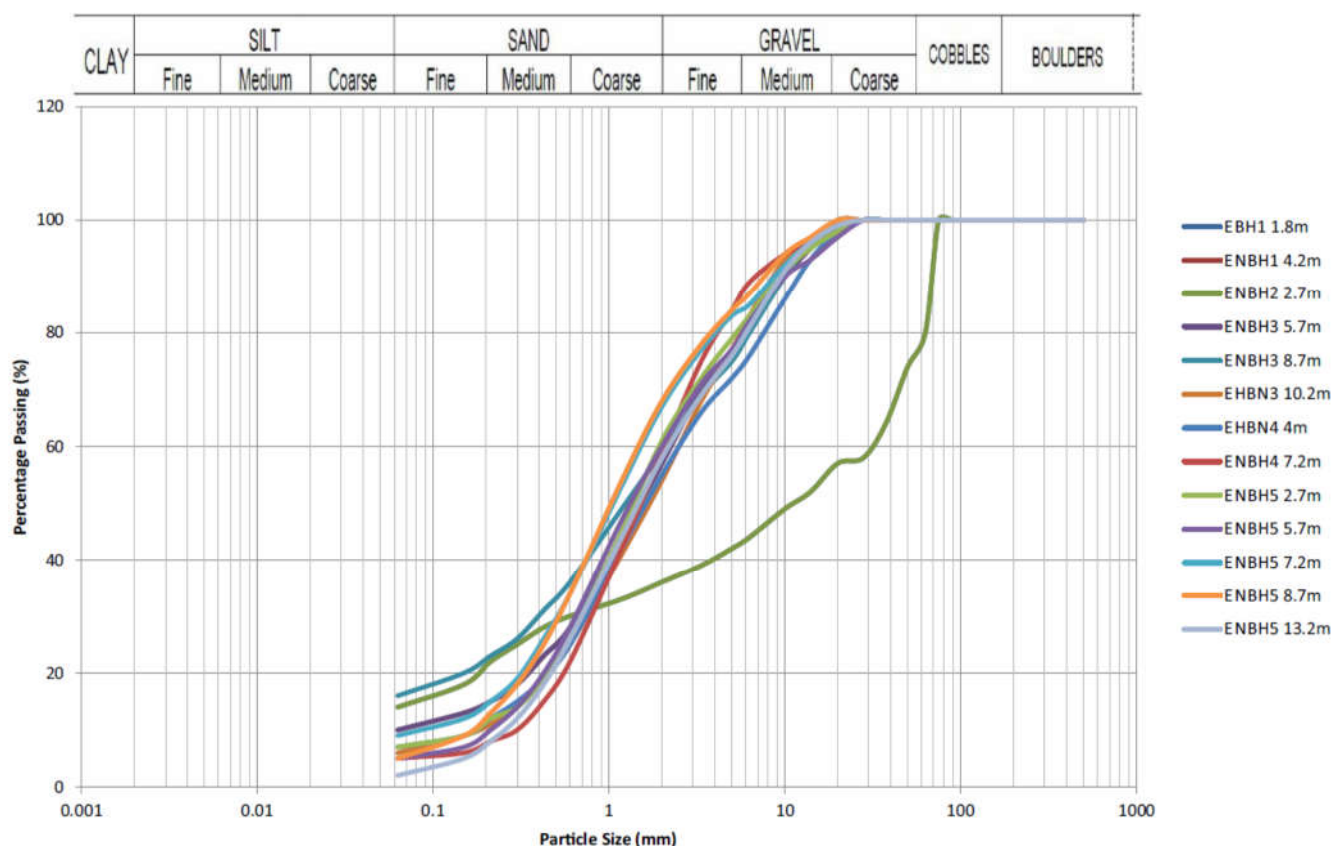
Table 5 - Summary of Visual and Olfactory Observations of Contamination

Location	Stratum	Depth (m)	Description
ENBH01	Made Ground	0.0 - 1.8	Slight hydrocarbon odour
ENBH01	Made Ground	2.7 - 7.2	Strong hydrocarbon odour
ENBH02	Made Ground	0.9 - 4.6	Oily residue, strong hydrocarbon odour, becoming very slight at 4.6 m
ENBH02	Peat	8.05 - 8.1	Stained black with slight hydrocarbon odour
ENBH03	Made Ground	5.7 - 8.7	Slight hydrocarbon odour and oily sheen
ENBH03	Made Ground	8.7 - 10.5	Strong hydrocarbon odour and oily residue
ENBH03	Peat	10.5 - 11.9	Stained black, strong hydrocarbon chemical odour
ENBH03	Peat	11.9 - 12.5	Slight chemical odour
ENBH04	Made Ground	0.9 - 14.1	Hydrocarbon odour and slightly oily sheen (strong hydrocarbon odour and oily residue observed at 10.2 m)
ENBH05	Made Ground	0.6 - 14.1	Very slight hydrocarbon odour (slight oily sheen observed between 8.6 and 13.1 m)
ENBH05	Peat	13.1 - 14.4	Slight chemical / hydrocarbon odour
ENBH06a	Made Ground	0 - 5	Free oil and hydrocarbon odour
ENBH06a	Made Ground	6.5 - 7	Hydrocarbon odour
ENBH08	Made Ground	2.5	Very oily

Location	Stratum	Depth (m)	Description
ENBH08	Made Ground	3.4 - 6	Strong hydrocarbon odour
ENBH09	Made Ground	2.5	Very oily
ENBH10	Made Ground	0.6 - 1.1	Slight hydrocarbon odour and staining

4.3 Geotechnical Data from Boreholes

The investigation allowed geotechnical testing of samples from boreholes excavated into the ash bund. Graphic 1 shows the results of grading tests on this material, which fall within a surprisingly narrow range.



Graphic 1 - Grading Analysis for Ash Bund Samples

The material is predominantly sand and gravel sized with fines content ranging from 2 to 16 %. The results of the geotechnical testing is included within Appendix D.

4.4 Groundwater

4.4.1 Groundwater Monitoring from Monitoring Wells

A groundwater monitoring event was undertaken on 10th November 2022, whereby the 11 groundwater monitoring wells were all dipped using an oil/water interface probe from the top of standpipe. The probe was used to check for the presence of light non-aqueous phase liquid (LNAPL) as well as dense non-aqueous phase liquid (DNAPL). There were no instances of LNAPL or DNAPL presence recorded during the monitoring event, which recorded water levels between 8 m AOD (ENBH7) and 12.55 m AOD (ENBH11). A GPS survey had been undertaken to survey the co-ordinates of the groundwater monitoring wells, together with the levels of the top of standpipes in order to calculate the groundwater elevations.

The locations of the 11 groundwater wells subject to monitoring can be found on drawing D1870/23/5289/03, Appendix A and a summary of the findings is presented within Table 6.

Table 6 - Summary of Groundwater Monitoring Event 10th November 2022

Monitoring Well ID	Elevation to top of pipe (m AOD)	Dip to Water (m)	Groundwater Elevation (m AOD)	Dip to Base (m)	Slotted response zone top (m)	Slotted response zone bottom (m)
ENBH01	9.587	1.430	8.157	13.320	9	13.5
ENBH02	10.966	2.640	8.326	13.870	9	14
ENBH03	13.679	5.160	8.519	15.160	11.7	15.2
ENBH04	17.910	9.420	8.490	18.430	15.9	18.5
ENBH05	19.870	8.990	10.880	19.280	17.75	19.4
ENBH06a	9.375	0.830	8.545	9.400	6	10
ENBH07	9.370	1.370	8.000	9.550	8	10
ENBH08	10.621	2.000	8.621	10.300	6.5	10.5
ENBH09	11.208	2.830	8.378	8.350	5.8	9.8
ENBH10	11.100	0	11.100	2.600	1	3
ENBH11	12.900	0.350	12.550	5.480	4.5	6

4.5 Soil Sample Collection and Analyses

A total of 16 soil samples were retrieved from varying depths during the drilling works and submitted for laboratory chemical analysis as per Table 2. The samples were appropriately handled and packaged within laboratory provided sampleware and cool boxes to maintain a low temperature during transit. Chain of custody documentation accompanied the samples, and a summary of the chemical analysis results is provided within Table 7. Copies of the laboratory chemical analysis certificates with the full results and breakdown of compounds are included within Appendix C.

Table 7 - Summary of Soil Analysis

Analyte	No. of Samples Schedules	Minimum concentration (mg/kg)	Maximum concentration (mg/kg)
Benzene	16	<1	0.14
Toluene	16	<1	0.063
Ethylbenzene	16	<1	0.055
p&m-xylene	16	<1	0.13
o-xylene	16	<1	0.13

Analyte	No. of Samples Schedules	Minimum concentration (mg/kg)	Maximum concentration (mg/kg)
TPH-CWG Aliphatic (EC5 - EC35)	16	<10	7,600
TPH-CWG Aromatic (EC5 - EC35)	16	<10	20,000

All soil samples were also scheduled for SVOCs and VOCs. The results of soil analysis are presented within the laboratory certificates of analysis, Appendix C.

4.6 Ground Gas and Vapour Monitoring

4.6.1 Introduction and Objectives of Monitoring

GGs specialists attended the site during December 2022 to undertake an initial programme of works. The objectives of this site work were as follows:

- To undertake site reconnaissance, to identify any further relevant issues.
- To assess the presence, condition and ongoing suitability of any pre-existing landfill gas monitoring infrastructure.
- To undertake real-time comparison of observed methane concentrations using both a GA5000 infra-red (IR) gas analyser and a methane-specific tuneable diode laser (TDL) gas analyser.
- To collect landfill gas samples from selected wells for subsequent laboratory analysis to identify absolute methane and TVOC concentrations using flame ionisation detection (FID) gas chromatography (GC) and mass spectrometry (MS) for comparison with results gathered in the field.
- To survey the central area surface for any significant sources of methane and/or TVOC emissions (and if detected, to seek to quantify their relative flux at the time of surveying).
- To deploy continuous monitoring equipment within select monitoring wells to provide improved information of equilibrium gas concentrations and potential driving mechanisms at a select number of key locations.

Continuous ground gas monitoring equipment was deployed in 5 No. monitoring wells for a four-week period between 7/8th December 2022 and 10th January 2023. The full dataset and analysis is presented within Appendix G. It is noted that it is considered that falling atmospheric pressure events approaching ‘worst case’ conditions were captured during the continuous monitoring period.

4.6.2 Monitoring Works

A summary of the ground gas and vapour monitoring works undertaken is provided within Table 8.

Table 8 - Schedule of On-Site Monitoring Works Undertaken

Date	
07/12/2022	Simultaneous periodic monitoring (GA &TDL) of 5 No. monitoring wells Replacement of 3 No. monitoring well headworks (to accommodate CM instruments) Deployment of 3 No. continuous monitoring instruments
08/12/2022	Simultaneous periodic monitoring (GA &TDL) of 10 No. monitoring wells Gas sampling of 6 No. monitoring wells Replacement of 2 No. monitoring well headworks (to accommodate CM instruments) Deployment of 2 No. continuous monitoring instruments Completed surface emissions walkover survey (CH ₄ & TVOC)

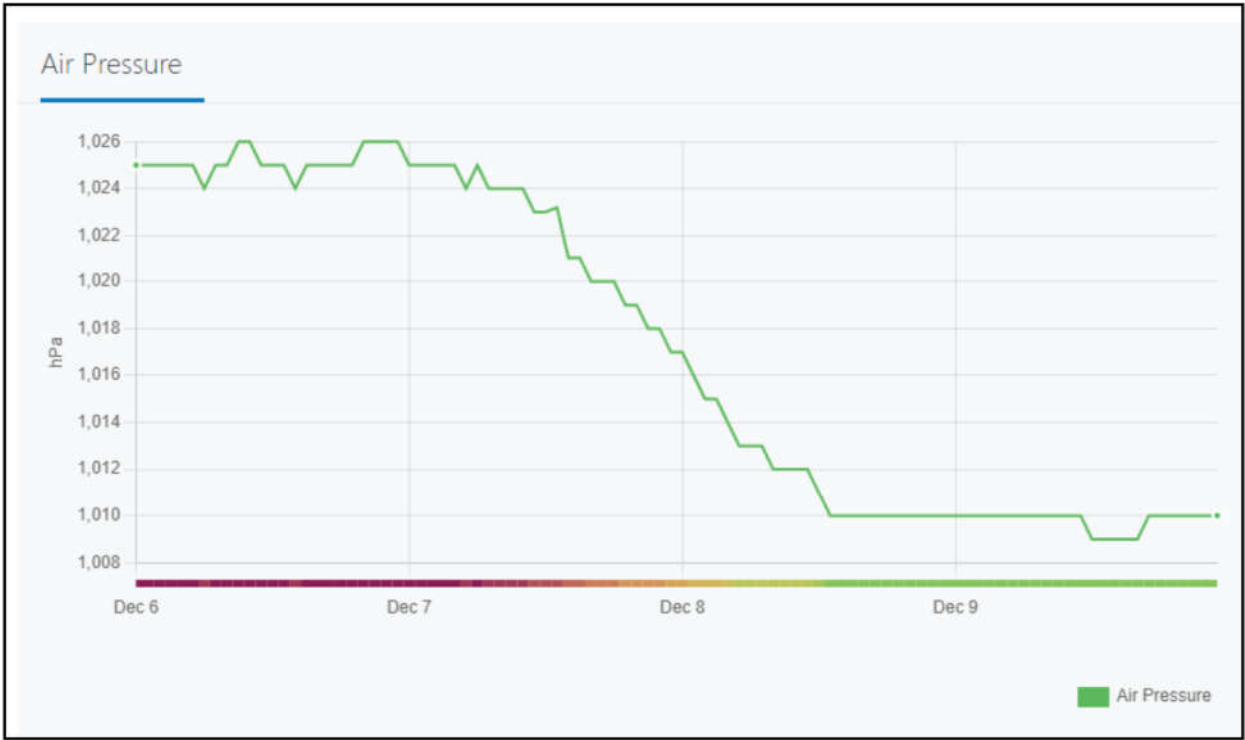
The approximate locations of the monitoring wells included in GGS’ monitoring works in December 2022 are illustrated in Graphic 2, whilst a detailed plan is included in Appendix G.



Graphic 2 - Approximate locations of the monitoring wells included in GGS’ monitoring works in December 2022.

4.6.3 Monitoring Results

GGS undertook periodic monitoring of 15 No. monitoring wells between 12:30 on 7th December and 13:00 on 8th December 2022. During the monitoring period the atmospheric pressure was falling steadily from 1023 mbar to 1010 mbar as per Graphic 3.



Graphic 3 - Atmospheric pressure trend during periodic monitoring visits (Meteostat (2022), Swansea. Available at: <https://meteostat.net/en/place/gb/swansea?s=03605&t=2022-12-06/2022-12-09>

The periodic monitoring results are summarised in Table 9.

Table 9 - Summary of December 2022 periodic monitoring results

BH	Max. steady flow rate (l/hr)	Max.CH 4 (% v/v)	Max. CO2 (% v/v)	Min.O2 (% v/v)	Max. CO (ppmv)	Max. H2S (ppmv)	TVOC (ppmv)	Min GW level (m bgl)	Notes
ENBH02	0.1	0.1	1.6	19.0	2	0	0.0	2.75	4 & 8
ENBH03	0.3	0.1	1.3	19.3	3	0	0.0	5.37	1 & 8
ENBH04	0.2	0.1	4.4	13.2	0	0	1.6	9.54	4 & 8
GM01	0.1	0.1	0.9	20.6	0	0	0.0	4.12	3 & 5
ENBH08	0.2	4.6	5.5	10.7	0	0	15.8	2.23	2
GM02	0.1	13.8	0.3	6.6	0	0	0.5	2.46	
ENBH06	-4.5	2.6	0.5	16.7	0	0	0.6	1.22	3 & 8
ENBH09	0.1	15.6	5.3	16.6	0	0	0.0	2.96	1 & 2
ENBH11	-0.3	0.5	9.8	16.2	44	1	0.0	0.34	3 & 8
CBH20	0.1	45.4	12.2	0.0	0	5	2.6	6.57	1
CBH32	0.0	3.0	9.9	6.4	0	0	9.4	NM	5
CBH51	0.1	0.1	1.5	19.6	0	0	40.2	7.08	5
CBH52	0.0	11.7	2.2	15.4	0	0	0.4	NM	6
CBH57	0.1	8.8	7.9	0.7	0	0	8.4	NM	5
MSMW2 31/ BH40	0.1	7.2	3.2	16.8	0	0	38.8	7.30	5 & 7
Key: 1/hr - litres per hour %v/v - percentage volume by volumeppmv - parts per million by volume mbgl - metres below ground level					Max - Maximum Min. - Minimum NM - Not Measured				
Notes: 1. Hydrocarbon odour 2. Sewage odour 3. Headwork flooded 4. Well unsealed upon arrival 5. Free product present					6. Well blocked (pumping pipework) 7. Uncertainty over borehole ID. 8. Gas analyser pump struggled due to negative pressure observed during sampling, indicating an isolated well headspace.				
Monitoring wells located along the northern boundary of the site, screened in peat and other naturalstrata									
Monitoring wells located along the southern boundary of the site. Screened horizon uncertain									
Monitoring wells located in the centre of the site. Screened horizon uncertain									

The periodic monitoring undertaken by GGS included multiple methods for analysing the gas concentrations in order to identify/highlight any cross-sensitivity or variance between the monitoring methods. Using different methods to quantify “total” VOC concentrations as indicative values, rather than absolute values is in line with best practice. The results are summarised in Table 10.

Table 10 - Comparison of periodic and laboratory results (key parameters only)

Location	CH4 (GA) % v/v	CH4 (TDL) % v/v	CH4 (Lab) % v/v	CO2 (GA) % v/v	CO2 (Lab) % v/v	O2 (GA) % v/v	O2 (Lab) % v/v	TVOC (PID) (ppmv)	TVOC (Lab) (ppmv)
ENBH02	0.1	0.01	NM	1.6	NM	19.0	NM	0.0	NM
ENBH03	0.1	0.0002	NM	1.3	NM	19.3	NM	0.0	NM
ENBH04	0.1	0.0002	NM	4.4	NM	13.2	NM	1.6	NM
GM01	0.1	0.0003	NM	0.9	NM	20.6	NM	0.0	NM
ENBH08	4.6	2.0	NM	5.5	NM	10.7	NM	15.8	NM
GM02	13.8	7.4	NM	0.3	NM	6.6	NM	0.5	NM
ENBH06	2.6	1.1	NM	0.5	NM	16.7	NM	0.6	NM
ENBH09	15.6	9.7	NM	5.3	NM	16.6	NM	0.0	NM
ENBH11	0.5	0.0003	NM	9.8	NM	16.2	NM	0.0	NM
CBH20	45.4	25.7	41.91	12.2	10.51	0.0	2.0	2.6	27.37
CBH32	3.0	1.3	2.29	9.9	7.62	6.4	9.4	9.4	16.99
CBH51	0.2	0.03	<0.05	2.6	0.83	20.6	18.7	40.2	8.40
CBH52	11.7	6.0	9.69	2.2	1.70	15.4	16.4	0.4	14.40
CBH57	8.9	4.3	6.49	8.0	6.00	0.7	5.1	8.4	14.33
MSMW23 1/BH40	7.2	3.1	3.59	3.2	1.88	16.8	18.7	38.8	15.84
Key: NM - Not measured.									

4.6.4 Surface Emissions

GGs undertook a detailed surface emissions survey of the site on 8th December 2022 for both methane and TVOC. Access to large areas of the site surface was not possible due to dense vegetation, saturated and the presence of earthworks bunds etc. Graphic 4 highlights the approximate area covered by the survey (in yellow). Atmospheric pressure at the time of the survey was stable at 1012 mb. Light frost was present earlier in the day, but the ground had thawed and was very wet during the surface emissions survey.



Graphic 4 - Approximate area covered by the surface emissions survey (in yellow)

No widespread surface emissions of either methane or TVOC were detected during the survey. A single point source feature associated with a surface crack was identified close to the site's southern boundary, where a maximum methane reading of 15 ppmv was recorded. No corresponding elevated TVOC measurement was evident from this feature. While the results of this survey suggest an absence of significant surface emissions, it is likely that further evidence gathered when the ground conditions are drier and higher atmospheric temperature, may be required to establish 'worst case' conditions with respect to surface VOC emissions.

4.6.5 Continuous Monitoring

Continuous ground gas monitoring equipment was deployed in 5 no. monitoring wells for a four-week period, between 7/8th December 2022 and 10th January 2023.

Table 11 summarises the continuous ground gas equipment deployed at the site.

Table 11 - Schedule of Continuous Monitoring at the Site

Location ID	Dates monitored	Instrument Model & ID
ENBH04	08/12/22 - 10/01/23	GC31/04/09 & FD05
ENBH08	07/12/22 - 10/01/23	GC50/06/18 & FD24
ENBH09	07/12/22 - 10/01/23	GC125/03/10 & FD20*
GM01	08/12/22 - 10/01/23	GC117/03/10 & FD22BL001-2017849
GM02	07/12/22 - 10/01/23	GC118/03/10 & FD21
Key: GC - GasClam; FD - Flow Device; BL - Barologger		

The continuous monitoring data undertaken by GGS, is presented on time-series graphs and the full dataset will be presented within the updated Landfill Gas Risk Assessment Report. The most significant atmospheric pressure fall captured during the continuous monitoring period was 17 mbar over 11-hours and, with a peak rate of fall of 8 mbar over 4-hours at 8 am on 30th December 2022.

4.7 Field and Laboratory QA/QC

Samples retrieved during the soil and groundwater monitoring works were analysed by i2 Analytical laboratories, a UKAS and MCERTS accredited laboratory. Details of the testing methods, limits of detection (LOD) and accreditation status for each test are included within the laboratory certificates of analysis presented within Appendix C. 'Subsequent to the completion of the soils analysis, Englobe was made aware by i2 that certain parameters did not obtain accreditation. The Certificates of Analysis record where this is the case. We have received detailed and satisfactory assurances from i2 that the loss of accreditation related to protocols for QA/QC testing of in-house 'standard' samples and not the actual site samples. The concentrations recorded for site samples can therefore be relied upon as accurate

4.8 Unplanned Events and Near Misses

Health and safety was managed during the works in line with the CPP, which was kept up to date during the works. No health and safety incidents occurred during the works.

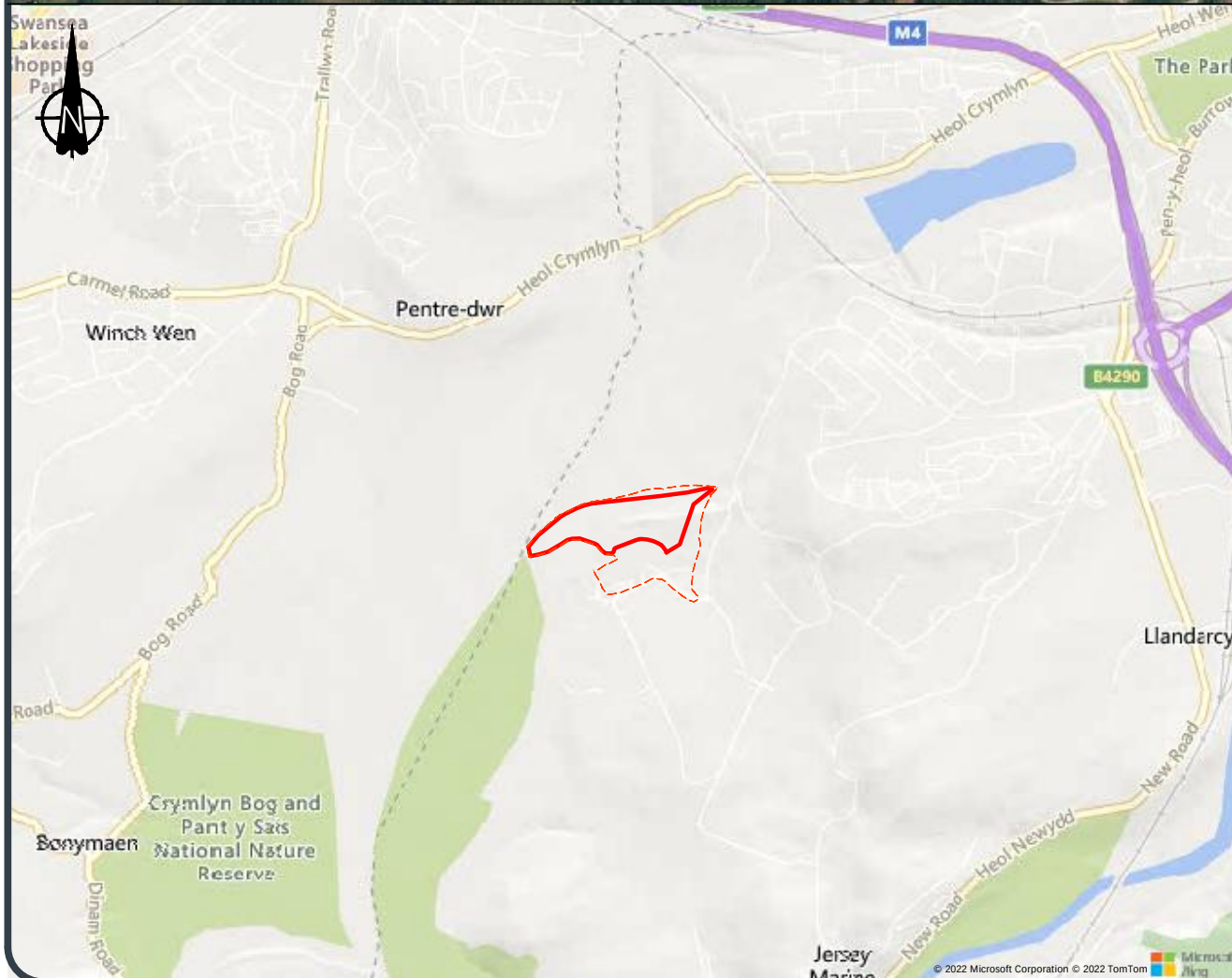
4.9 Photographs of Site During Works

Photographs were taken of site activities and trial pitting works and a selection of images are provided within Appendix F.

Appendix A Drawings



ENGLOBE



LEGEND

-  NRW Permit Boundary
-  Indicative Site Boundary

1	Amended drawing number	21.02.23
0	First Draft	12.01.23
REV	COMMENT	DATE



Unit 8, Commerce Park
Brunel Road
Theale
Reading
RG7 4AB
01189 187340

Columbus House
Greenmeadow Springs
Tongwynlais
Cardiff
CF15 7NE
02920 368636

enquiries@englobecorp.com
www.englobecorp.com

Client
St Modwen

Project
Coed Darcy

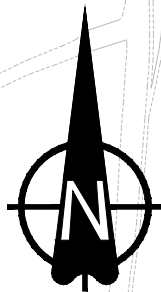
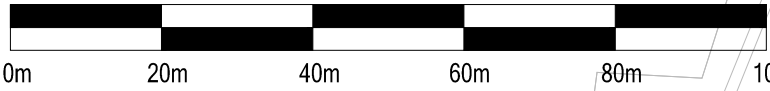
Title
Site Location Plan

Drawn by	Checked	Date	Authorised	Date
JA	KS	12.01.23	KS	12.01.23
Original Scale	Date	Rev	Paper	
NTS	12.01.23	0	A3	

Drawing Number
D1870/23/5289/01

mm 10 20 30 40 50 60 70 80 90 100

Crymlyn Bog



Legend

- NRW Permit Boundary
- Upper Tip
- Lower Tip
- Peripheral Trench Location
- Indicative Site Boundary
- 'Santander' Trench Location

0	First Issue	13.03.23
REV	COMMENT	DATE

englobe

Unit 8, Commerce Park Brunel Road Theale Reading RG7 4AB 01189 167340	Columbus House Greenmeadow Springs Tongwynlais Cardiff CF15 7NE 02920 368636	enquiries@englobecorp.com www.englobecorp.com
--	---	--

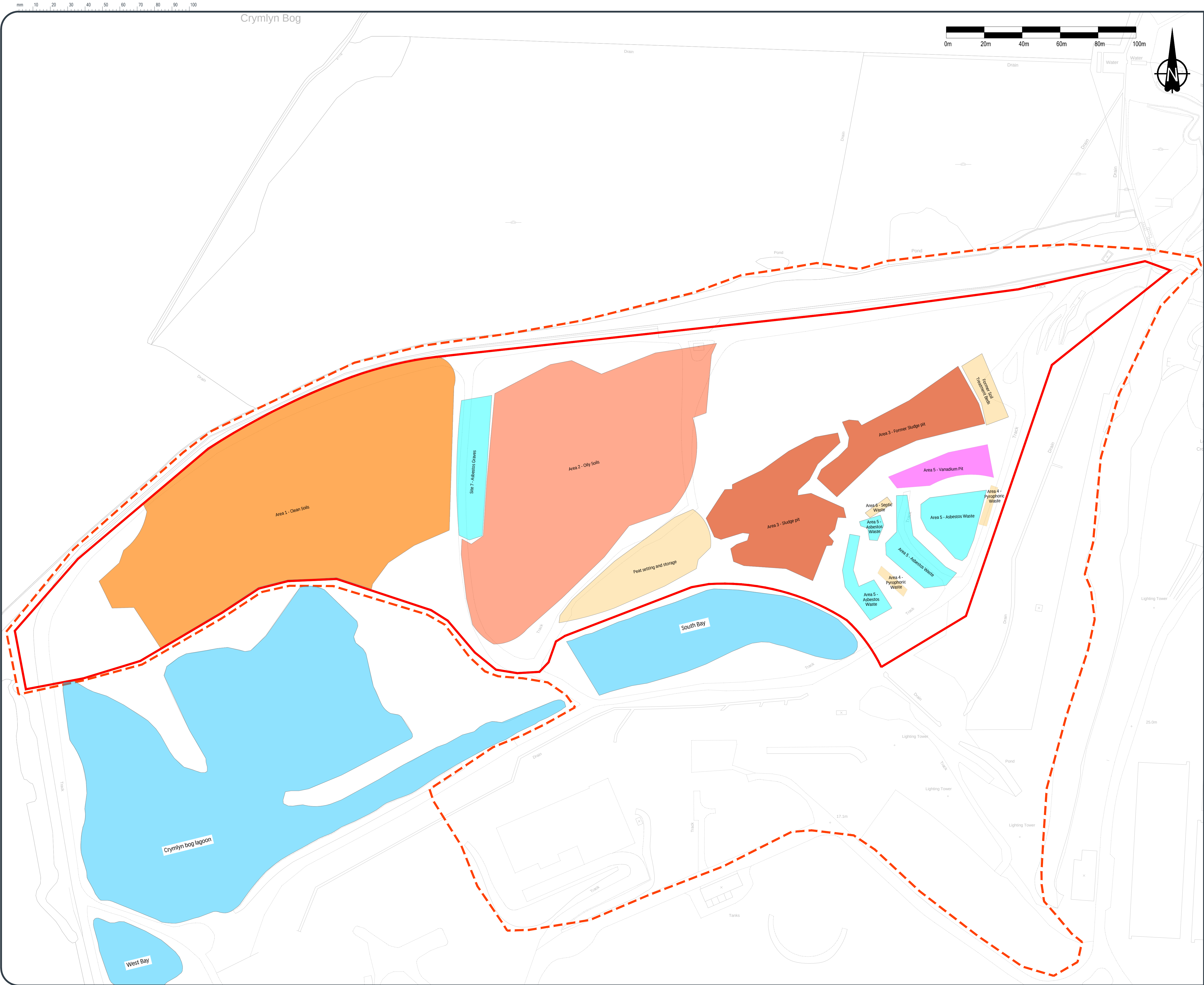
Client
St Modwen Homes

Project
Coed Darcy Tip

Title
Current Site Layout

Drawn by JA	Checked AB	Date 13.03.23	Authorised MH	Date 13.03.23
Original Scale 1:1000	Date 10.01.23	Rev 0	Paper A1	

Drawing Number
D1870/23/5289/02



- Legend
- NRW Permit Boundary
 - Site Boundary

0	First Issue	13.03.23
REV	COMMENT	DATE

ENGLOBE 		
Unit 8, Commerce Park Brunel Road Theale Reading RG7 4AB 01189 167340	Columbus House Greenmeadow Springs Tongwynlais Cardiff CF15 7NE 02920 368636	enquiries@englobecorp.com www.englobecorp.com

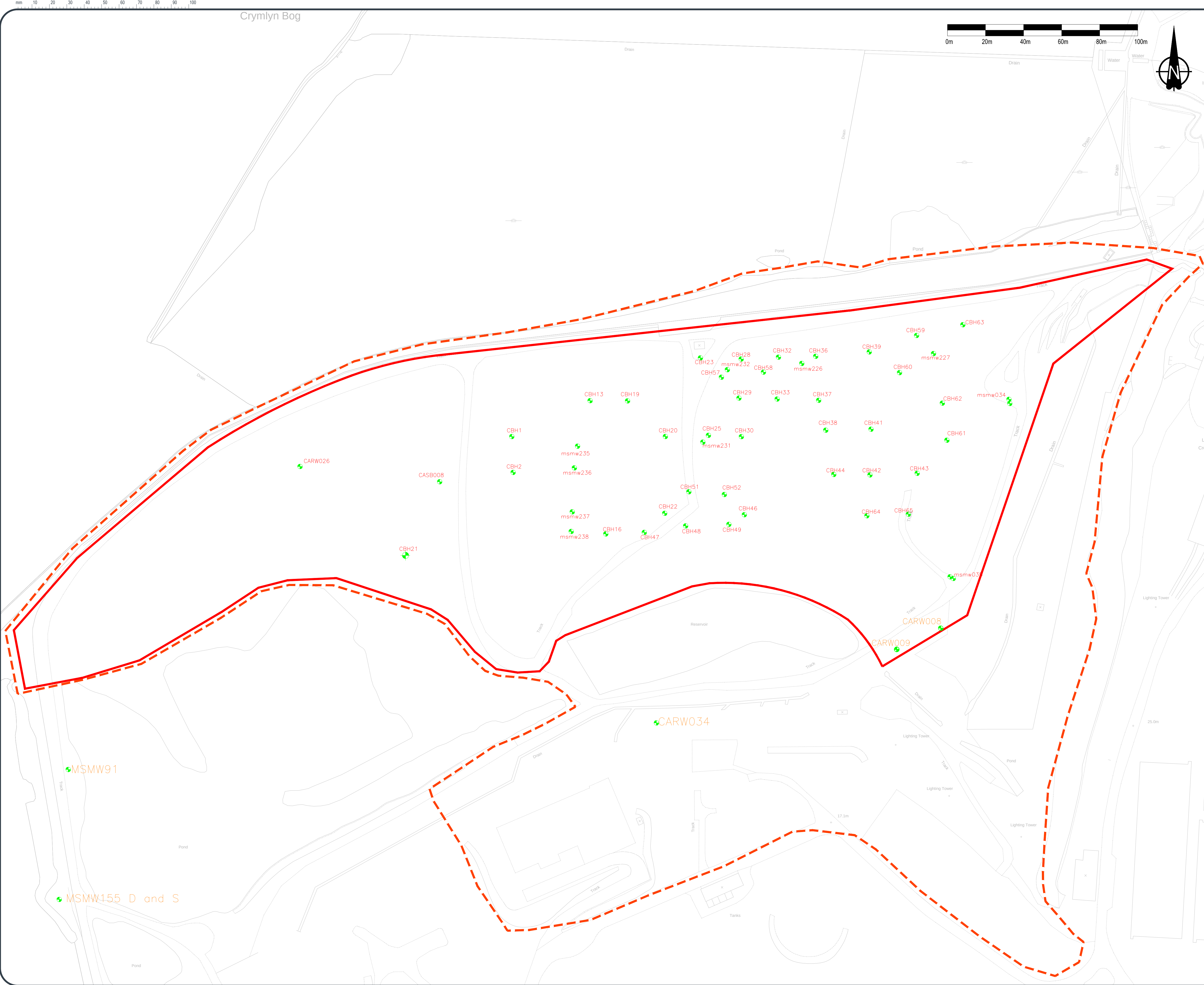
Client
St Modwen Homes

Project
Coed Darcy Tip

Title
Waste Areas

Drawn by JA	Checked AB 13.03.23	Date MH 13.03.23	Authorised Date MH 13.03.23
Original Scale NTS	Date 24.02.23	Rev 0	Paper A1

Drawing Number
D1870/23/5289/03



- Legend
- NRW Permit Boundary
 - Site Boundary
 - Existing Monitored Borehole (As of June 2022)

0	First Issue	13.03.23
REV	COMMENT	DATE

Unit 8, Commerce Park Brunel Road Theale Reading RG7 4AB 01189 167340	Columbus House Greenmeadow Springs Tongwynlais Cardiff CF15 7NE 02920 368636	enquires@englobecorp.com www.englobecorp.com
--	---	---

Client
St Modwen Homes

Project
Coed Darcy Tip

Title
PJA / GAL Monitoring Locations

Drawn by JA	Checked AB	Date 13.03.23	Authorised MH	Date 13.03.23
Original Scale NTS	Date 27.02.23	Rev 0	Paper A1	
Drawing Number D1870/23/5289/04				

Appendix B

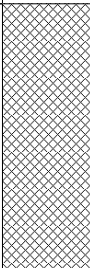
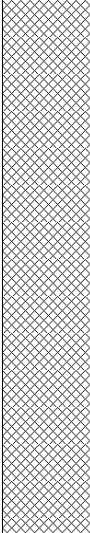
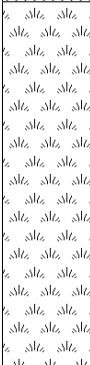
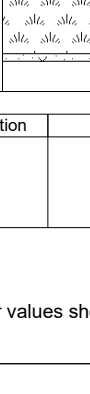
Borehole Logs



eNGLOBE

Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd			
Project No. : C1870		Crew Name: JC (Geotechnical Engineering Ltd)		Drilling Equipment: Comacchio 305	
Borehole Number ENBH1	Hole Type BH	Level 9.59m AoD	Logged By RS	Scale 1:50	Page Number Sheet 1 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50 - 0.70	B					MADE GROUND comprising dark brownish grey and black slightly sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of sandstone with low cobble content and occasional sub-angular fine to coarse gravel of brick. Cobbles are sub-angular of vesicular slag and brick. Slight hydrocarbon odour.	1
		1.20 - 1.65	D					<u>Very loose below 1.20m</u>	
		1.20 - 1.80	B						
		1.20 - 2.70	LB						
		1.20	SPT	N=2 (1,1/0,0,1,1)					
		1.80 - 2.40	D		1.80	7.79		MADE GROUND comprising firm grey mottled orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to sub-angular fine to coarse of sandstone.	2
		1.85		HVP=70.0					
		2.40 - 2.70	D		2.40	7.19		MADE GROUND comprising soft grey silty CLAY	
		2.50		HVP=28.0					
		2.60		HVP=22.0	2.70	6.89			
		2.70 - 3.15	D					MADE GROUND comprising very loose to loose black sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag. Strong hydrocarbon odour.	3
		2.70 - 4.20	B						
		2.70 - 4.20	LB						
		2.70	SPT	N=1 (1,0/0,0,1,0)					
		4.20 - 5.70	LB						4
	4.20	SPT	N=7 (2,2/2,2,1,2)						
	5.70 - 6.15	D						5	
	5.70 - 7.20	LB							
	5.70	SPT	N=3 (1,0/1,0,1,1)						
	7.20 - 7.65	D		7.20	2.39		Firm locally spongy brown and yellow brown PEAT with occasional decomposed fibrous tree branches (<20mm in diameter).	6	
	7.20 - 8.10	LB							
	7.20	SPT	N=8 (1,1/2,1,2,3)						
	7.70 - 7.80	D							
	8.10 - 8.55	D						7	
	8.10 - 9.00	LB							
	8.10	SPT	N=4 (1,0/1,1,1,1)						
	8.70 - 8.80	D						8	
	9.00 - 10.50	LB						9	
	9.00 - 9.45	D							
	9.00	SPT	N=8 (1,0/1,1,2,4)						
	10.00 - 10.10	D		9.95	-0.36		Soft grey slightly sandy silty CLAY with occasional decomposed tree branches (<10mm diameter).	10	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
		4.20	168								
		5.70	168								
		7.20	168								

Remarks

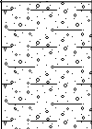
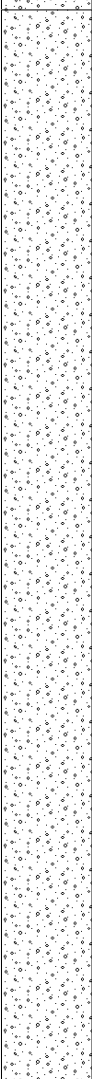
Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values.





Percussion Drilling Log

Project Name: Coed Darcy Tip			Client: St Modwen			Date:			
Location: Urban Village, Neath			Contractor: Geotechnical Engineering Ltd						
Project No. : C1870			Crew Name: JC (Geotechnical Engineering Ltd)			Drilling Equipment: Comacchio 305			
Borehole Number ENBH2		Hole Type BH		Level 10.97m AoD		Logged By RS		Scale 1:50	Page Number Sheet 1 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50 - 0.70	B		0.90	10.07		MADE GROUND comprising black mottled brown and orangish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag and clinker.	1
		1.20 - 1.65 1.20 - 2.70 1.20 - 2.70 1.20	D B LB SPT	N=2 (1,1/0,1,0,1)				<u>1x no. 250x180x60mm cobble of medium grey sandstone at 0.80m.</u> MADE GROUND comprising very loose black and locally orangish brown and grey sandy angular to sub-angular fine to medium GRAVEL of ash with occasional medium to coarse gravel of sandstone, slag and clinker with rare fragments of brick. Oily residue. <u>Strong hydrocarbon odour.</u> <u>1x no. 300x200x180mm boulder of strong grey vesicular slag at 1.00-1.20m.</u>	
		2.70 - 3.15 2.70 - 4.20 2.70 - 4.20 2.70	D B LB SPT	N=4 (1,0/1,1,1,1)	8.05	2.92			2
		4.20 - 4.65 4.20 - 5.70 4.20	D LB SPT	N=0 (1,0/0,0,0,0)					
		5.70 - 6.15 5.70 - 7.20 5.70	D LB SPT	N=1 (1,0/1,0,0,0)					
		7.20 - 7.65 7.20 - 8.05 7.20 - 8.70 7.20	D B LB SPT	N=3 (1,1/0,1,1,1)	9.80	1.17		Oily residue is absent. Hydrocarbon odour is very slight.	5
		8.30 - 8.40 8.30 - 8.40 8.70 - 9.15 8.70 - 9.60 8.70	D D LB SPT	N=6 (1,1/1,2,2,1)					
		9.30 - 9.40 9.30 - 9.40 9.60 - 10.20	D D LB						
		9.90 10.00 - 10.10	D	HVP=30.0					

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values.





Percussion Drilling Log

Project Name: Coed Darcy Tip				Client: St Modwen				Date:			
Location: Urban Village, Neath				Contractor: Geotechnical Engineering Ltd							
Project No. : C1870				Crew Name: JC (Geotechnical Engineering Ltd)				Drilling Equipment: Comacchio 305			
Borehole Number ENBH3		Hole Type BH		Level 13.68m AoD		Logged By RS		Scale 1:50		Page Number Sheet 1 of 2	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50 - 0.70	B		0.20	13.48		MADE GROUND comprising topsoil of brownish grey slightly gravelly silty fine SAND. Gravel is sub-angular fine of sandstone with rare fragments of slag and clinker.	
		1.20 - 1.65	B					MADE GROUND comprising black mottled brown and orangish brown angular to sub-angular fine to medium GRAVEL of ash with occasional medium to coarse gravel of sandstone and slag.	1
		1.20 - 1.65	D					No odour detected.	
		1.20 - 2.70	LB					2 no. 15-20mm diameter x 180 - 300mm long partially decomposed tree branches at 1.30-1.60m.	
		1.20	SPT	N=5 (1,0/1,2,1,1)	1.65	12.03			
		1.65 - 2.05	B					MADE GROUND comprising soft yellowish brown mottled grey and reddish brown slightly sandy gravelly CLAY with occasional fragments of brick and ash. Gravel is angular to sub-angular fine to coarse of sandstone.	2
		2.05 - 2.70	B		2.05	11.63			
		2.70 - 3.15	D					MADE GROUND comprising very loose black mottled yellowish brown and white angular to sub-angular fine to medium GRAVEL of ash with occasional fragments of slag and clinker.	3
		2.70 - 4.20	B					No odour detected.	
		2.70	SPT	N=1 (1,0/1,0,0,0)					
		4.20 - 4.65	D					4	
		4.20 - 5.70	B						
		4.20 - 5.70	LB						
		4.20	SPT	N=1 (1,0/0,1,0,0)					
		5.70 - 6.15	D					5	
		5.70 - 7.20	B						
		5.70 - 7.20	LB						
		5.70	SPT	N=3 (1,1/1,0,1,1)			Slight hydrocarbon odour and oily sheen observed at 5.70-8.70m.	6	
		7.20 - 7.65	D					7	
		7.20 - 8.70	B						
		7.20 - 8.70	LB						
		7.20	SPT	N=3 (1,1/0,1,1,1)			Loose at 7.20-10.50m.	8	
		8.70 - 10.20	B					9	
		8.70 - 10.20	LB						
		8.70 - 9.15	D						
		8.70	SPT	N=7 (1,1/1,2,2,2)			Strong hydrocarbon odour and oily residue observed at 8.70-10.50m.	10	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. No water strike noted; borehole dry to 4.20m and water added for flushing thereafter.

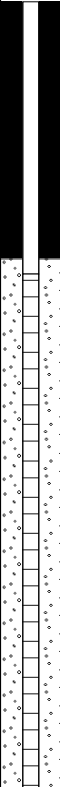
'No recovery' noted by logger at 5.70-6.15m and 10.20-10.65m for D SPT samples.





Percussion Drilling Log

Project Name: Coed Darcy Tip			Client: St Modwen			Date:			
Location: Urban Village, Neath			Contractor: Geotechnical Engineering Ltd						
Project No. : C1870			Crew Name: JC (Geotechnical Engineering Ltd)			Drilling Equipment: Comacchio 305			
Borehole Number ENBH3		Hole Type BH		Level 13.68m AoD		Logged By RS		Scale 1:50	Page Number Sheet 2 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.20 - 10.50	B	N=6 (1,1/2,1,1,2)	10.50	3.18		MADE GROUND comprising very loose black mottled yellowish brown and white angular to sub-angular fine to medium GRAVEL of ash with occasional fragments of slag and clinker. No odour detected.	11
		10.20 - 10.65	D						
		10.20 - 11.20	LB						
		10.20	SPT						
		10.50 - 11.20	B						
		10.70 - 10.80	D						
		11.20 - 11.30	D	N=12 (1,1/2,3,3,4)	11.90	1.78		Firm brown stained black spongy fibrous PEAT with occasional decomposed tree branches and roots (<5mm diameter). Strong hydrocarbon chemical odour.	12
		11.20 - 11.70	LB						
		11.70 - 11.90	D						
		11.70 - 12.15	D						
		11.70 - 13.20	LB						
		11.70	SPT						
		12.50 - 13.00	U	HVP=38.0	12.50	1.18		Soft light yellowish grey mottled black organic CLAY with occasional black decomposed organic fragments (<2mm diameter).	13
		12.50							
		12.95							
	13.20 - 13.65	D	N=20 (4,3/3,5,6,6)	13.05	0.63		Soft light grey mottled orangish brown slightly gravelly CLAY with low cobble content. Gravel is sub-angular to sub-rounded fine to coarse of sandstone. Low cobble content. Cobbles are sub-rounded of sandstone.	14	
	13.20								
				13.90	-0.22		Firm at 13.20-13.90m	15	
							Very dense grey and brown slightly sandy slightly clayey medium to coarse GRAVEL of sandstone with high cobble content. Cobbles are sub-rounded to rounded of sandstone. Loss of fines, likely washed out due to waterflush.	16	
				15.20	-1.52		End of Borehole at 15.200m	17	
								18	
								19	
								20	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. No water strike noted; borehole dry to 4.20m and water added for flushing thereafter.

'No recovery' noted by logger at 5.70-6.15m and 10.20-10.65m for D SPT samples.



ENGLOBE		Percussion Drilling Log									
Project Name: Coed Darcy Tip				Client: St Modwen				Date:			
Location: Urban Village, Neath				Contractor: Geotechnical Engineering Ltd							
Project No. : C1870				Crew Name: JC (Geotechnical Engineering Ltd)				Drilling Equipment: Comacchio 305			
Borehole Number ENBH4		Hole Type BH		Level 17.91m AoD		Logged By RS		Scale 1:50		Page Number Sheet 1 of 2	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.50 - 0.70	B		0.15 0.23	17.76 17.68		MADE GROUND comprising black and grey sandy angular to sub-angular fine to coarse GRAVEL of sandstone with occasional fragments of brick and slag		1	
									MADE GROUND comprising very strong grey mottled orangish brown CONCRETE.		
		1.20 - 1.65 1.20 - 2.70 1.20 - 2.70 1.20	D B LB SPT	N=9 (1,3/3,2,3,1)		0.90 17.01		MADE GROUND comprising dark grey, brown and orangish brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of sandstone with fragments of brick.			
								MADE GROUND comprising loose black mottled grey and brown slightly sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag and clinker and rare sandstone fragments. Hydrocarbon odour and slightly oily sheen observed.			
		2.70 - 3.15 2.70 - 4.20 2.70 - 4.20 2.70	D B LB SPT	N=0 (1,0/0,0,0,0)							
		3.80 - 3.85	D					Soft orangish brown slightly gravelly CLAY. Gravel is sub-angular fine to coarse of sandstone.			
		4.20 - 4.65 4.20 - 5.70 4.20 - 5.70 4.20	D B LB SPT	N=1 (1,0/0,0,1,0)							
		5.70 5.70 - 6.15 5.70 - 7.20 5.70 - 7.20 5.70	ES D B LB SPT	N=7 (1,1/2,1,2,2)							
		7.20 - 7.65 7.20 - 8.70 7.20 - 8.70 7.20	D B LB SPT	N=2 (1,1/1,0,1,0)							
		8.70 - 10.20 8.70 - 10.20 8.70 - 9.15 8.70 9.00	B LB D SPT ES	N=4 (1,1/1,1,1,1)							
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks										AGS	
Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. No water strike recorded due to flushing at 5.70m bgl. Water level shown was recorded at start of shift on 03/11/2022.											
Coring information: 14.30-15.50m (TCR=100%); 15.50-15.95m (No recovery); 16.50-17.00m (TCR=100%); 17.00-17.70m (TCR=65%); 17.70-18.20m (TCR=100%) and 18.20-18.90m (TCR=57%)											



Percussion Drilling Log

Project Name: Coed Darcy Tip

Client: St Modwen

Date:

Location: Urban Village, Neath

Contractor: Geotechnical Engineering Ltd

Project No. : C1870

Crew Name: JC (Geotechnical Engineering Ltd)

Drilling Equipment: Comacchio 305

Borehole Number
ENBH4

Hole Type
BH

Level
17.91m AoD

Logged By
RS

Scale
1:50

Page Number
Sheet 2 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.20	ES	N=3 (1,2/1,0,1,1)	14.10	3.81		MADE GROUND comprising loose black mottled grey and brown slightly sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag and clinker and rare sandstone fragments. Hydrocarbon odour and slightly oily sheen observed. <u>Stronger hydrocarbon odour with oily residue observed at 10.20m.</u>	11
		10.20 - 10.65	D						
		10.20 - 11.70	B						
		10.20 - 11.70	LB						
		10.20	SPT						
		11.20	ES	N=2 (1,0/0,1,1,0)					12
		11.70 - 13.20	B						
		11.70 - 13.20	LB						
		11.70	SPT						
		12.20	ES						
		13.20 - 13.65	D	N=10 (1,2/3,4,2,1)					13
		13.20 - 14.00	B						
		13.20 - 14.00	LB						
		13.20 - 14.00	SPT						
		13.20	SPT						
		14.00	ES	N=26 (4,3/5,6,7,8)					14
		14.00 - 14.30	B						
		14.00 - 14.30	LB						
		14.00 - 14.65	D						
		14.00	SPT						
	14.20	ES							
	14.30 - 15.50	C							
	14.40 - 14.50	D							
	14.50	ES							
	15.40 - 15.50	D							
	15.40 - 15.50	D	HVP=5.0	15					
	15.50 - 15.95	U							
	15.50 - 16.50	LB							
	15.80 - 15.90	D							
	15.80								
	16.30 - 16.40	D	HVP=45.0	16					
	16.30								
	16.50 - 17.00	C							
	16.50	SPT							
	16.50	SPT							
	17.00 - 17.70	C	N=50 (25 for 130mm/50 for 170mm)	17					
	17.70	D							
	17.70 - 18.20	C							
	17.70	SPT							
	18.20 - 18.90	C							
			N=50 (4,9/50 for 205mm)	18					
				18.90	-0.99		<u>Borehole collapsed at 18.50m.</u> End of Borehole at 18.900m	19	
								20	

Hole Diameter

Casing Diameter

Chiselling

Inclination and Orientation

Depth Base

Diameter

Depth Base

Diameter

Depth Top

Depth Base

Duration

Tool

Depth Top

Depth Base

Inclination

Orientation

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. No water strike recorded due to flushing at 5.70m bgl. Water level shown was recorded at start of shift on 03/11/2022.

Coring information: 14.30-15.50m (TCR=100%); 15.50-15.95m (No recovery); 16.50-17.00m (TCR=100%); 17.00-17.70m (TCR=65%); 17.70-18.20m (TCR=100%) and 18.20-18.90m (TCR=57%)



Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd			
Project No. : C1870		Crew Name: JC (Geotechnical Engineering Ltd)		Drilling Equipment: Comacchio 305	
Borehole Number ENBH5	Hole Type BH	Level 19.87m AoD	Logged By RS	Scale 1:50	Page Number Sheet 1 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 - 0.50	B		0.15 0.22	19.72 19.65		MADE GROUND comprising black and grey mottled brown sandy angular to sub-angular fine to coarse GRAVEL of sandstone with occasional fragments of brick and slag.	
		0.60 - 0.80	B		0.60	19.27		MADE GROUND comprising moderately weak grey mottled orangish brown weakly cemented CONCRETE.	1
		1.20 - 1.65	D					MADE GROUND comprising dark grey, brown and orangish brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of sandstone with fragments of brick, ash and occasional slag.	
		1.20 - 2.70	B						
		1.20 - 2.70	LB						
		1.20	SPT	N=5 (1,2/1,2,1,1)				MADE GROUND comprising black mottled orangish brown and yellowish brown slightly sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag and clinker. Very slight hydrocarbon odour.	2
		2.70 - 3.15	D						
		2.70 - 4.20	B						
		2.70 - 4.20	B						
		2.70	SPT	N=2 (1,1/0,1,0,1)					3
		4.00	ES						4
		4.20 - 4.65	D						
		4.20 - 5.70	B						
		4.20 - 5.70	LB						
		4.20	SPT	N=2 (1,1/1,1,0,0)					5
		5.70 - 6.15	D						
		5.70 - 7.20	B						
		5.70 - 7.20	LB						
		5.70	SPT	N=3 (1,1/1,1,1,0)					6
		7.20 - 7.65	D						
		7.20 - 8.70	B						7
		7.20 - 8.70	LB						
		7.20 - 8.70	LB						
		7.20	SPT	N=4 (1,2/1,1,1,1)					8
		8.70 - 10.20	B						
		8.70 - 10.20	LB						
		8.70 - 9.15	D						
		8.70	SPT	N=7 (2,1/1,2,1,3)					9
		9.00	ES					Slight hydrocarbon odour and slight oily sheen observed at 8.60-13.10m.	
		10.00	ES						10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. Water strike not noted due to flushing carried out below 2.70m bgl; borehole was noted as dry above this level.
Coring information: 13.40-14.90m (TCR=74%); 14.90-16.40m (TCR=47%); 16.40-17.90m (TCR=43%) and 17.90-19.40m (TCR=33%).

Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd			
Project No. : C1870		Crew Name: JC (Geotechnical Engineering Ltd)		Drilling Equipment: Comacchio 305	
Borehole Number ENBH5	Hole Type BH	Level 19.87m AoD	Logged By RS	Scale 1:50	Page Number Sheet 2 of 2

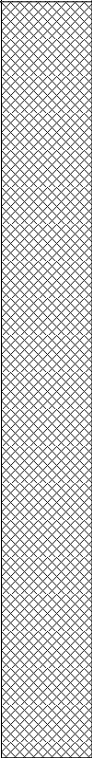
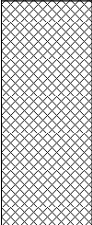
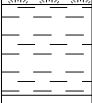
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description							
		Depth (m)	Type	Results											
		10.20 - 10.65 10.20 - 11.70 10.20 - 11.70 10.20	D B LB SPT	N=4 (1,1/1,1,1,1)	13.10	6.77		MADE GROUND comprising black mottled orangish brown and yellowish brown slightly sandy angular to sub-angular fine to coarse GRAVEL of ash with occasional fragments of slag and clinker. Very slight hydrocarbon odour.	11						
		11.00	ES												
		11.70 - 12.15 11.70 - 13.20 11.70 - 13.20 11.70 12.00	D B LB SPT ES	N=7 (2,8/1,2,2,2)									12		
		13.00	ES										13		
		13.20	ES												
		13.20 - 13.30 13.20 - 13.40 13.20 - 13.65 13.20 13.40 - 14.90	D LB D SPT C	N=23 (2,4/4,6,5,8)								Firm brown and yellowish brown spongy fibrous PEAT with occasional decomposed plant material (<20mm diameter). <i>Slight chemical / hydrocarbon odour at 13.10-14.40m.</i>	14		
		14.40 - 14.90 14.50	B ES												
		14.60 - 14.70	D												
		14.90 - 15.35 14.90 - 16.40 14.90 15.00 - 15.20	D C SPT D	N=8 (1,0/1,2,2,3)					15.00 15.20	4.87 4.67				Soft orangish brown mottled grey slightly gravelly silty CLAY. Gravel is sub-angular fine to medium of sandstone. Orangish brown and grey clayey sandy angular to sub-angular fine to coarse GRAVEL of sandstone.	15
		16.40 - 17.90 16.40	C SPT	N=50 (4, 14/50 for 230mm)					16.20	3.67					
17.90 - 19.40 17.90	C SPT	N=49 (1,3/5,11,15,18)				Brown and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content. Cobbles are sub-rounded of sandstone. <i>Fines flushed out.</i>	17								

[illegible]

Remarks

Borehole was drilled using dynamic sampling and rotary coring method. Hand shear values shown are peak values. Water strike not noted due to flushing carried out below 2.70m bgl; borehole was noted as dry above this level.
Coring information: 13.40-14.90m (TCR=74%); 14.90-16.40m (TCR=47%); 16.40-17.90m (TCR=43%) and 17.90-19.40m (TCR=33%).



ENGLOBE		Percussion Drilling Log									
Project Name: Coed Darcy Tip					Client: St Modwen				Date:		
Location: Urban Village, Neath					Contractor: Geotechnical Engineering Ltd				Co-ords: E270248.75 N195553.54		
Project No. : C1870					Crew Name:				Drilling Equipment:		
Borehole Number ENBH06a		Hole Type BH		Level 9.38m AoD		Logged By		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					5.00	4.38		MADE GROUND: Soft dark grey/black clayey, sandy GRAVEL. Fine to coarse sub angular coarse gravel of sandstone, angular fine gravel of ash/clinker and rare coarse gravel of brick. Free oil and hydrocarbon odour (1ppm TVOC) from 0.6m.		1	
										2	
										3	
										4	
					6.50	2.88		MADE GROUND: Soft dark grey CLAY		5	
										6	
					7.00	2.38		MADE GROUND: Black fine to medium gravel of ash/clinker with hydrocarbon odour		7	
										8	
					9.40	-0.02		Firm spongy brown PEAT		9	
										10	
10.00	-0.62		Firm grey CLAY								
			End of Borehole at 10.000m								
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											

Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd		Co-ords: E270481.29 N195408.07	
Project No. : C1870		Crew Name:		Drilling Equipment:	
Borehole Number ENBH10	Hole Type BH	Level 11.10m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05	11.05		Grass over topsoil	
					0.60	10.50		MADE GROUND: Cobbles and coarse subangular to subrounded gravel of sandstone	
					1.10	10.00		MADE GROUND: Dense brown/dark grey silt, sand and fine to coarse angular to subrounded gravel. Gravel of ash, brick, slag and sandstone. Slight hydrocarbon odour and staining	1
					1.40	9.70		Brown clayey gravelly SAND	
								Dense grey/brown sandy GRAVEL, sub-rounded coarse gravel and cobbles of sandstone	2
					3.00	8.10		End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd		Co-ords: E270558.37 N195572.74	
Project No. : C1870		Crew Name:		Drilling Equipment:	
Borehole Number ENBH11	Hole Type BH	Level 12.90m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								MADE GROUND: Brown/grey silt, sand, gravles and cobbles, brick fragments, ash/clinker, slag and concrete	1
					3.20	9.70		Dense black pitch/bitumen	2
					3.60	9.30		Firm grey silty CLAY	3
					4.30	8.60		Brown gravelly silty SAND	4
					6.00	6.90		End of Borehole at 6.000m	5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



Percussion Drilling Log

Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd		Co-ords: E270412.30 N195489.60	
Project No. : C1870		Crew Name:		Drilling Equipment:	
Borehole Number ENBH9	Hole Type BH	Level 11.21m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.35	10.86		MADE GROUND: Brick fragments, ashy sand, gravel and cobbles andgular to sub-angular	
								MADE GROUND: Cobbles of brick, slag and sandstone with a concrete slab 0.2 thick at aprox 2 m. Very oily from approx 2.5 m depth	1
									2
									3
					4.00	7.21		MADE GROUND: Dark grey clay with sand and fine to medium gravels. Gravels are subrounded to subangular brick, ash, slag, clinker and sandstone	4
									5
					6.00	5.21		Dense brown silty PEAT	6
									7
					7.50	3.71		Dense grey fine SAND	
					8.00	3.21		Soft brown silty sandy PEAT	8
					8.50	2.71		Dense grey/brown silty gravelly SAND	
					9.00	2.21		End of Borehole at 9.000m	9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Percussion Drilling Log

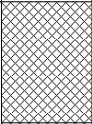
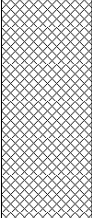
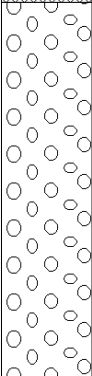
Project Name: Coed Darcy Tip		Client: St Modwen		Date:	
Location: Urban Village, Neath		Contractor: Geotechnical Engineering Ltd		Co-ords: E270342.95 N195465.10	
Project No. : C1870		Crew Name:		Drilling Equipment:	
Borehole Number ENBH8	Hole Type BH	Level 10.62m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	10.52		MADE GROUND: Hand pit to 0.1 m brick obstruction MADE GROUND: Large cobbles including reinforced concrete encountered at 3 m. Very oily at approx 2.5 m	1
					3.40	7.22		MADE GROUND: Dark grey soft silt/clay with some fine to coarse, angular to sub-angular gravel of concrete. Strong hydrocarbon odour	4
					6.00	4.62		Dense brown fibrous PEAT with roots and decomposed branches	6
					8.50	2.12		Dark grey dense fine SAND. Detail: band between 9 to 9.5 m of very silty grey/brown dense clayey, gravelly fine to medium SAND with rare root/branch. Gravels are coarse sub-rounded sandstone	9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

ENGLOBE 		Percussion Drilling Log									
Project Name: Coed Darcy Tip				Client: St Modwen				Date:			
Location: Urban Village, Neath				Contractor: Geotechnical Engineering Ltd				Co-ords: E270342.95 N195465.10			
Project No. : C1870				Crew Name:				Drilling Equipment:			
Borehole Number ENBH8		Hole Type BH		Level 10.62m AoD		Logged By		Scale 1:50		Page Number Sheet 2 of 2	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					10.50	0.12		Dark grey dense fine SAND. Detail: band between 9 to 9.5 m of very silty grey/brown dense clayey, gravelly fine to medium SAND with rare root/branch. Gravels are coarse sub-rounded sandstone			
								End of Borehole at 10.500m		11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											

ENGLOBE 		Percussion Drilling Log											
Project Name: Coed Darcy Tip				Client: St Modwen				Date:					
Location: Urban Village, Neath				Contractor: Geotechnical Engineering Ltd				Co-ords: E270253.51 N195499.89					
Project No. : C1870				Crew Name:				Drilling Equipment:					
Borehole Number ENBH7		Hole Type BH		Level 9.37m AoD		Logged By		Scale 1:50		Page Number Sheet 1 of 1			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description					
		Depth (m)	Type	Results									
					0.80	8.57		MADE GROUND:		1			
					MADE GROUND: no returns								
					3.00	6.37		MADE GROUND: not much return, but included dark grey sandy gravelly clay, cobble jammed in cutting shoe @ approx 4 m.		3			
					4.50	4.87		Rotary drilled through large grey sandstone(?) boulder		5			
					7.00	2.37		PEAT suspected from 7 m		7			
										8			
										9			
										10			
								10.00	-0.63		End of Borehole at 10.000m		
					Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation		
Remarks													

Appendix C

Chemical Analysis



eNGLOBE

Steve Gronow
Englobe
Columbus House
Greenmeadow Springs
Cardiff
CF15 7NE

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: steve.gronow@celtic-ltd.com

Analytical Report Number : 22-94200

Project / Site name:	Coed Darcy	Samples received on:	03/11/2022
Your job number:	C1870	Samples instructed on/ Analysis started on:	03/11/2022
Your order number:	83764	Analysis completed by:	20/11/2022
Report Issue Number:	1	Report issued on:	21/11/2022
Samples Analysed:	8 soil samples		


Signed:

Joanna Wawrzeczko
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-94200

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	34	32	38	33	40
Total mass of sample received	kg	0.001	NONE	0.9	0.9	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.9	7.4	-	-	-
Total Cyanide	mg/kg	1	MCERTS	13	8.9	-	-	-
Complex Cyanide	mg/kg	1	MCERTS	13	8.9	-	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3600	290	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.8	0.14	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1810	144	-	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	22	20	-	-	-
Elemental Sulphur	mg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Ammonium - Exchangeable as NH4	mg/kg	0.5	MCERTS	1.2	< 0.5	-	-	-
Loss on Ignition @ 450oC	%	0.2	MCERTS	15.8	16.9	-	-	-

Phenols by HPLC

Catechol	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Resorcinol	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Cresols (o-, m-, p-)	mg/kg	0.3	NONE	< 0.30	< 0.30	-	-	-
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	NONE	< 0.20	< 0.20	-	-	-
2-Isopropylphenol	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Phenol	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Trimethylphenol (2,3,5-)	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Total Xylenols and Ethylphenols	mg/kg	0.3	NONE	< 0.30	< 0.30	-	-	-

Total Phenols

Total Phenols (HPLC)	mg/kg	1.3	NONE	< 1.3	< 1.3	-	-	-
----------------------	-------	-----	------	-------	-------	---	---	---

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.14	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	NONE	0.23	0.17	-	-	-
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	-	-	-
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	NONE	0.57	0.25	-	-	-
Anthracene	mg/kg	0.05	NONE	0.71	0.51	-	-	-
Fluoranthene	mg/kg	0.05	NONE	0.46	0.15	-	-	-
Pyrene	mg/kg	0.05	NONE	0.64	0.24	-	-	-
Benzo(a)anthracene	mg/kg	0.05	NONE	0.27	0.17	-	-	-
Chrysene	mg/kg	0.05	NONE	0.66	0.21	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.34	0.14	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.13	0.06	-	-	-
Benzo(a)pyrene	mg/kg	0.05	NONE	0.22	< 0.05	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.38	0.23	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	0.76	0.66	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	5.51	2.79	-	-	-
-----------------------------	-------	-----	------	------	------	---	---	---

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	31	26	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.9	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.8	2	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	2.3	< 1.8	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	33	-	-	-
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	13	11	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	150	110	-	-	-
Germanium (aqua regia extractable)	mg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	240	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.1	0.7	-	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	2.8	2.4	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	45	39	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	30	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	700	530	-	-	-

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	15	2.4	14	1.6	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	520	100	270	42	520
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	1400	530	600	140	1100
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	2500	1100	1000	430	3000
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	4400	1700	1900	610	4600

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.38
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	16	< 1.0	4.9	< 1.0	160
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	130	30	160	5.6	1500
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	960	410	430	63	3600
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	3300	1900	740	510	5400
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	4400	2300	1300	580	11000

VOCs

Chloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0

Analytical Report Number: 22-94200

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	-	-	-	ND	ND
-------------------------	--	-----	------	---	---	---	----	----

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	1.1	0.4
Phenol	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	0.8	1.9
1,2-Dichlorobenzene	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	-	-	-	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	-	-	-	1.2	0.42
2,4-Dichlorophenol	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	15	1.6
2-Chloronaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	-	-	-	< 0.05	0.27
Acenaphthene	mg/kg	0.05	NONE	-	-	-	< 0.05	0.28
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	-	-	-	< 0.05	0.26
Azobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	-	-	-	3	1.5
Anthracene	mg/kg	0.05	NONE	-	-	-	0.54	1.1
Carbazole	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	-	-	-	0.65	0.5
Pyrene	mg/kg	0.05	NONE	-	-	-	3.3	1.8
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	-	-	-	0.8	2
Chrysene	mg/kg	0.05	NONE	-	-	-	1.9	2.6
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	-	-	0.78	0.38
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	-	-	0.31	0.24
Benzo(a)pyrene	mg/kg	0.05	NONE	-	-	-	0.56	0.28
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	-	-	0.43	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	-	-	< 0.05	0.13
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	-	-	1.5	0.19

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485471	2485472	2485473	2485474	2485475
Sample Reference				SP-E4-S1	SP-E4-S2	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	5.70-5.70	9.00-9.00	10.20-10.20
Date Sampled				02/11/2022	02/11/2022	02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	Naphthalene, substituted	Hexadecane
SVOC % Match	%	N/A	NONE	-	-	-	98	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		
SVOCs TICs Compound Name		N/A	NONE	-	-	-		
SVOC % Match	%	N/A	NONE	-	-	-		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 52	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 101	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 138	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 153	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 180	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	NONE	< 0.007	< 0.007	-	-	-
------------	-------	-------	------	---------	---------	---	---	---

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-94200

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	31	34	30
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3

Asbestos in Soil	Type	N/A	ISO 17025	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-
Elemental Sulphur	mg/kg	5	NONE	-	-	-
Ammonium - Exchangeable as NH ₄	mg/kg	0.5	MCERTS	-	-	-
Loss on Ignition @ 450oC	%	0.2	MCERTS	-	-	-

Phenols by HPLC

Catechol	mg/kg	0.1	NONE	-	-	-
Resorcinol	mg/kg	0.1	NONE	-	-	-
Cresols (o-, m-, p-)	mg/kg	0.3	NONE	-	-	-
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	NONE	-	-	-
2-Isopropylphenol	mg/kg	0.1	NONE	-	-	-
Phenol	mg/kg	0.1	NONE	-	-	-
Trimethylphenol (2,3,5-)	mg/kg	0.1	NONE	-	-	-
Total Xylenols and Ethylphenols	mg/kg	0.3	NONE	-	-	-

Total Phenols

Total Phenols (HPLC)	mg/kg	1.3	NONE	-	-	-
----------------------	-------	-----	------	---	---	---

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Speciated PAHs						
Naphthalene	mg/kg	0.05	NONE	-	-	-
Acenaphthylene	mg/kg	0.05	NONE	-	-	-
Acenaphthene	mg/kg	0.05	NONE	-	-	-
Fluorene	mg/kg	0.05	NONE	-	-	-
Phenanthrene	mg/kg	0.05	NONE	-	-	-
Anthracene	mg/kg	0.05	NONE	-	-	-
Fluoranthene	mg/kg	0.05	NONE	-	-	-
Pyrene	mg/kg	0.05	NONE	-	-	-
Benzo(a)anthracene	mg/kg	0.05	NONE	-	-	-
Chrysene	mg/kg	0.05	NONE	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	-	-
Benzo(a)pyrene	mg/kg	0.05	NONE	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	-	-
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Germanium (aqua regia extractable)	mg/kg	5	NONE	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-

Analytical Report Number: 22-94200

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Monoaromatics & Oxygenates						
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	37
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	110
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	710
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	19	1.1	1.7
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	210	13	78
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	1500	420	1500
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	2500	950	1200
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	3300	1600	2500
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	7600	3000	5300

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	53	9.3	430
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	1100	250	6000
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	2600	680	6500
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	3700	1200	6700
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	7500	2200	20000

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-94200

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	37
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	110
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	710
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	170
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	6000
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	800
sec-Butylbenzene	µg/kg	1	NONE	230	< 1.0	140
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0	< 1.0	120
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	ND	ND
-------------------------	--	-----	------	----	----	----

SVOCs

Aniline	mg/kg	0.1	NONE	0.6	0.7	0.7
Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	0.4	0.9	0.6
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	3	1.1	7.4
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	8.1	2.5	21
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	0.24	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	5.2	1.3	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	14	3.4	5.8
Anthracene	mg/kg	0.05	NONE	2.7	0.85	< 0.05
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	NONE	3.7	0.75	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05

Analytical Report Number: 22-94200
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2485476	2485477	2485478
Sample Reference				ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				11.20-11.20	12.20-12.20	14.00-14.00
Date Sampled				02/11/2022	02/11/2022	02/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
SVOCs TICs						
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 1,6,7-trimethyl-	Naphthalene, 1,6,7-trimethyl-	Hexacosane
SVOC % Match	%	N/A	NONE	98	98	99
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2,3,6-trimethyl-	Benzene, 1,4-diethyl-	Heptacosane
SVOC % Match	%	N/A	NONE	97	97	99
SVOCs TICs Compound Name		N/A	NONE	Benzene, 1,2-diethyl-	9-Octadecenamide, (Z)-	Hentriacontane
SVOC % Match	%	N/A	NONE	96	97	99
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 1,6-dimethyl-	Decahydro-4,4,8,9,10-pentamethylnaphthalene	Heptacosane, 1-chloro-
SVOC % Match	%	N/A	NONE	96	96	99
SVOCs TICs Compound Name		N/A	NONE	Hexadecane, 2,6,10,14-tetramethyl-	Naphthalene, 2,6-dimethyl-	Hexatriacontane
SVOC % Match	%	N/A	NONE	96	96	99
SVOCs TICs Compound Name		N/A	NONE	Benzene, 1-ethyl-2-methyl-	Naphthalene, 2,3,6-trimethyl-	Eicosane
SVOC % Match	%	N/A	NONE	95	96	98
SVOCs TICs Compound Name		N/A	NONE	Benzene, 1-ethyl-3,5-dimethyl-		Tetracosane
SVOC % Match	%	N/A	NONE	95		98
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2,7-dimethyl-		Triacotane
SVOC % Match	%	N/A	NONE	95		98
SVOCs TICs Compound Name		N/A	NONE	Heptadecane		Tricosane
SVOC % Match	%	N/A	NONE	95		98
SVOCs TICs Compound Name		N/A	NONE			Benzene, 1,2,3-trimethyl-
SVOC % Match	%	N/A	NONE			97

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	NONE	-	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	NONE	-	-	-
------------	-------	-------	------	---	---	---

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-94200

Project / Site name: Coed Darcy

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2485471	SP-E4-S1	None Supplied	None Supplied	Brown loam and clay with vegetation and gravel
2485472	SP-E4-S2	None Supplied	None Supplied	Brown loam and sand with vegetation and gravel.
2485473	ENBH4	None Supplied	5.70-5.70	Black gravelly sand.
2485474	ENBH4	None Supplied	9.00-9.00	Black gravelly sand.
2485475	ENBH4	None Supplied	10.20-10.20	Black gravelly sand.
2485476	ENBH4	None Supplied	11.20-11.20	Black gravelly sand.
2485477	ENBH4	None Supplied	12.20-12.20	Black gravelly sand.
2485478	ENBH4	None Supplied	14.00-14.00	Black gravelly sand.

Analytical Report Number : 22-94200

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	In-house method	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE

Analytical Report Number : 22-94200

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Exchangeable Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	NONE
Exotic Metals Aqua Regia Extractable	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics

Analytical Report Number : 22-94200

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
AR	Aromatics				
#1	EH_2D_Total but with humics mathematically subtracted				
#2	EH_2D_Total but with fatty acids mathematically subtracted				
-	Operator - understore to separate acronyms (exception for +)				
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total				

Steve Gronow
Englobe
Columbus House
Greenmeadow Springs
Cardiff
CF15 7NE

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: steve.gronow@celtic-ltd.com

Analytical Report Number : 22-94475

Project / Site name:	Coed Darcy	Samples received on:	04/11/2022
Your job number:	C1870	Samples instructed on/ Analysis started on:	04/11/2022
Your order number:	83764	Analysis completed by:	23/11/2022
Report Issue Number:	1	Report issued on:	23/11/2022
Samples Analysed:	11 soil samples		

Signed:

Izabela Wójcik

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486844	2486845	2486846	2486847	2486848
Sample Reference				SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	46	21	38	32	23
Total mass of sample received	kg	0.001	NONE	0.9	0.9	0.9	0.9	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	SZS	SZS	SZS	SZS	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	6.5	5.6	6.3	-
Total Cyanide	mg/kg	1	MCERTS	2.1	8.6	8.3	2.5	-
Complex Cyanide	mg/kg	1	MCERTS	2.1	< 1.0	1.4	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	7.6	6.9	4.1	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	2.1	1.3	0.84	1.2	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	4100	2600	1700	2300	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	2060	1320	841	1170	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	74	36	20	65	-
Elemental Sulphur	mg/kg	5	NONE	3200	< 5.0	980	< 5.0	-
Ammonium - Exchangeable as NH4	mg/kg	0.5	MCERTS	21	5	9.1	22	-
Loss on Ignition @ 450oC	%	0.2	MCERTS	25.9	15.9	18	17.8	-

Phenols by HPLC

Catechol	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Resorcinol	mg/kg	0.1	NONE	0.71	< 0.10	< 0.10	< 0.10	-
Cresols (o-, m-, p-)	mg/kg	0.3	NONE	< 0.30	< 0.30	< 0.30	< 0.30	-
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	-
2-Isopropylphenol	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Phenol	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Trimethylphenol (2,3,5-)	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Total Xylenols and Ethylphenols	mg/kg	0.3	NONE	< 0.30	< 0.30	< 0.30	< 0.30	-

Total Phenols

Total Phenols (HPLC)	mg/kg	1.3	NONE	< 1.3	< 1.3	< 1.3	< 1.3	-
----------------------	-------	-----	------	-------	-------	-------	-------	---

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486844	2486845	2486846	2486847	2486848
Sample Reference				SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)								
	Units	Limit of detection	Accreditation Status					

Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.39	< 0.05	0.15	< 0.05	-
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	NONE	1.6	< 0.05	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	NONE	0.69	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	NONE	5.2	< 0.05	< 0.05	< 0.05	-
Pyrene	mg/kg	0.05	NONE	6.2	< 0.05	< 0.05	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	NONE	2	< 0.05	< 0.05	< 0.05	-
Chrysene	mg/kg	0.05	NONE	2.1	< 0.05	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	1.8	< 0.05	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	1.7	< 0.05	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	NONE	2.5	< 0.05	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	1.4	< 0.05	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.29	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	2.2	< 0.05	< 0.05	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	28.1	< 0.80	< 0.80	< 0.80	-
-----------------------------	-------	-----	------	------	--------	--------	--------	---

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	48	25	25	32	-
Boron (water soluble)	mg/kg	0.2	MCERTS	4.5	1.2	0.9	0.9	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.8	1.7	1.9	2.7	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	71	23	41	29	-
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	16	9.7	10	15	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	280	82	110	130	-
Germanium (aqua regia extractable)	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	380	200	250	320	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.7	1	0.9	1.1	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	4	2.2	2.5	2.9	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	64	42	39	46	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.3	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	69	29	32	39	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	870	440	490	580	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number	2486844	2486845	2486846	2486847	2486848
Sample Reference	SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	2.9	< 1.0	< 1.0	3.5	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	360	380	430	140	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	1200	1300	1700	810	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	1900	3500	3100	1800	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	3500	5200	5200	2800	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	45	81	83	29	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	570	1100	960	450	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	1600	5200	3400	2100	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	2200	6400	4400	2600	-

VOCs

Chloromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Bromomethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trichloromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Benzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Tetrachloromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Dibromomethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Bromodichloromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Toluene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Dibromochloromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Chlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
p & m-Xylene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Styrene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486844	2486845	2486846	2486847	2486848
Sample Reference				SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
o-Xylene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Isopropylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Bromobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
n-Propylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Butylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	-	ND	ND	-	ND
VOC % Match	%	N/A	NONE	-			-	

SVOCs

Aniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Phenol	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	0.3
1,2-Dichlorobenzene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Isophorone	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Naphthalene	mg/kg	0.05	NONE	-	< 0.05	0.15	-	0.14
2,4-Dichlorophenol	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	0.4	-	0.2
2-Chloronaphthalene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486844	2486845	2486846	2486847	2486848
Sample Reference				SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Acenaphthene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Fluorene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Azobenzene	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Phenanthrene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	0.18
Anthracene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	0.46
Carbazole	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Fluoranthene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Pyrene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	< 0.3	< 0.3	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Chrysene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	< 0.05	< 0.05	-	< 0.05

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	ND	ND	-	ND
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	
SVOCs TICs Compound Name		N/A	NONE	-			-	
SVOC % Match	%	N/A	NONE	-			-	

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486844	2486845	2486846	2486847	2486848
Sample Reference				SP-E5-S8	SP-E4-S3	SPE-3-S1	SP-E2-S1	SP-E2-S2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	NONE	< 0.007	< 0.007	< 0.007	< 0.007	-
------------	-------	-------	------	---------	---------	---------	---------	---

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	21	36	30	36	56
Total mass of sample received	kg	0.001	NONE	1.2	0.9	0.9	0.9	0.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	SZS	SZS	SZS	SZS	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8	7.5	7.9	7.3	-
Total Cyanide	mg/kg	1	MCERTS	4	6.5	7.2	8	-
Complex Cyanide	mg/kg	1	MCERTS	4	5.3	5.6	6.3	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	1.2	1.7	1.7	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	980	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.49	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	489	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	0.52	0.25	0.32	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	1000	490	650	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	525	247	323	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	71	86	73	94	-
Elemental Sulphur	mg/kg	5	NONE	2100	3600	2900	3400	-
Ammonium - Exchangeable as NH4	mg/kg	0.5	MCERTS	280	380	280	260	-
Loss on Ignition @ 450oC	%	0.2	MCERTS	27.6	23	12.5	21.4	-

Phenols by HPLC

Catechol	mg/kg	0.1	NONE	< 0.10	< 0.10	0.97	1.4	-
Resorcinol	mg/kg	0.1	NONE	< 0.10	0.92	< 0.10	< 0.10	-
Cresols (o-, m-, p-)	mg/kg	0.3	NONE	< 0.30	< 0.30	< 0.30	< 0.30	-
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	-
2-Isopropylphenol	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Phenol	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Trimethylphenol (2,3,5-)	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Total Xylenols and Ethylphenols	mg/kg	0.3	NONE	< 0.30	< 0.30	< 0.30	< 0.30	-

Total Phenols

Total Phenols (HPLC)	mg/kg	1.3	NONE	< 1.3	< 1.3	< 1.3	1.4	-
----------------------	-------	-----	------	-------	-------	-------	-----	---

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated PAHs								
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	NONE	1.5	1.2	1.3	0.94	-
Anthracene	mg/kg	0.05	NONE	1.1	1.2	1.1	0.86	-
Fluoranthene	mg/kg	0.05	NONE	1	0.98	1.3	1.2	-
Pyrene	mg/kg	0.05	NONE	2.7	2.8	2.8	2.8	-
Benzo(a)anthracene	mg/kg	0.05	NONE	2.5	2.5	0.86	1.4	-
Chrysene	mg/kg	0.05	NONE	0.67	1	2.8	0.81	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.81	0.65	1	0.8	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.65	0.33	0.2	0.34	-
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	0.85	0.95	0.9	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.72	0.88	0.74	0.71	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	1.2	1.4	1.5	1.2	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	13.9	13.7	14.6	12	-
-----------------------------	-------	-----	------	------	------	------	----	---

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	27	35	16	30	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	3	1	1.5	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.1	3.1	1.2	2.7	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	32	21	28	-
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	9.5	13	10	12	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	150	160	64	150	-
Germanium (aqua regia extractable)	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	280	330	130	300	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	2	1.6	0.8	1.3	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	2.6	3.2	1.5	3.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	37	49	37	45	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	55	56	30	54	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	590	740	340	620	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	21
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	63
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	55
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	130
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	130
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	< 1.0	2.2	1.6	< 1.0	3.6
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	590	860	540	970	220
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	2800	2700	1700	2700	170
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	4500	4200	2600	4100	130
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	7900	7800	4800	7800	510

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.021
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.063
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.32
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	62
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	300	390	130	460	2200
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	2600	2200	1200	2800	2100
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	6200	5400	2700	6500	1800
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	9100	7900	4000	9800	6200

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	-	-	-	21
Tetrachloromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	-	-	-	63
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	55
p & m-Xylene	µg/kg	1	NONE	< 1.0	-	-	-	130
Styrene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
o-Xylene	µg/kg	1	NONE	< 1.0	-	-	-	130
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	15
Bromobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	720
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	140
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	-	-	-	ND
VOC % Match	%	N/A	NONE		-	-	-	

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Phenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	-	-	-	3.7
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	-	-	-	9.3
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	27
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	-	-	-	< 0.05

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Acenaphthene	mg/kg	0.05	NONE	< 0.05	-	-	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Fluorene	mg/kg	0.05	NONE	< 0.05	-	-	-	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Phenanthrene	mg/kg	0.05	NONE	1.5	-	-	-	8.7
Anthracene	mg/kg	0.05	NONE	1.1	-	-	-	1.2
Carbazole	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	NONE	1	-	-	-	1.1
Pyrene	mg/kg	0.05	NONE	2.7	-	-	-	1.1
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	2.5	-	-	-	0.41
Chrysene	mg/kg	0.05	NONE	0.67	-	-	-	0.72
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.81	-	-	-	0.42
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.65	-	-	-	0.15
Benzo(a)pyrene	mg/kg	0.05	NONE	1.1	-	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	0.72	-	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	1.2	-	-	-	< 0.05

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND	-	-	-	1-Eicosene
SVOC % Match	%	N/A	NONE		-	-	-	99
SVOCs TICs Compound Name		N/A	NONE		-	-	-	Docosanoic acid
SVOC % Match	%	N/A	NONE		-	-	-	99
SVOCs TICs Compound Name		N/A	NONE		-	-	-	Pentatriacontane
SVOC % Match	%	N/A	NONE		-	-	-	99
SVOCs TICs Compound Name		N/A	NONE		-	-	-	.gamma.-Sitosterol
SVOC % Match	%	N/A	NONE		-	-	-	99
SVOCs TICs Compound Name		N/A	NONE		-	-	-	Octadecanoic acid
SVOC % Match	%	N/A	NONE		-	-	-	98
SVOCs TICs Compound Name		N/A	NONE		-	-	-	2-Pentacosanone
SVOC % Match	%	N/A	NONE		-	-	-	98
SVOCs TICs Compound Name		N/A	NONE		-	-	-	Octacosane
SVOC % Match	%	N/A	NONE		-	-	-	98
SVOCs TICs Compound Name		N/A	NONE		-	-	-	Tetracosane
SVOC % Match	%	N/A	NONE		-	-	-	97

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486849	2486850	2486851	2486852	2486853
Sample Reference				SP-E7-S1	SP-E7-S2	SP-E7-S3	SP-E7-S4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	14.20-14.20
Date Sampled				03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	NONE	0.22	< 0.001	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	NONE	0.41	< 0.001	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	0.082	< 0.001	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	NONE	0.11	< 0.001	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	NONE	0.58	< 0.001	< 0.001	< 0.001	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	NONE	1.4	< 0.007	< 0.007	< 0.007	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	66
Total mass of sample received	kg	0.001	NONE	0.4

Asbestos in Soil	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-
Total Cyanide	mg/kg	1	MCERTS	-
Complex Cyanide	mg/kg	1	MCERTS	-
Free Cyanide	mg/kg	1	MCERTS	-
Thiocyanate as SCN	mg/kg	5	NONE	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-
Elemental Sulphur	mg/kg	5	NONE	-
Ammonium - Exchangeable as NH ₄	mg/kg	0.5	MCERTS	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-

Phenols by HPLC

Catechol	mg/kg	0.1	NONE	-
Resorcinol	mg/kg	0.1	NONE	-
Cresols (o-, m-, p-)	mg/kg	0.3	NONE	-
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	NONE	-
2-Isopropylphenol	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.1	NONE	-
Trimethylphenol (2,3,5-)	mg/kg	0.1	NONE	-
Total Xylenols and Ethylphenols	mg/kg	0.3	NONE	-

Total Phenols

Total Phenols (HPLC)	mg/kg	1.3	NONE	-
----------------------	-------	-----	------	---

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Speciated PAHs				
Naphthalene	mg/kg	0.05	NONE	-
Acenaphthylene	mg/kg	0.05	NONE	-
Acenaphthene	mg/kg	0.05	NONE	-
Fluorene	mg/kg	0.05	NONE	-
Phenanthrene	mg/kg	0.05	NONE	-
Anthracene	mg/kg	0.05	NONE	-
Fluoranthene	mg/kg	0.05	NONE	-
Pyrene	mg/kg	0.05	NONE	-
Benzo(a)anthracene	mg/kg	0.05	NONE	-
Chrysene	mg/kg	0.05	NONE	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-
Benzo(a)pyrene	mg/kg	0.05	NONE	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	-
-----------------------------	-------	-----	------	---

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Germanium (aqua regia extractable)	mg/kg	5	NONE	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	140
Toluene	µg/kg	1	NONE	27
Ethylbenzene	µg/kg	1	NONE	< 1.0
p & m-xylene	µg/kg	1	NONE	< 1.0
o-xylene	µg/kg	1	NONE	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	7.9
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	36
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	35
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	80

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	0.14
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	0.027
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	11
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	25
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	51
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	460
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	550

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0
Benzene	µg/kg	1	NONE	140
Tetrachloromethane	µg/kg	1	NONE	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0
Toluene	µg/kg	1	NONE	27
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0
p & m-Xylene	µg/kg	1	NONE	< 1.0
Styrene	µg/kg	1	NONE	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0

Analytical Report Number: 22-94475
Project / Site name: Coed Darcy
Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
o-Xylene	µg/kg	1	NONE	< 1.0
1,1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	59
tert-Butylbenzene	µg/kg	1	NONE	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	90
VOC % Match	%	N/A	NONE	substitute of thiophene

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1
Phenol	mg/kg	0.2	NONE	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	1.8
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3
Naphthalene	mg/kg	0.05	NONE	16
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	8.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	1.1

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Acenaphthene	mg/kg	0.05	NONE	1.8
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	1.9
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2
Fluorene	mg/kg	0.05	NONE	2.5
Azobenzene	mg/kg	0.3	NONE	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3
Phenanthrene	mg/kg	0.05	NONE	6
Anthracene	mg/kg	0.05	NONE	1.8
Carbazole	mg/kg	0.3	NONE	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3
Fluoranthene	mg/kg	0.05	NONE	7.3
Pyrene	mg/kg	0.05	NONE	7
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	5.9
Chrysene	mg/kg	0.05	NONE	5.9
Benzo(b)fluoranthene	mg/kg	0.05	NONE	7.6
Benzo(k)fluoranthene	mg/kg	0.05	NONE	3.3
Benzo(a)pyrene	mg/kg	0.05	NONE	2.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	3.2
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	1.1
Benzo(ghi)perylene	mg/kg	0.05	NONE	2.9

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	
SVOCs TICs Compound Name		N/A	NONE	
SVOC % Match	%	N/A	NONE	

Analytical Report Number: 22-94475

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2486854
Sample Reference				ENBH4
Sample Number				None Supplied
Depth (m)				14.50-14.50
Date Sampled				03/11/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
PCBs by GC-MS				
PCB Congener 28	mg/kg	0.001	NONE	-
PCB Congener 52	mg/kg	0.001	NONE	-
PCB Congener 101	mg/kg	0.001	NONE	-
PCB Congener 118	mg/kg	0.001	NONE	-
PCB Congener 138	mg/kg	0.001	NONE	-
PCB Congener 153	mg/kg	0.001	NONE	-
PCB Congener 180	mg/kg	0.001	NONE	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	NONE	-
------------	-------	-------	------	---

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-94475
Project / Site name: Coed Darcy

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2486844	SP-E5-S8	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486845	SP-E4-S3	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486846	SPE-3-S1	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486847	SP-E2-S1	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486848	SP-E2-S2	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486849	SP-E7-S1	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486850	SP-E7-S2	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486851	SP-E7-S3	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486852	SP-E7-S4	None Supplied	None Supplied	Brown loam with gravel and vegetation.
2486853	ENBH4	None Supplied	14.20-14.20	Brown loam with gravel and vegetation.
2486854	ENBH4	None Supplied	14.50-14.50	Brown loam with gravel and vegetation.

Analytical Report Number : 22-94475

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	In-house method	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE

Analytical Report Number : 22-94475

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Exchangeable Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	NONE
Exotic Metals Aqua Regia Extractable	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography

Analytical Report Number : 22-94475

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
2D	GC-GC - Double coil/column gas chromatography				
Total	Aliphatics & Aromatics				
AL	Aliphatics				
AR	Aromatics				
#1	EH_2D_Total but with humics mathematically subtracted				
#2	EH_2D_Total but with fatty acids mathematically subtracted				
-	Operator - understore to separate acronyms (exception for +)				
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total				

Steve Gronow
Englobe
Columbus House
Greenmeadow Springs
Cardiff
CF15 7NE

e: steve.gronow@celtic-ltd.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS
t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-94813

Project / Site name:	Coed Darcy	Samples received on:	07/11/2022
Your job number:	C1870	Samples instructed on/ Analysis started on:	07/11/2022
Your order number:	83764	Analysis completed by:	23/11/2022
Report Issue Number:	1	Report issued on:	23/11/2022
Samples Analysed:	8 soil samples		


Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488728	2488729	2488730	2488731	2488732
Sample Reference				ENBH5	ENBH5	ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.00-4.00	9.00-9.00	10.00-10.00	11.00-11.00	12.00-12.00
Date Sampled				04/11/2022	04/11/2022	04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	31	31	29	25	22
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	2.8	3.2	15	19
Toluene	µg/kg	1	NONE	< 1.0	3.3	3.6	13	6
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	5.1
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	14
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.28
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	11
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	32	170
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	< 8.0	< 8.0	< 8.0	57	350
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	< 8.0	< 8.0	26	110	710
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	30	200	1200

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.019
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.006
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	0.019
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	1.1	2.1
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	17	84
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	35	240
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	66	460
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	120	790

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	2.8	3.2	15	19
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488728	2488729	2488730	2488731	2488732
Sample Reference				ENBH5	ENBH5	ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.00-4.00	9.00-9.00	10.00-10.00	11.00-11.00	12.00-12.00
Date Sampled				04/11/2022	04/11/2022	04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	3.3	3.6	13	6
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	5.1
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	14
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	2.4	2.8	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	C9-C10 substituted aliphatic compounds
VOC % Match	%	N/A	NONE	ND	ND	ND	ND	99
VOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND
VOC % Match	%	N/A	NONE	ND	ND	ND	ND	ND

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	2.7	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488728	2488729	2488730	2488731	2488732
Sample Reference				ENBH5	ENBH5	ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.00-4.00	9.00-9.00	10.00-10.00	11.00-11.00	12.00-12.00
Date Sampled				04/11/2022	04/11/2022	04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	0.14	0.17	0.25	1.7
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	0.3	4.2
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	< 0.05	0.29	0.36	0.49	< 0.05
Anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488728	2488729	2488730	2488731	2488732
Sample Reference				ENBH5	ENBH5	ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.00-4.00	9.00-9.00	10.00-10.00	11.00-11.00	12.00-12.00
Date Sampled				04/11/2022	04/11/2022	04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND
--------------------------	--	-----	------	----	----	----	----	----

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488733	2488734	2488735
Sample Reference				ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				13.00-13.00	13.20-13.20	14.50-14.50
Date Sampled				04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	27	59	52
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	2.4	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	6.3	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	0.024	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	0.41	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	11	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	240	7.3	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	520	21	16
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	5600	110	29
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	6400	140	45

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	2.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	130	25	51
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	410	40	35
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	5400	170	57
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	5900	230	140

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	2.4	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488733	2488734	2488735
Sample Reference				ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				13.00-13.00	13.20-13.20	14.50-14.50
Date Sampled				04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	6.3	< 1.0
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	440	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	C7-C10 substituted aliphatic compounds	ND	ND
VOC % Match	%	N/A	NONE	99	ND	ND
VOCs TICs Compound Name		N/A	NONE	C10 substituted aromatic compounds	ND	ND
VOC % Match	%	N/A	NONE	99	ND	ND

SVOCs

Aniline	mg/kg	0.1	NONE	0.8	< 0.1	< 0.1
Phenol	mg/kg	0.2	NONE	< 0.2	1.3	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488733	2488734	2488735
Sample Reference				ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				13.00-13.00	13.20-13.20	14.50-14.50
Date Sampled				04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	13	0.8
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	1.1	0.4	< 0.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	1.3	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	0.82	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	NONE	0.41	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05

Analytical Report Number: 22-94813

Project / Site name: Coed Darcy

Your Order No: 83764

Lab Sample Number				2488733	2488734	2488735
Sample Reference				ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				13.00-13.00	13.20-13.20	14.50-14.50
Date Sampled				04/11/2022	04/11/2022	04/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
SVOCs TICs						
SVOCs TICs Compound Name				ND	ND	ND

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-94813

Project / Site name: Coed Darcy

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2488728	ENBH5	None Supplied	4.00-4.00	Black loam and sand.
2488729	ENBH5	None Supplied	9.00-9.00	Black loam and sand.
2488730	ENBH5	None Supplied	10.00-10.00	Black loam and sand.
2488731	ENBH5	None Supplied	11.00-11.00	Black loam and sand.
2488732	ENBH5	None Supplied	12.00-12.00	Black loam and sand.
2488733	ENBH5	None Supplied	13.00-13.00	Black loam and sand.
2488734	ENBH5	None Supplied	13.20-13.20	Brown loam and sand with vegetation.
2488735	ENBH5	None Supplied	14.50-14.50	Brown loam and sand with vegetation.

Analytical Report Number : 22-94813

Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Appendix D

Geotechnical Analysis



eNGLOBE



2718

GEOTECHNICAL ENGINEERING LIMITED



For the attention of Wayne Fitton

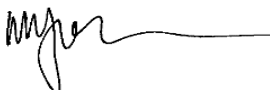
Version No. 3
Reason for update Additional results
Page No. 1 of 67
Date of Issue 02/02/2023

TEST REPORT

PROJECT/SITE	COED DARCY	Samples received	02/11/2022
GEL REPORT NUMBER	37330	Schedule received	11/11/2022
Your ref/PO:		Testing commenced	21/11/2022
Test report refers to	Schedule 1	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-1: 2014:5, Water Content	15	YES
BS EN ISO 17892-12:2018, Liquid & Plastic Limits	9	YES
BS EN ISO 17892-1: 2014:5, Water Content (Subcontracted)	15	YES
BS1377: Part 2: 1990:4.2-4.4&5.2-5.4, Liquid & Plastic Limits (Subcontracted)	8	YES
BS EN ISO 17892-2: 2014:5.1, Density - Linear Measurement (Subcontracted)	4	YES
BS EN ISO 17892-2: 2014:5.2, Density - Immersion (Subcontracted)	1	YES
BS1377: Part 2: 1990:9.2, Particle Size Distribution - Sieve (Subcontracted)	13	YES
BS1377: Part 4: 1990:3, Dry Density/Moisture Content Relationship (Subcontracted)	5	YES
BS1377: Part 7: 1990:4.5, Determination of Shear Strength by Direct Shear (Subcontracted)	1	YES
BS1377: Part 7: 1990:5.5.4, Determination of Shear Strength by Direct Shear (Subcontracted)	1	YES
Hand Vane	2	NO
BS EN ISO 17892-9:2018, Consolidated Triaxial Compression Test	2	YES
pH (Subcontracted)	14	YES
Sulphate Content - 2:1 Water Soluble (Subcontracted)	14	YES

General Remarks This report may not be partially reproduced without written permission from this laboratory. The results reported relate to samples received in the laboratory and the items tested. Report Specific Remarks	Approved Signatories: W Jones (Laboratory Manager) T Best (Deputy Laboratory Manager) J Hanson (Director) N Parry (Director) 
---	--

Doc TR01 Rev No. 24 Revision date 26/09/22 DC:JH

Geotechnical Engineering Ltd

Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF

www.geoeng.co.uk

geotech@geoeng.co.uk
TEL: 01452 527743
Fax: 01452 729314

Registered number: 00700739

VAT Number: 682 5857 89

Payments: Geotechnical Engineering Limited

Sort code: 30-93-48 Bank account: 1713840



2718

GEOTECHNICAL ENGINEERING LIMITED



For the attention of Wayne Fitton

Version No. 3
Reason for update Additional results
Page No. 2 of 67
Date of Issue 02/02/2023

TEST REPORT

PROJECT/SITE	COED DARCY	Samples received	02/11/2022
GEL REPORT NUMBER	37330	Schedule received	11/11/2022
Your ref/PO:		Testing commenced	21/11/2022
Test report refers to	Schedule 1	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
Organic Matter Content (Subcontracted)	37	YES

General Remarks

This report may not be partially reproduced without written permission from this laboratory.
The results reported relate to samples received in the laboratory and the items tested.

Report Specific Remarks**Approved Signatories:****W Jones (Laboratory Manager)** T Best (Deputy Laboratory Manager)

J Hanson (Director) N Parry (Director)

Doc TR01 Rev No. 24 Revision date 26/09/22 DC:JH

Geotechnical Engineering Ltd

Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF

www.geoeng.co.uk

geotech@geoeng.co.uk
TEL: 01452 527743
Fax: 01452 729314

Registered number: 00700739**VAT Number:** 682 5857 89**Payments:** Geotechnical Engineering Limited**Sort code:** 30-93-48 **Bank account:** 1713840

LIQUID AND PLASTIC LIMITS

BS EN ISO 17892-12:2018



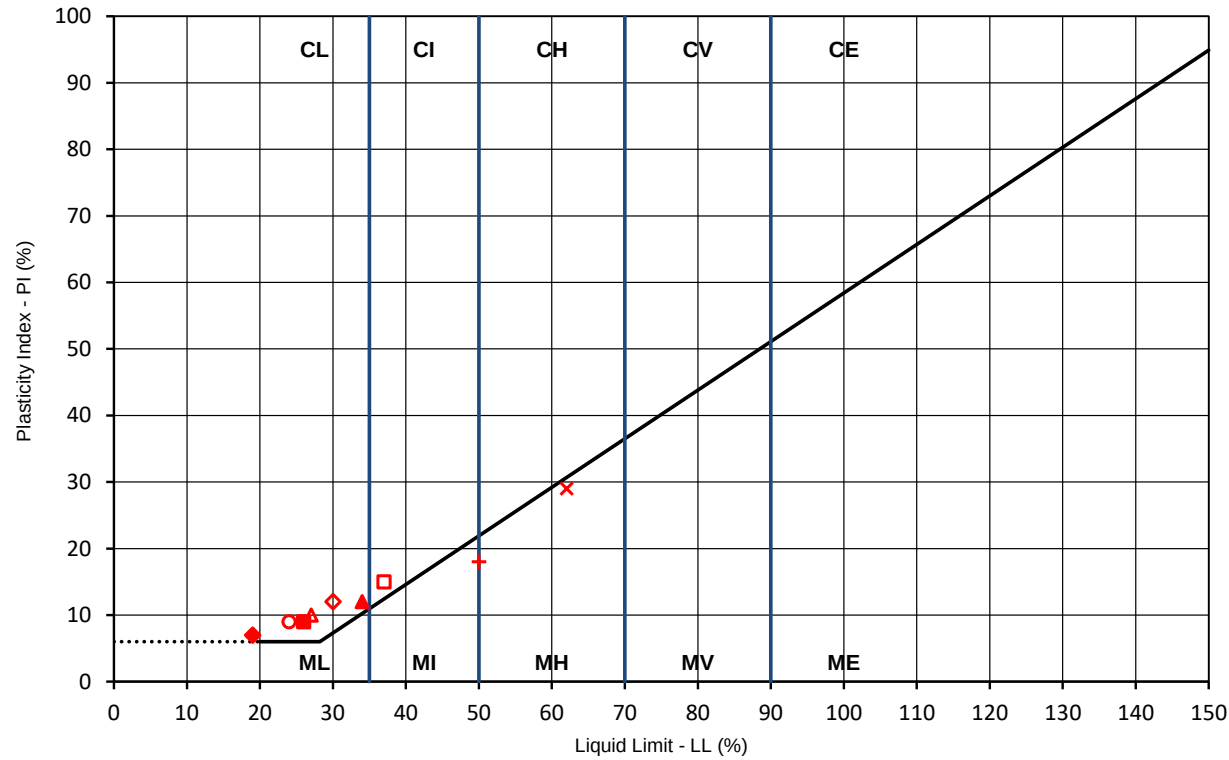
CLIENT ENGLOBE

SITE COED DARCY

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks		
	no./type	depth (m)										
ENBH1	D	7.70	7.70	426	D					Black PEAT		
ENBH1	D	8.10	8.10	321	D					Black PEAT		
ENBH1	L	8.10	8.30	321	D					Brown PEAT		
ENBH1	D	8.70	8.70	267	D					Brown PEAT		
ENBH1	D	9.00	9.00	279	D					Brown PEAT		
ENBH1	D	10.00	10.00	39.9	BXE	1	37	22	15	Brown slightly sandy silty CLAY		
ENBH1	U	10.50	10.50	20.6	BXE	6	30	18	12	Greyish brown slightly gravelly slightly sandy silty CLAY		
ENBH1	D	11.20	11.20	14.4	BXE	20	27	17	10	Brown mottled grey slightly sandy slightly gravelly silty CLAY		
ENBH2	D	8.70	8.70	393	D					Brown PEAT		
ENBH2	D	10.00	10.00	46.7	BXE	0	62	33	29	Brown slightly sandy clayey SILT		
ENBH2	D	10.80	10.80	68.2	BXE	1	50	32	18	Brown mottled black slightly gravelly slightly sandy clayey SILT		
ENBH2	D	11.30	11.30	23.4	BXE	2	24	15	9	Brown slightly gravelly slightly sandy silty CLAY		
ENBH2	L	11.70	11.90	8.7	BYE	16	26	17	9	Brown mottled grey and mottled orange slightly sandy slightly gravelly silty CLAY		
ENBH5	C	14.90	15.00	4.2	BXE	39	19	12	7	Brown very gravelly very clayey SAND		
ENBH5	D	14.90	14.90	36.7	BYE	28	34	22	12	Brown mottled black slightly gravelly slightly sandy silty CLAY		
general remarks natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014 (unless specified) NP denotes non plastic # denotes sample tested is smaller than that which is recommended in accordance with BS EN ISO 17892 or BS1377												
specimen preparation A - as received B - washed on 0.425mm sieve C - air dried D - oven dried (60oC) E - oven dried (105oC) F - not known										test method X - cone penetrometer (4 point) Y - cone penetrometer (1 point) Z - casagrande apparatus	CONTRACT 37330	CHECKED WNJ



CLIENT ENGLOBE
SITE COED DARCY



BH/TP No.		depth (m)	LL	PL	PI	remarks
□	ENBH1	10.00	37	22	15	
◇	ENBH1	10.50	30	18	12	
△	ENBH1	11.20	27	17	10	
×	ENBH2	10.00	62	33	29	
+	ENBH2	10.80	50	32	18	
○	ENBH2	11.30	24	15	9	
■	ENBH2	11.90	26	17	9	
◆	ENBH5	15.00	19	12	7	
▲	ENBH5	14.90	34	22	12	

CONTRACT	CHECKED
37330	WNJ

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

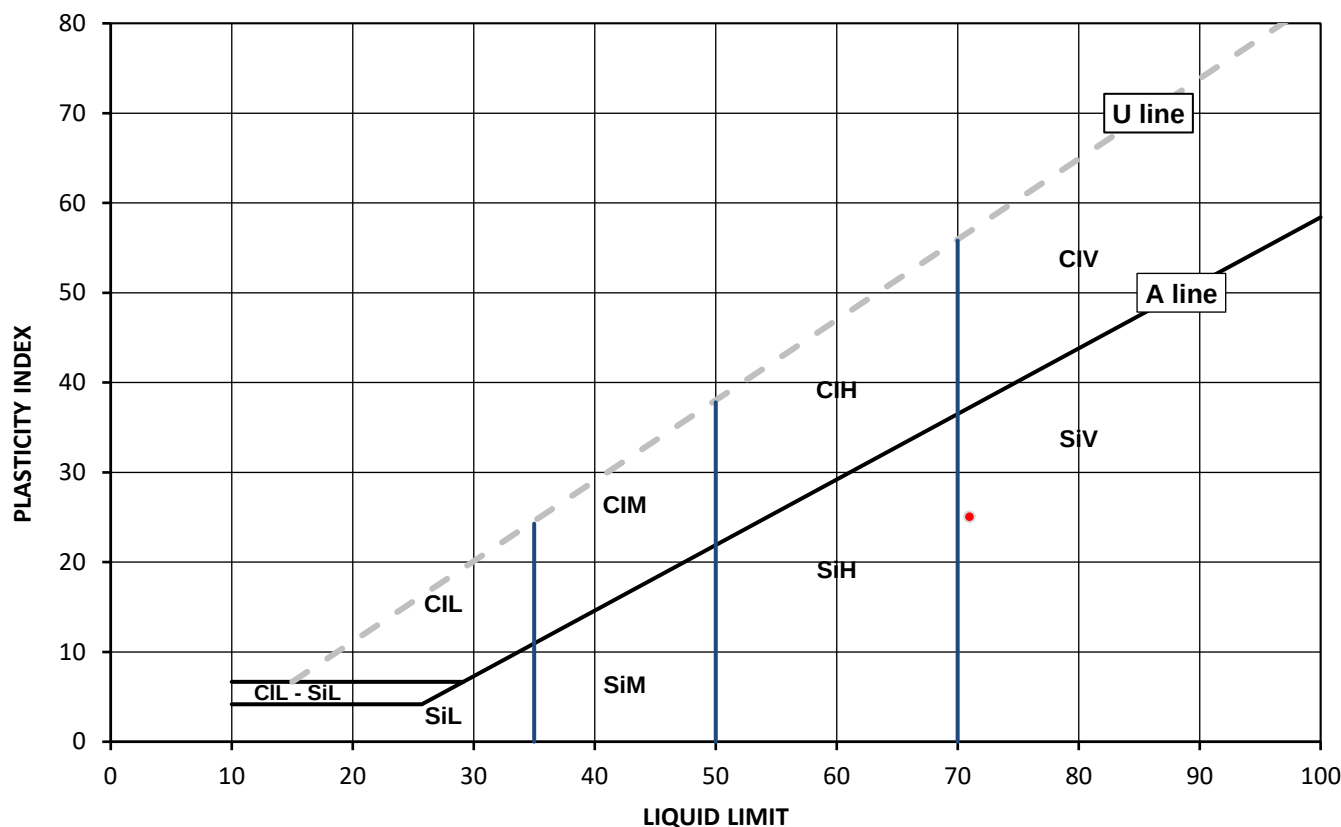
Test Results:

Laboratory Reference: 2521236
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Dark brown slightly gravelly SILT with tar

Depth Top [m]: 2.40
Depth Base [m]: 2.70
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
56	71	46	25	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	Liquid Limit
Si	Silt	L Low	below 35
		M Medium	35 to 50
		H High	50 to 70
		V Very high	exceeding 70
		O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:



Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

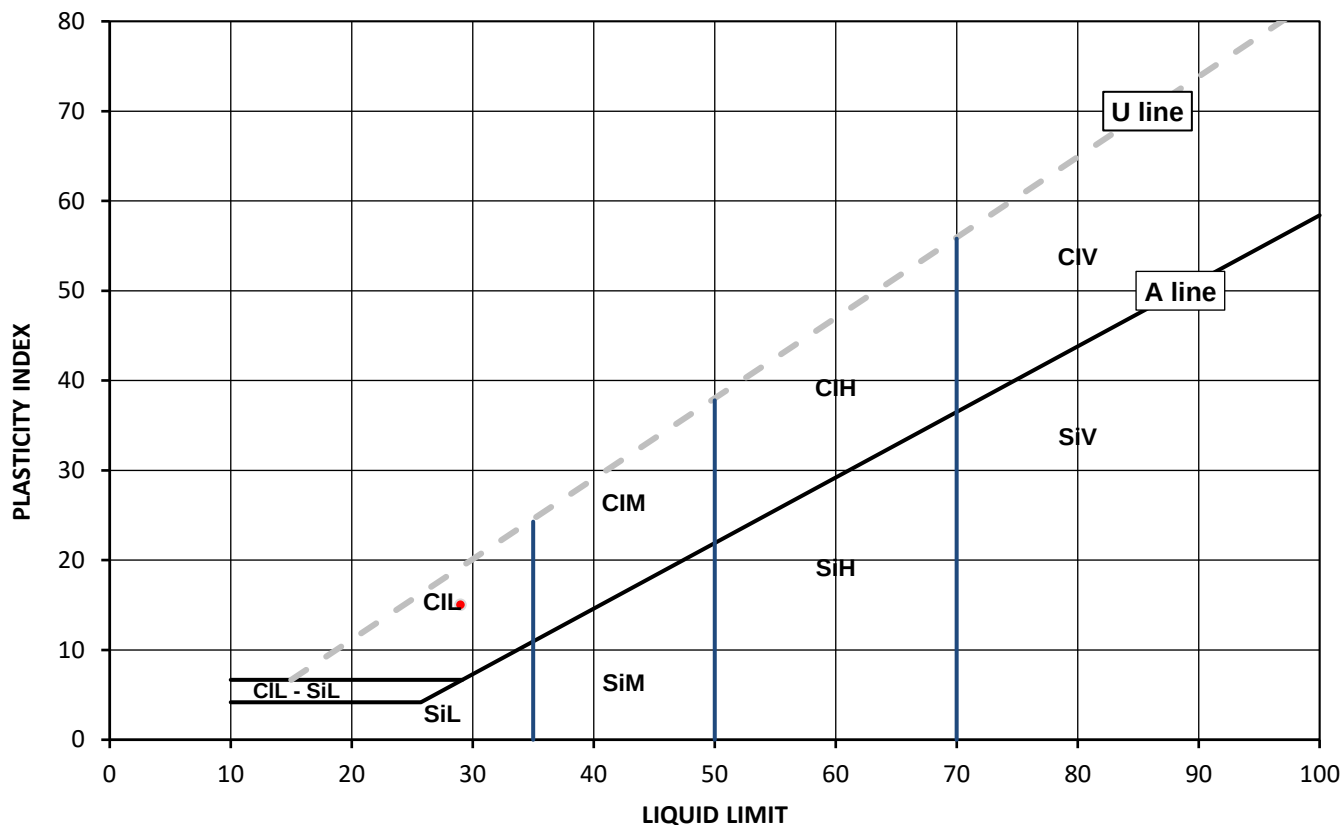
Test Results:

Laboratory Reference: 2521239
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly very sandy silty CLAY

Depth Top [m]: 10.70
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	29	14	15	95



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

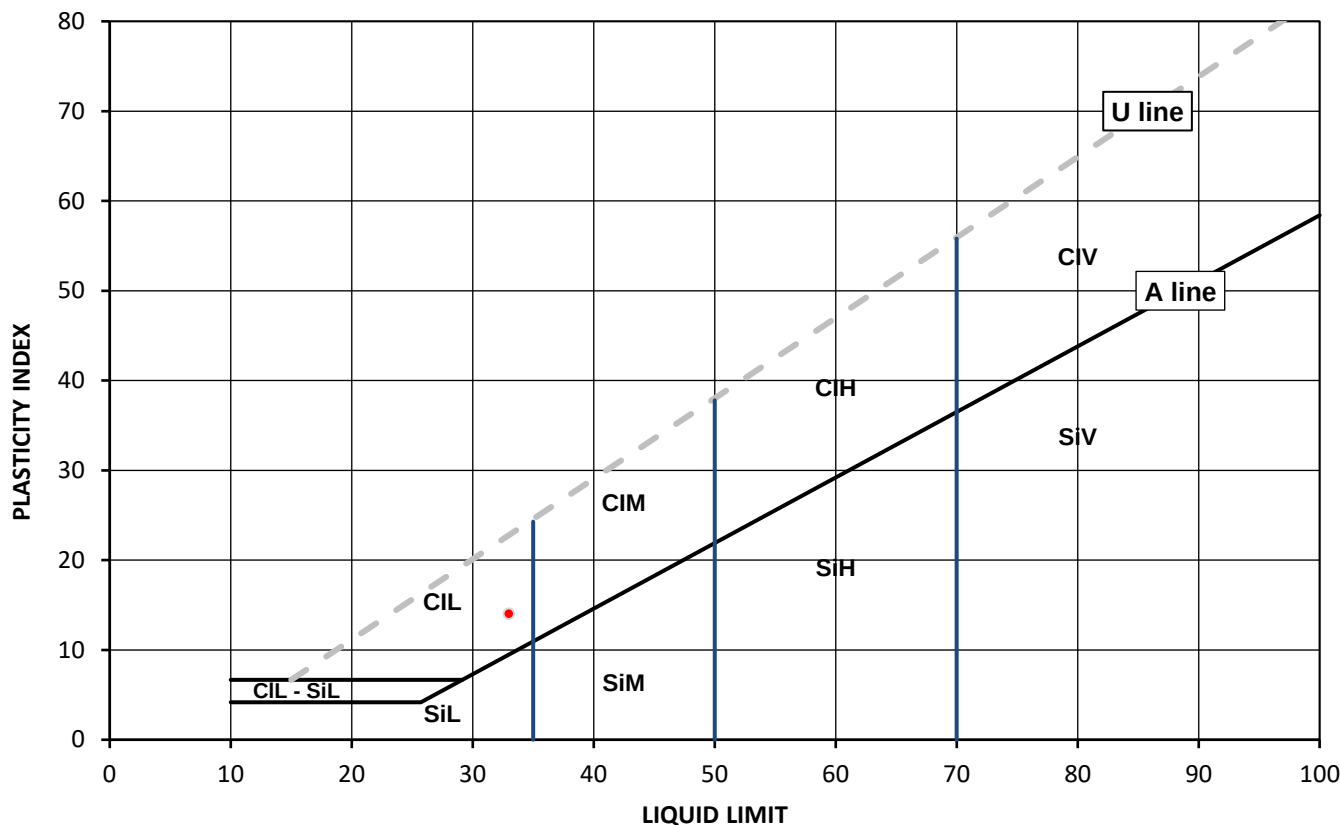
Test Results:

Laboratory Reference: 2521242
Hole No.: ENBH3
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY heavily impacted with possible Hydrocarbons

Depth Top [m]: 1.65
Depth Base [m]: 2.05
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
25	33	19	14	72



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

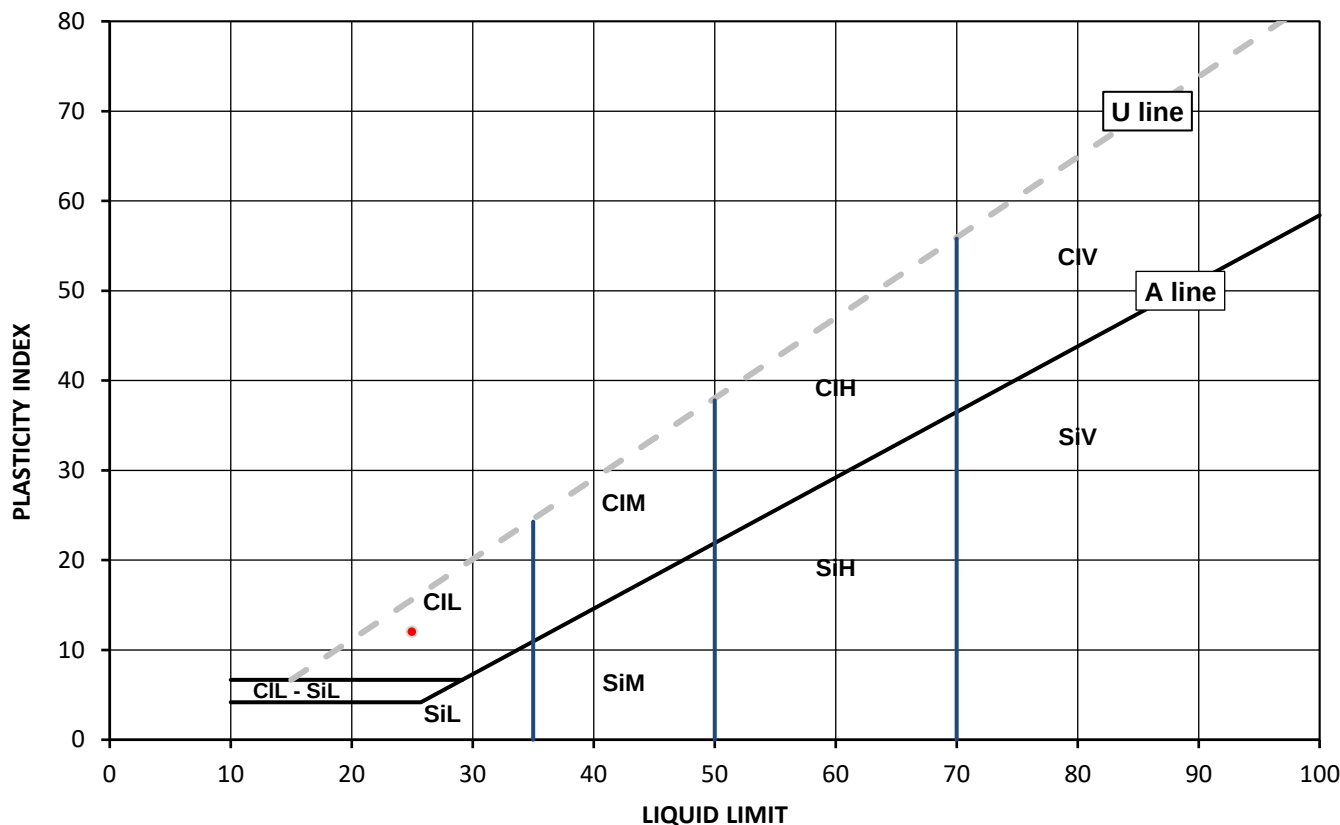
Test Results:

Laboratory Reference: 2521248
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 13.20
Depth Base [m]: 13.80
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	25	13	12	67



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:



Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 12/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

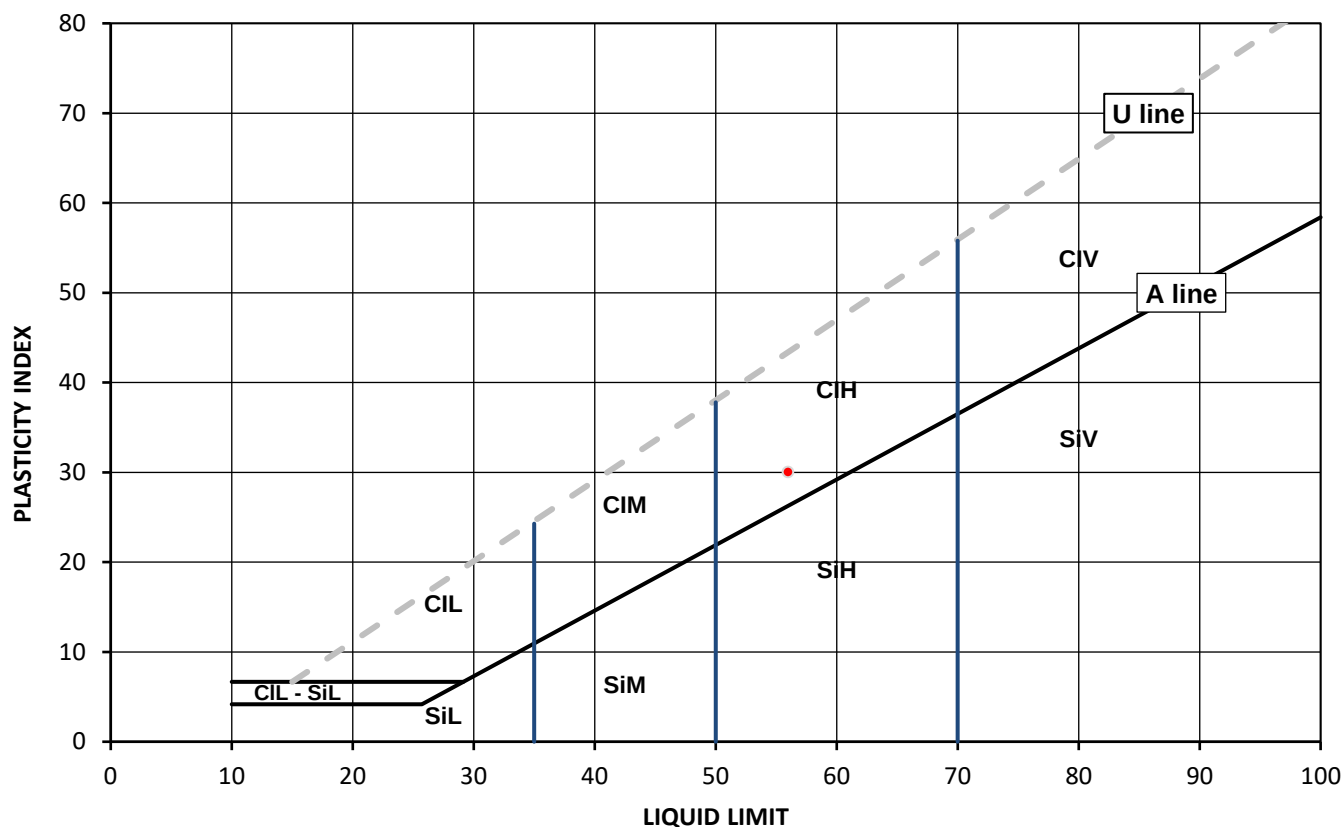
Test Results:

Laboratory Reference: 2521253
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Brown slightly sandy slightly organic CLAY

Depth Top [m]: 15.40
Depth Base [m]: 15.50
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
53	56	26	30	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 12/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

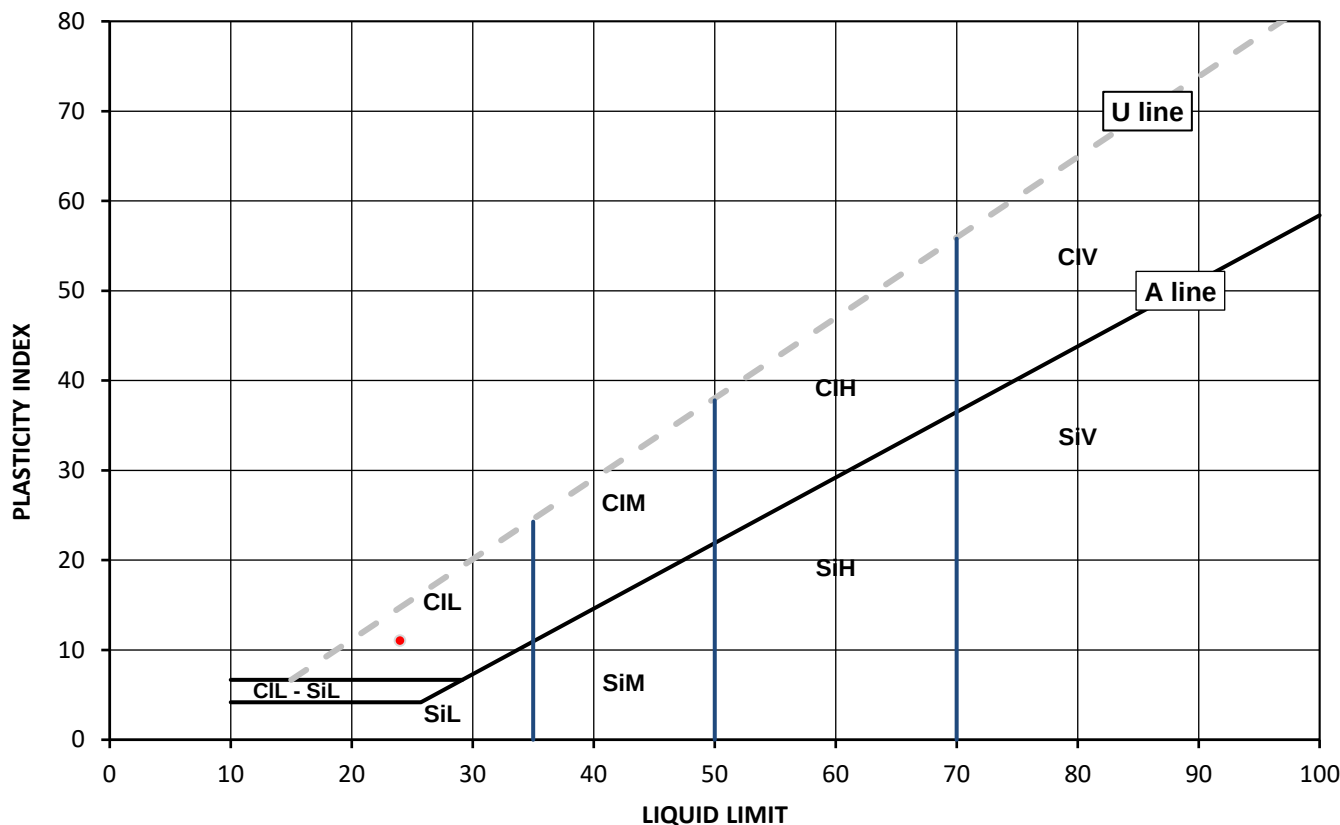
Test Results:

Laboratory Reference: 2521254
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Brown very sandy CLAY

Depth Top [m]: 15.80
Depth Base [m]: 15.90
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
21	24	13	11	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Katarzyna Koziel

4041

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 12/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

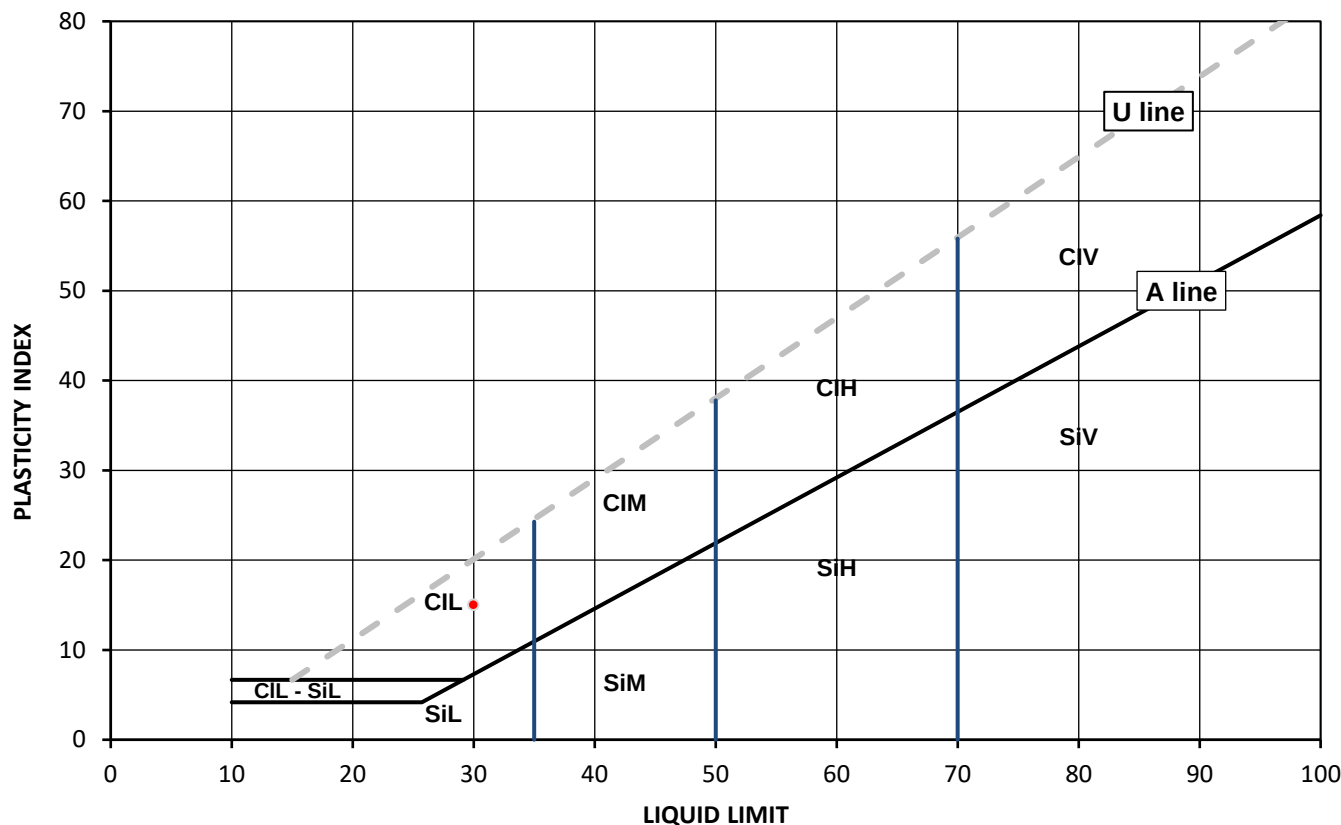
Test Results:

Laboratory Reference: 2521255
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly very sandy CLAY

Depth Top [m]: 16.30
Depth Base [m]: 16.40
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
19	30	15	15	98



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 12/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

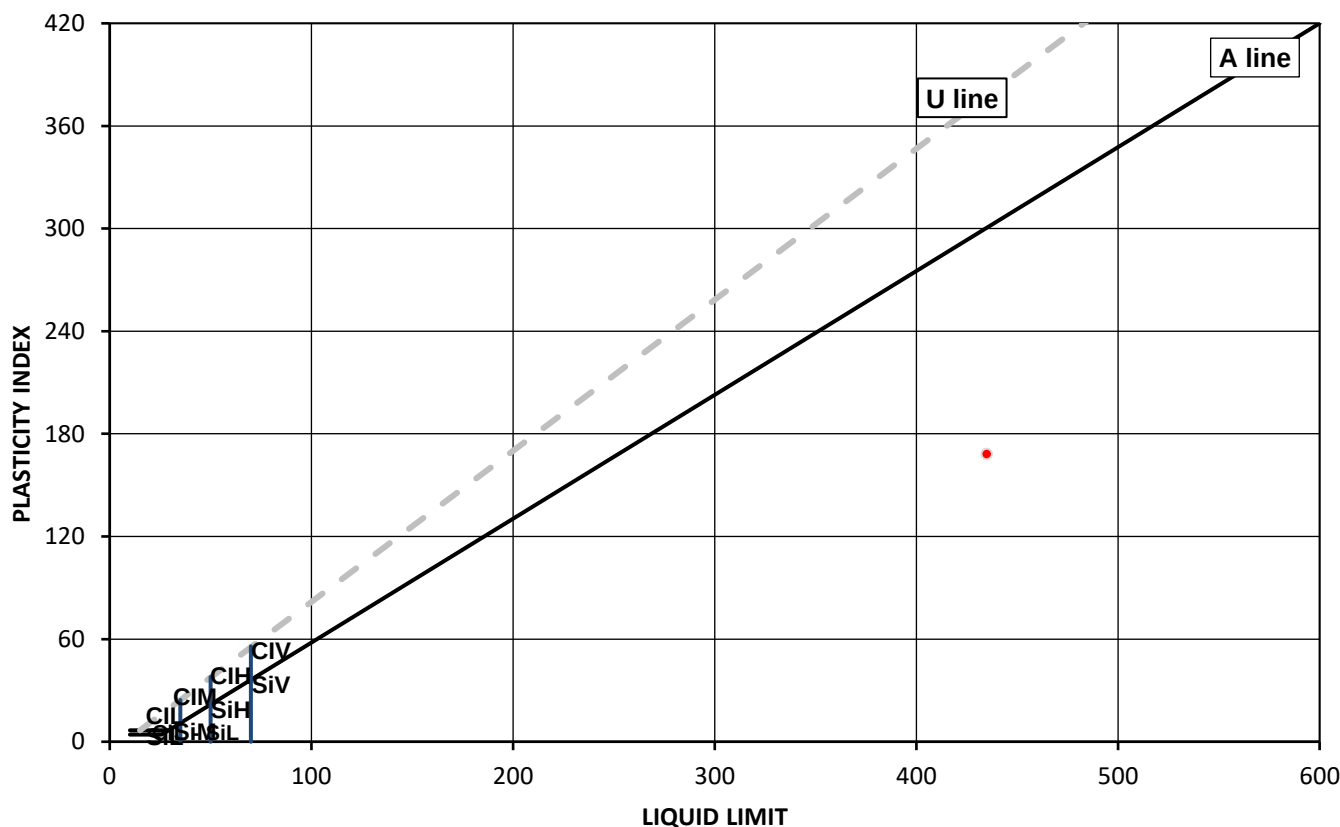
Test Results:

Laboratory Reference: 2521262
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Brown PEAT

Depth Top [m]: 14.60
Depth Base [m]: 14.70
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
247	435	267	168	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: Geotechnical Engineering Ltd
 Client Address: Centurion House, Olympus Park,
 Quedgeley, Gloucester,
 GL2 4NF
 Contact: Tom Best
 Site Address: Coed Darcy

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

Water Content by BS 1377-2:1990: Clause 3.2; Water Content by BS EN ISO
 17892-1:2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test),
 Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 6339
 Job Number: 22-11269
 Date Sampled: Not Given
 Date Received: 05/12/2022
 Date Tested: 12/12 - 16/12/2022
 Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2521236	ENBH1	Not Given	2.40	2.70	D	Dark brown slightly gravelly SILT with tar	Atterberg 1 Point	56	55.5	99	71	46	25						
2521239	ENBH1	Not Given	10.70	Not Given	B	Brownish grey slightly gravelly very sandy silty CLAY	Atterberg 1 Point	27	26.9	95	29	14	15						
2521242	ENBH3	Not Given	1.65	2.05	B	Brown slightly gravelly very sandy CLAY heavily impacted with possible Hydrocarbons	Atterberg 1 Point	25	25.3	72	33	19	14						
2521248	ENBH4	Not Given	13.20	13.80	B	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	14	14.4	67	25	13	12						
2521253	ENBH4	Not Given	15.40	15.50	D	Brown slightly sandy slightly organic CLAY	Atterberg 1 Point	53	52.8	100	56	26	30						
2521254	ENBH4	Not Given	15.80	15.90	D	Brown very sandy CLAY	Atterberg 1 Point	21	21.3	100	24	13	11						
2521255	ENBH4	Not Given	16.30	16.40	D	Brownish grey slightly gravelly very sandy CLAY	Atterberg 1 Point	19	20.9	98	30	15	15						
2521262	ENBH5	Not Given	14.60	14.70	D	Brown PEAT	Atterberg 1 Point	247	247	100	435	267	168						
2521261	ENBH5	Not Given	13.20	13.65	B	Dark brown SLAG with fragments of peat and wood			97.2										
2521241	ENBH2	Not Given	4.80	Not Given	B	Dark brown slightly silty CLAY with fragments of wood			197										

Note: # Non accredited; NP - Non plastic

Comments: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

Water Content by BS EN ISO 17892-1:2014; Atterberg by BS 1377-2: 1990:
Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2:
1990: Clause 8.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 12/12 - 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
2521247	ENBH3	Not Given	11.90	12.50	B	Dark brown organic CLAY with slag		45.8											
2521246	ENBH3	Not Given	10.50	11.20	B	Dark brown PEAT heavily impacted with possible Hydrocarbons		379											
2521238	ENBH1	Not Given	7.40	Not Given	B	Dark brown PEAT		317											
2521252	ENBH4	Not Given	14.30	15.50	U	Dark brown CLAY with slag		86.6											
2521251	ENBH4	Not Given	14.00	14.30	B	Dark brown organic CLAY heavily impacted with possible Hydrocarbons		174											

Note: # Non accredited; NP - Non plastic

Comments: Tested under RED LAB condition.

Signed:

Katarzyna
Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: Geotechnical Engineering Ltd
 Client Address: Centurion House, Olympus Park,
 Quedgeley, Gloucester,
 GL2 4NF
 Contact: Tom Best
 Site Address: Coed Darcy

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 6339
 Job Number: 22-11269
 Date Sampled: Not Given
 Date Received: 05/12/2022
 Date Tested: 12/12 - 16/12/2022
 Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC %	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2521236	ENBH1	Not Given	2.40	2.70	D	Dark brown slightly gravelly SILT with tar		56	Sample was quartered, oven dried at 40.0 °C			
2521239	ENBH1	Not Given	10.70	Not Given	B	Brownish grey slightly gravelly very sandy silty CLAY		27	Sample was quartered, oven dried at 106.2 °C			
2521242	ENBH3	Not Given	1.65	2.05	B	Brown slightly gravelly very sandy CLAY heavily impacted with possible Hydrocarbons		25	Sample was quartered, oven dried at 40.0 °C			
2521248	ENBH4	Not Given	13.20	13.80	B	Brown slightly gravelly very sandy CLAY		14	Sample was quartered, oven dried at 106 °C			
2521253	ENBH4	Not Given	15.40	15.50	D	Brown slightly sandy slightly organic CLAY		53	Sample was quartered, oven dried at 107 °C			
2521254	ENBH4	Not Given	15.80	15.90	D	Brown very sandy CLAY		21	Sample was quartered, oven dried at 107 °C			
2521255	ENBH4	Not Given	16.30	16.40	D	Brownish grey slightly gravelly very sandy CLAY		19	Sample was quartered, oven dried at 107 °C			
2521262	ENBH5	Not Given	14.60	14.70	D	Brown PEAT		247	Sample was quartered, oven dried at 107 °C			

Comments: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF BULK DENSITY - IMMERSION IN FLUID METHOD

Tested in Accordance with: BS EN ISO 17892-2: 2014: Clause 5.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 17/12/2022
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Bulk density	Dry density	WC	Preparation		
		Reference	Depth Top	Depth Base	Type								
			m	m				Mg/m3	Mg/m3	%			
2521261	ENBH5	Not Given	13.20	13.65	B	Dark brown SLAG with fragments of peat and wood		1.05	0.51	105.0			

Note: WC - Water Content

Comments: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: Geotechnical Engineering Ltd
 Client Address: Centurion House, Olympus Park,
 Quedgeley, Gloucester,
 GL2 4NF
 Contact: Tom Best
 Site Address: Coed Darcy

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF BULK DENSITY - LINEAR MEASUREMENT METHOD

Tested in Accordance with: BS EN ISO 17892-2: 2014: Clause 5.1

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 6339
 Job Number: 22-11269
 Date Sampled: Not Given
 Date Received: 05/12/2022
 Date Tested: 15/12/2022
 Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Bulk density Mg/m3	Dry density Mg/m3	WC %	Preparation		
		Reference	Depth Top m	Depth Base m	Type								
2521241	ENBH2	Not Given	4.80	Not Given	B	Dark brown slightly silty CLAY with fragments of wood		1.00	0.34	197			
2521246	ENBH3	Not Given	10.50	11.20	B	Dark brown PEAT heavily impacted with possible Hydrocarbons		1.02	0.21	379			
2521247	ENBH3	Not Given	11.90	12.50	B	Dark brown organic CLAY with slag		1.03	0.70	45.8			
2521252	ENBH4	Not Given	14.30	15.50	U	Dark brown CLAY with slag		1.22	0.66	86.6			

Note: WC - Water Content

Comments: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

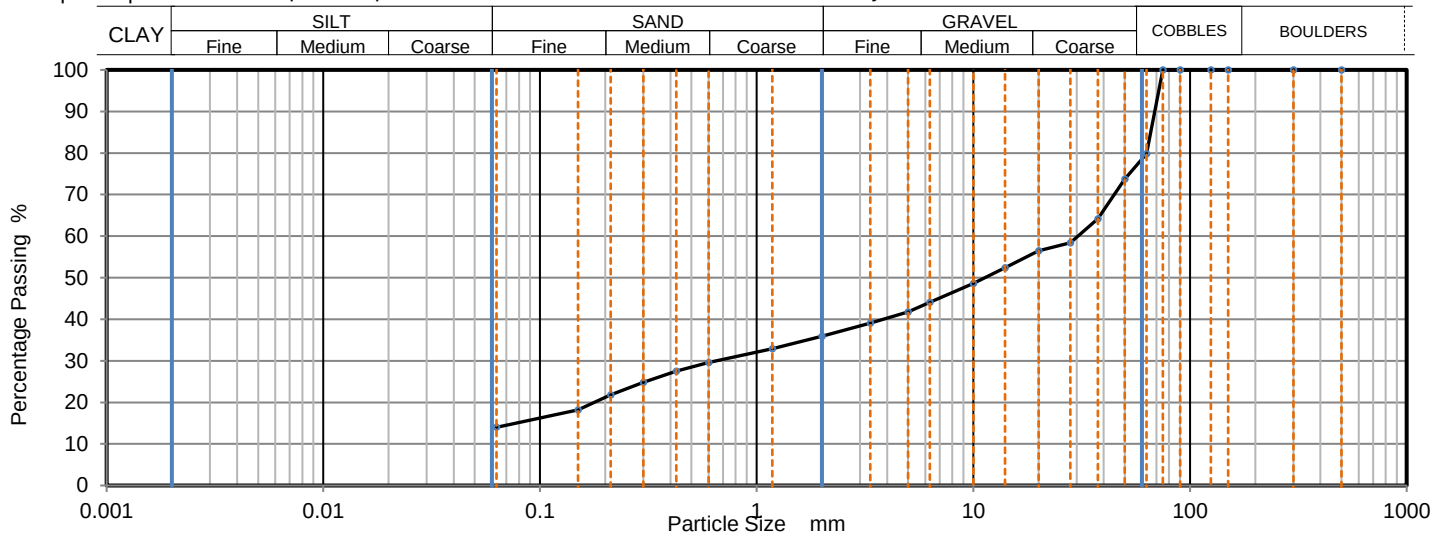
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521235
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy GRAVEL with fragments of brick, some cobbles
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.20
Depth Base [m]: 1.80
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	80		
50	74		
37.5	64		
28	58		
20	57		
14	52		
10	49		
6.3	44		
5	42		
3.35	39		
2	36		
1.18	33		
0.6	30		
0.425	28		
0.3	25		
0.212	22		
0.15	18		
0.063	14		

Sample Proportions	% dry mass
Very coarse	20
Gravel	44
Sand	22
Fines <0.063mm	14

Grading Analysis	
D100	mm 75
D60	mm 30.3
D30	mm 0.654
D10	mm
Uniformity Coefficient	> 480
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521237

Hole No.: ENBH1

Sample Reference: Not Given

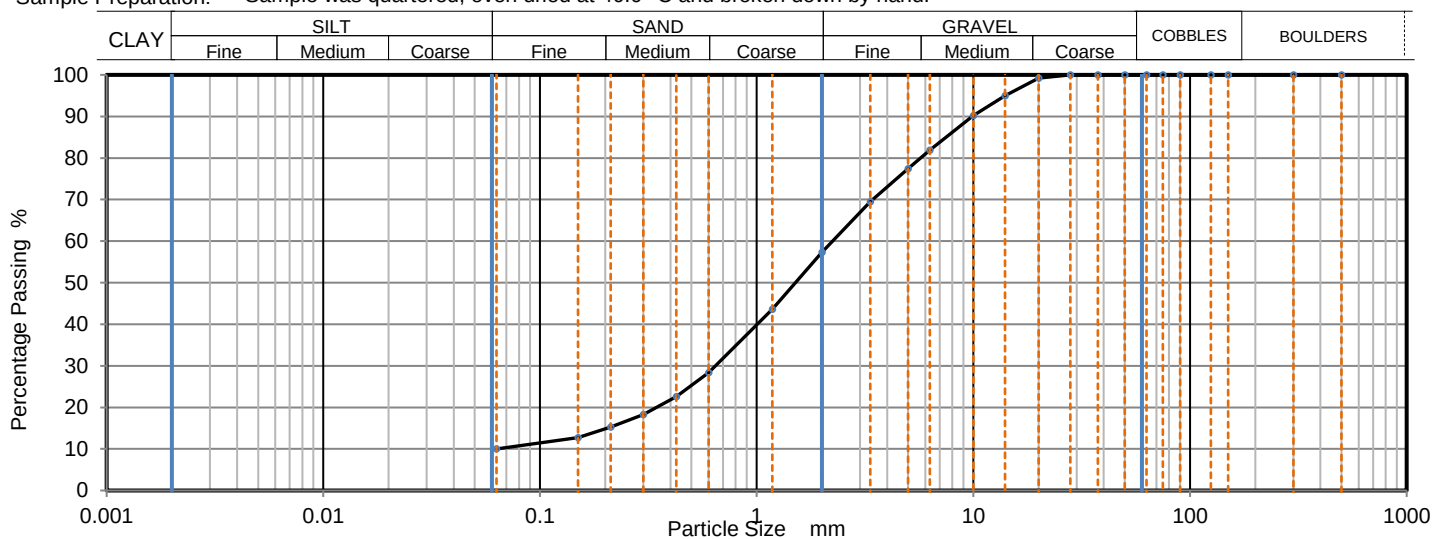
Sample Description: Black SLAG

Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 2.70

Depth Base [m]: 4.20

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	95		
10	90		
6.3	82		
5	77		
3.35	70		
2	57		
1.18	44		
0.6	28		
0.425	23		
0.3	18		
0.212	15		
0.15	13		
0.063	10		

Sample Proportions	% dry mass
Very coarse	0
Gravel	43
Sand	47
Fines <0.063mm	10

Grading Analysis		
D100	mm	28
D60	mm	2.24
D30	mm	0.644
D10	mm	
Uniformity Coefficient		> 36
Curvature Coefficient		

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Page 1 of 1

Date Reported: 02/02/2023

GF 100.21

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

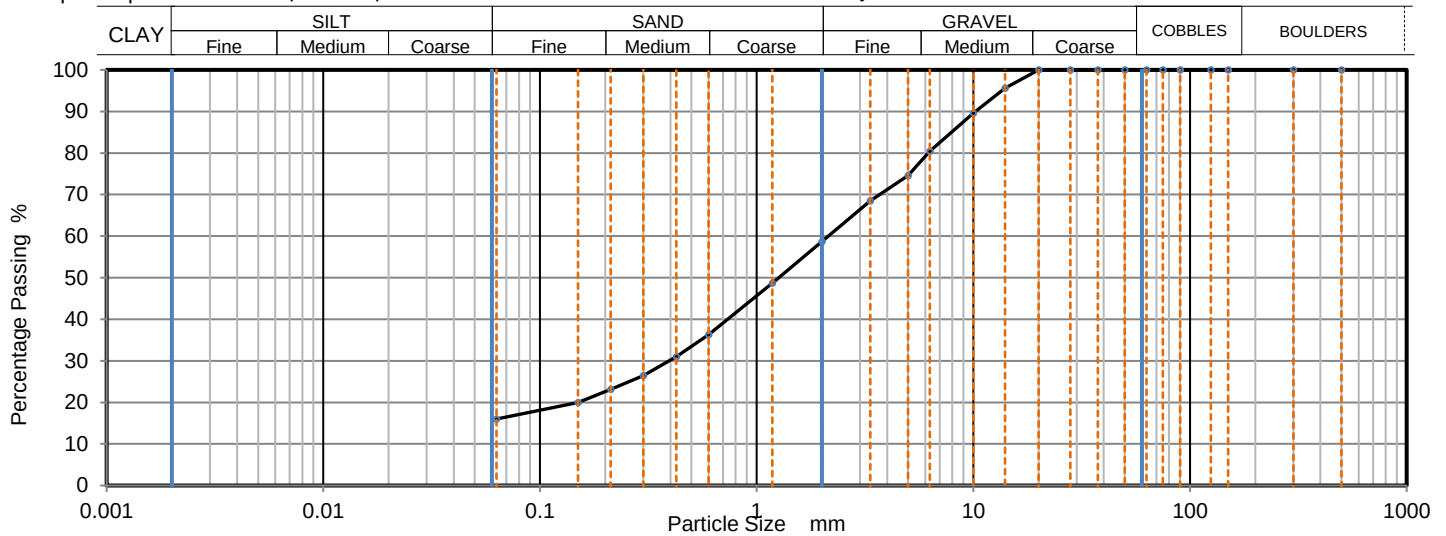
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521240
Hole No.: ENBH2
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 1.20
Depth Base [m]: 2.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	90		
6.3	80		
5	75		
3.35	69		
2	59		
1.18	49		
0.6	36		
0.425	31		
0.3	26		
0.212	23		
0.15	20		
0.063	16		

Sample Proportions	% dry mass
Very coarse	0
Gravel	41
Sand	42
Fines <0.063mm	16

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 34
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

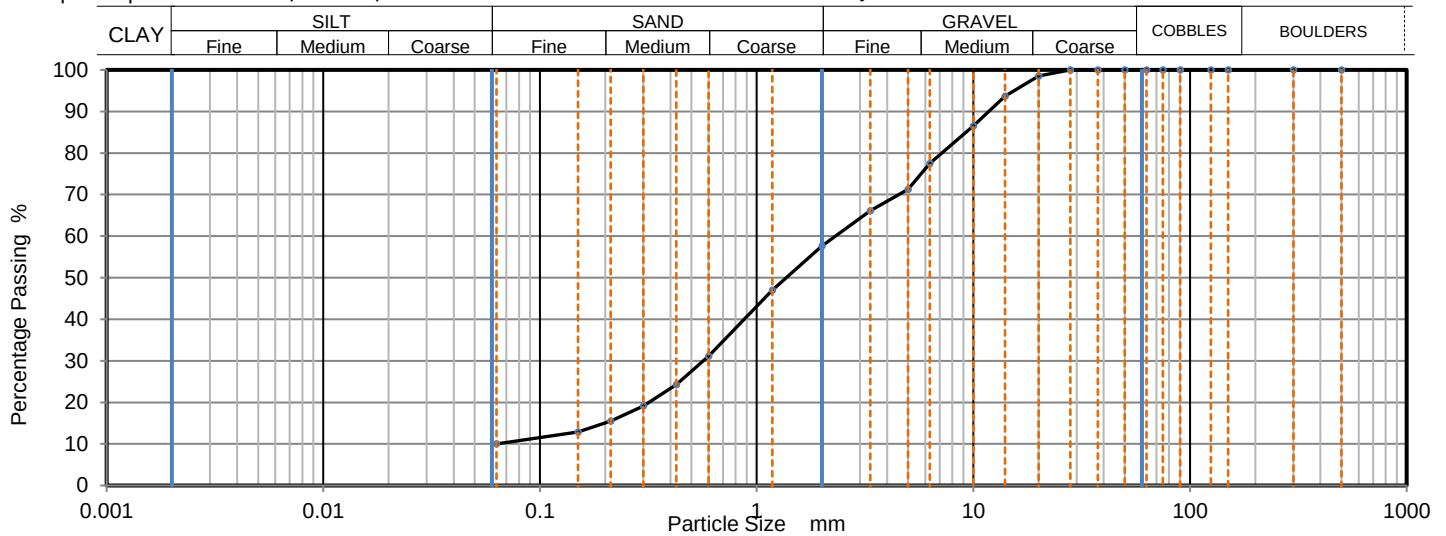
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521243
Hole No.: ENBH3
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 4.20
Depth Base [m]: 5.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	94		
10	87		
6.3	78		
5	71		
3.35	66		
2	58		
1.18	47		
0.6	31		
0.425	24		
0.3	19		
0.212	16		
0.15	13		
0.063	10		

Sample Proportions	% dry mass
Very coarse	0
Gravel	42
Sand	47
Fines <0.063mm	10

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 37
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

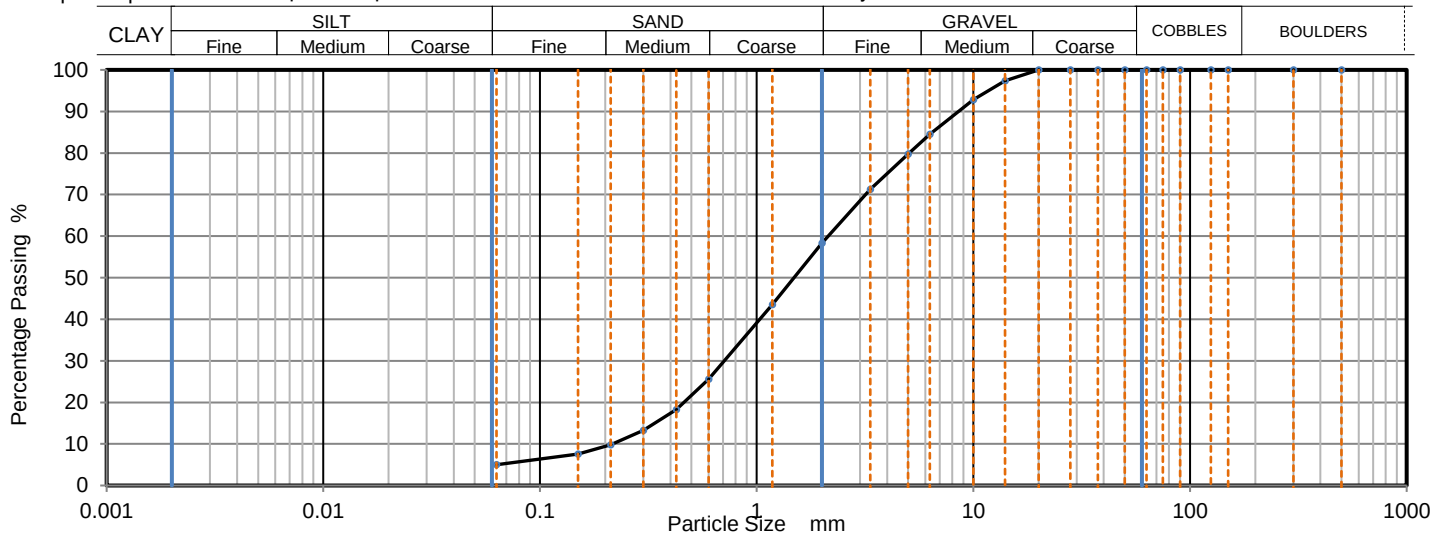
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521244
Hole No.: ENBH3
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 7.20
Depth Base [m]: 8.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	97		
10	93		
6.3	85		
5	80		
3.35	71		
2	58		
1.18	44		
0.6	26		
0.425	18		
0.3	13		
0.212	10		
0.15	8		
0.063	6		

Sample Proportions	% dry mass
Very coarse	0
Gravel	42
Sand	53
Fines <0.063mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	9.9
Curvature Coefficient	1.1

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

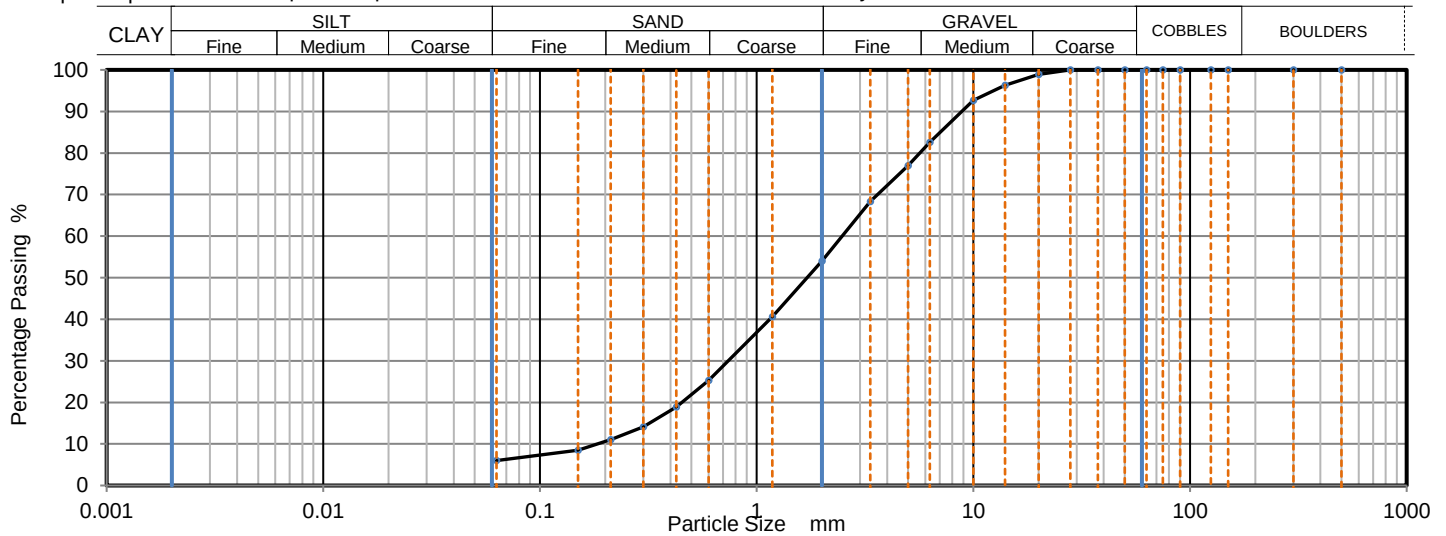
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521245
Hole No.: ENBH3
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 8.70
Depth Base [m]: 10.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	96		
10	93		
6.3	83		
5	77		
3.35	68		
2	54		
1.18	41		
0.6	25		
0.425	19		
0.3	14		
0.212	11		
0.15	9		
0.063	6		

Sample Proportions	% dry mass
Very coarse	0
Gravel	46
Sand	48
Fines <0.063mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	13
Curvature Coefficient	1.2

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

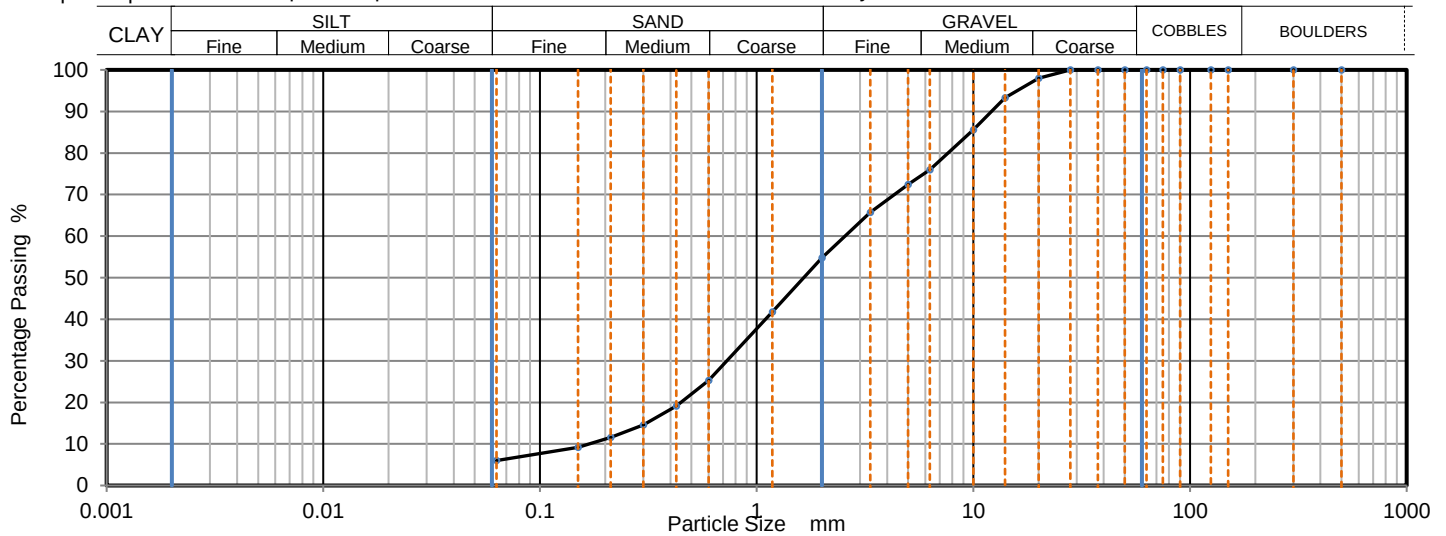
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521249
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 2.70
Depth Base [m]: 4.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	93		
10	86		
6.3	76		
5	72		
3.35	66		
2	55		
1.18	42		
0.6	25		
0.425	19		
0.3	15		
0.212	12		
0.15	9		
0.063	7		

Sample Proportions	% dry mass
Very coarse	0
Gravel	45
Sand	48
Fines <0.063mm	7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	15
Curvature Coefficient	1.2

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

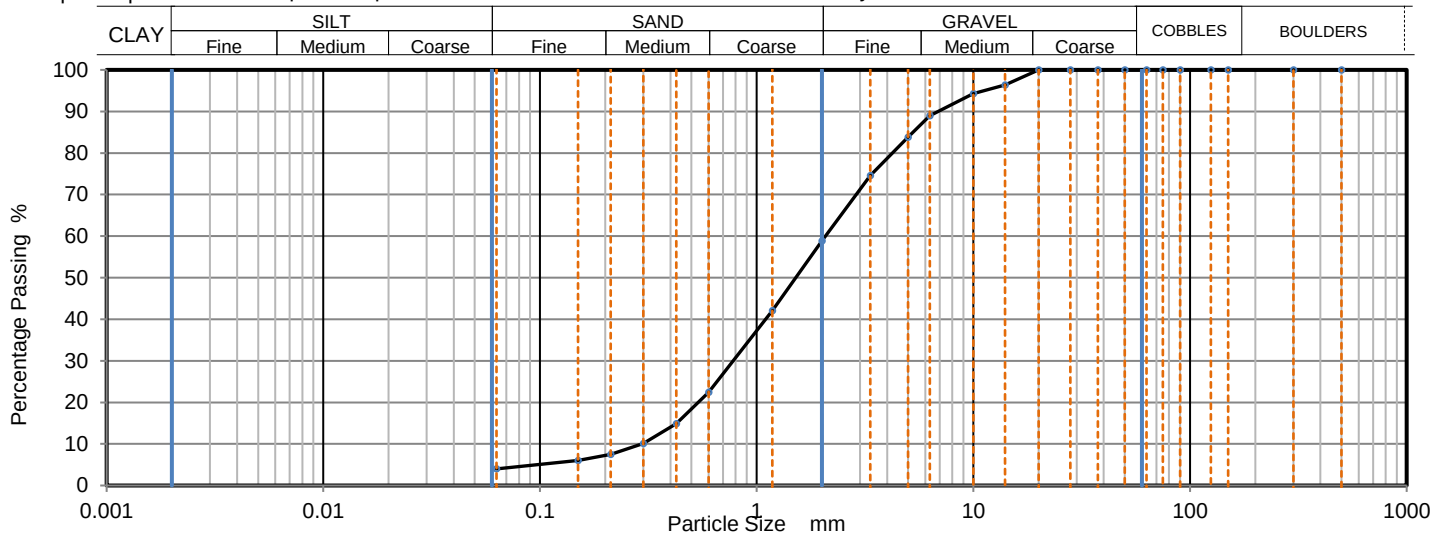
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 15/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521250
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 5.70
Depth Base [m]: 7.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	94		
6.3	89		
5	84		
3.35	75		
2	59		
1.18	42		
0.6	22		
0.425	15		
0.3	10		
0.212	8		
0.15	6		
0.063	5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	41
Sand	54
Fines <0.063mm	5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	7
Curvature Coefficient	0.99

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

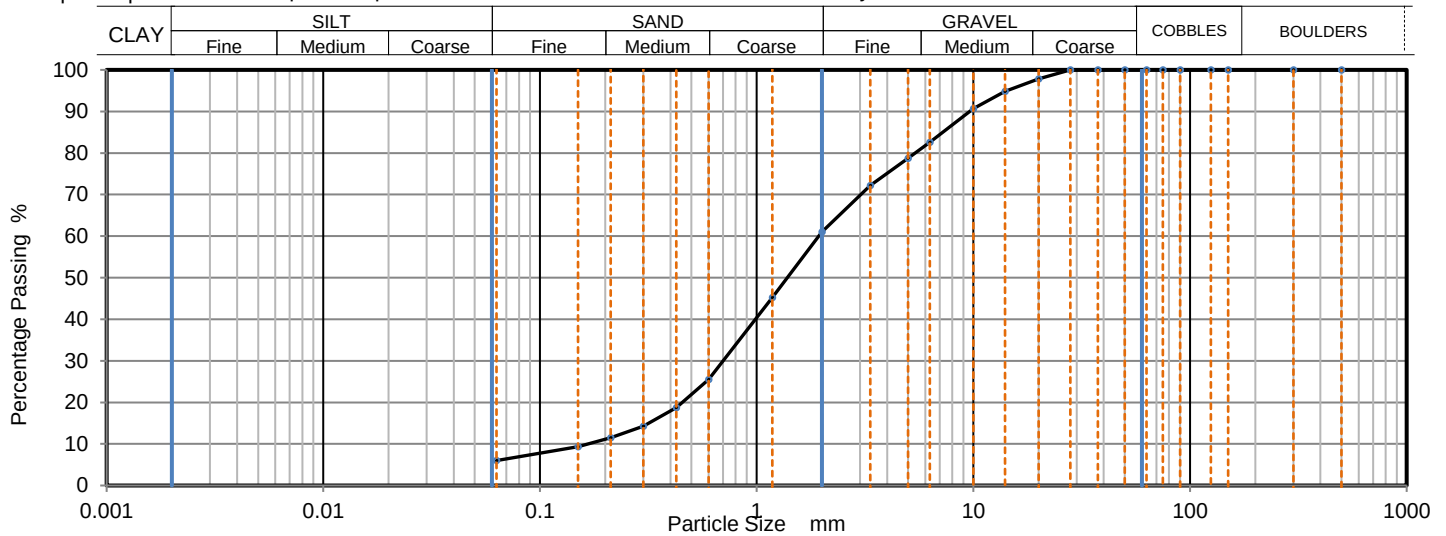
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521256
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 1.20
Depth Base [m]: 2.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	95		
10	91		
6.3	83		
5	79		
3.35	72		
2	61		
1.18	45		
0.6	26		
0.425	19		
0.3	14		
0.212	12		
0.15	9		
0.063	7		

Sample Proportions	% dry mass
Very coarse	0
Gravel	39
Sand	54
Fines <0.063mm	7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	12
Curvature Coefficient	1.5

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

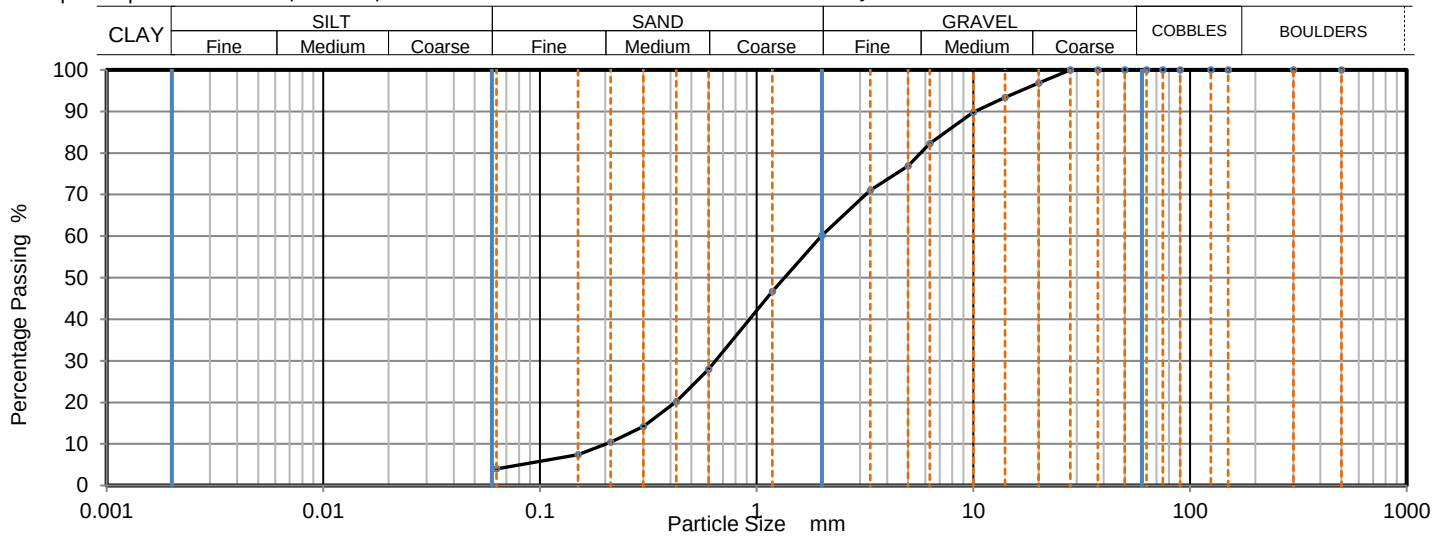
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521257
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 4.20
Depth Base [m]: 5.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	93		
10	90		
6.3	82		
5	77		
3.35	71		
2	60		
1.18	47		
0.6	28		
0.425	20		
0.3	14		
0.212	10		
0.15	7		
0.063	5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	40
Sand	56
Fines <0.063mm	5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	9.8
Curvature Coefficient	1

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

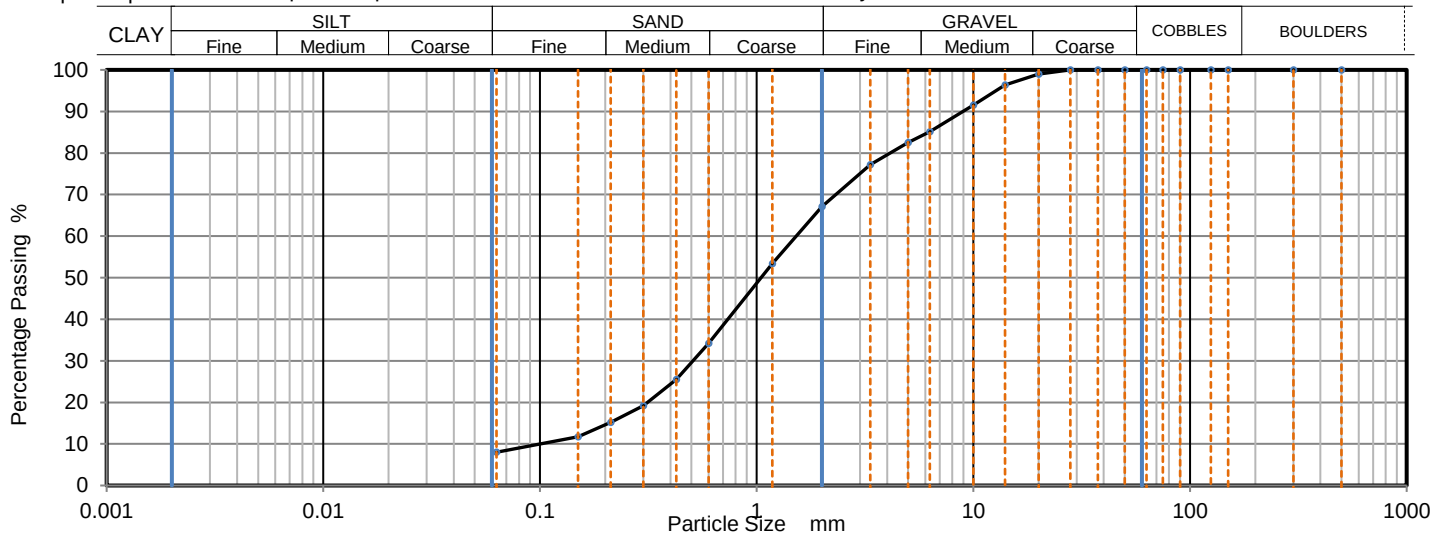
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521258
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 5.70
Depth Base [m]: 7.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	96		
10	92		
6.3	85		
5	83		
3.35	77		
2	67		
1.18	53		
0.6	34		
0.425	26		
0.3	19		
0.212	15		
0.15	12		
0.063	9		

Sample Proportions	% dry mass
Very coarse	0
Gravel	33
Sand	58
Fines <0.063mm	9

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	17
Curvature Coefficient	1.8

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

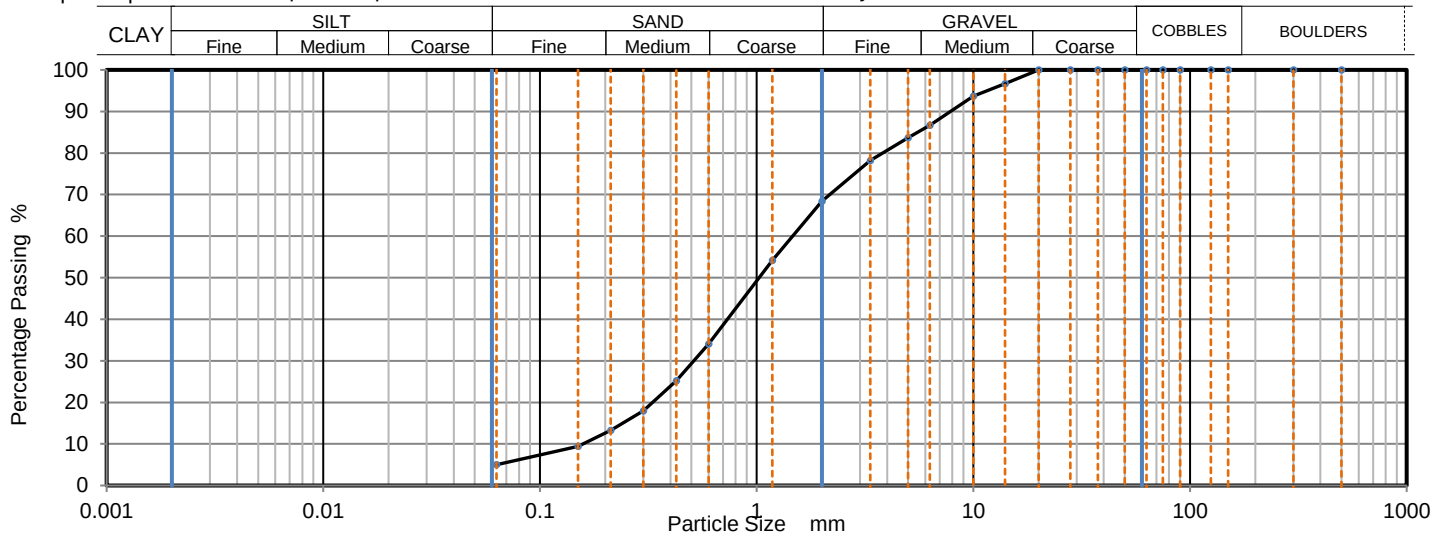
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521259
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 7.20
Depth Base [m]: 8.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	97		
10	94		
6.3	87		
5	84		
3.35	78		
2	68		
1.18	54		
0.6	34		
0.425	25		
0.3	18		
0.212	13		
0.15	9		
0.063	5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	32
Sand	63
Fines <0.063mm	5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	9.3
Curvature Coefficient	1.1

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna
Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

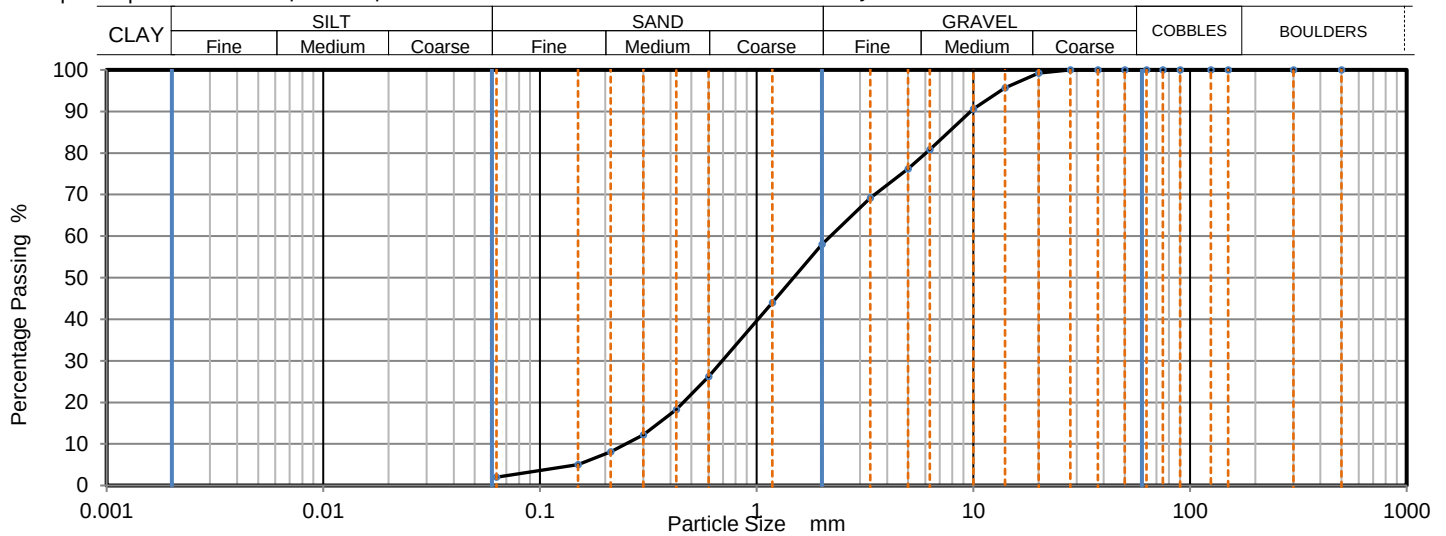
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521260
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 11.70
Depth Base [m]: 13.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	96		
10	91		
6.3	81		
5	76		
3.35	69		
2	58		
1.18	44		
0.6	26		
0.425	18		
0.3	12		
0.212	8		
0.15	5		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	42
Sand	56
Fines <0.063mm	2

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

TEST CERTIFICATE**DETERMINATION OF DRY DENSITY/MOISTURE
CONTENT RELATIONSHIP METHOD USING
2.5 KG RAMMER**

Tested in Accordance with: BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

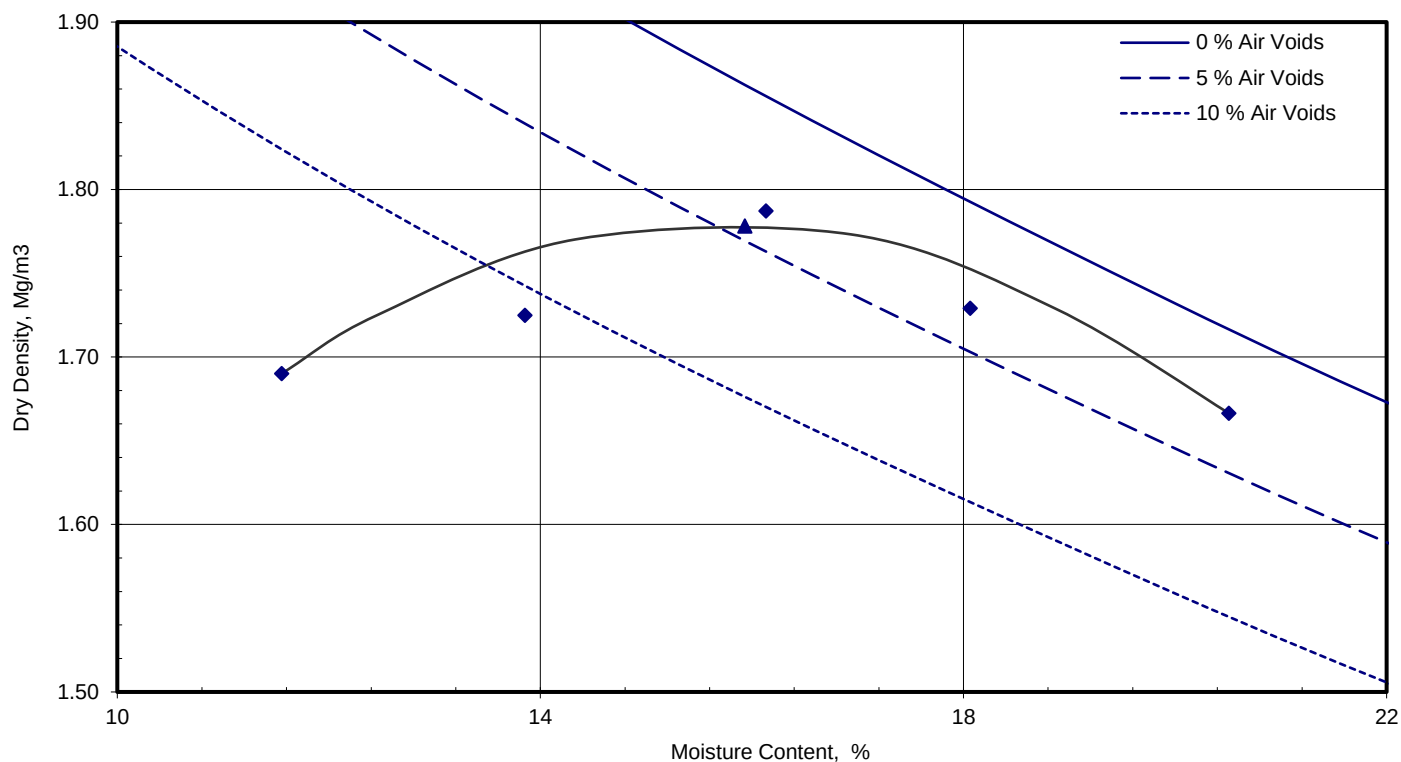
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 19/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521235
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy GRAVEL with fragments of brick, some cobbles
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 1.20
Depth Base [m]: 1.80
Sample Type: B



Compaction Point No.	1	2	3	4	5	
Moisture Content	%	12	14	16	18	21
Dry Density	Mg/m³	1.69	1.72	1.79	1.73	1.67

Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	45
Material Retained on 20.0 mm Sieve	%	55
Particle Density - Assumed	Mg/m³	2.65
As received Moisture Content	%	20
Maximum Dry Density	Mg/m³	1.78

Optimum Moisture Content	%	16
--------------------------	---	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.4 using 2.5kg [light] Rammer

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP METHOD USING 2.5 KG RAMMER

Tested in Accordance with: BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

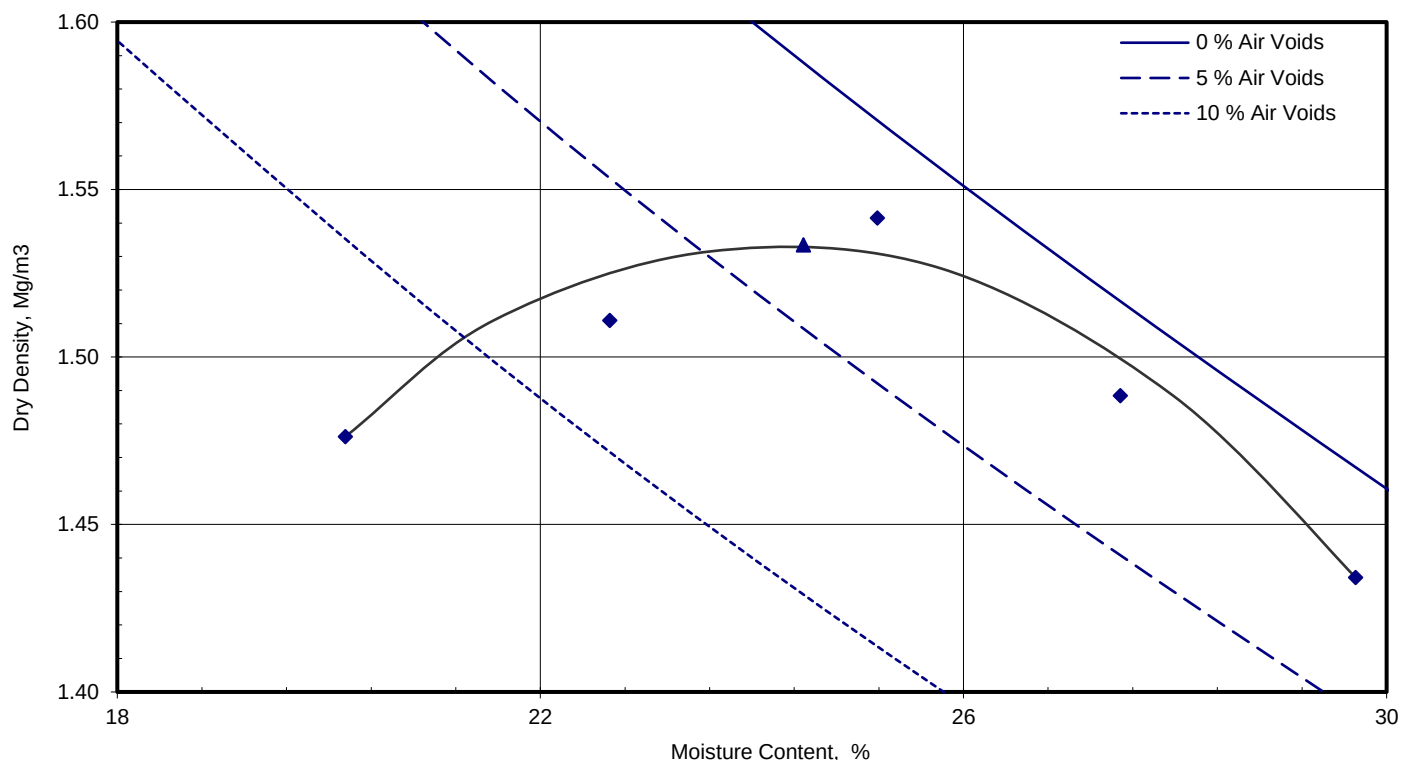
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 19/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521237
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 2.70
Depth Base [m]: 4.20
Sample Type: B



Compaction Point No.	1	2	3	4	5
Moisture Content	20	23	25	27	30
Dry Density	1.48	1.51	1.54	1.49	1.43

Mould Type	1 Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	0
Material Retained on 20.0 mm Sieve	2
Particle Density - Assumed	2.60
As received Moisture Content	58
Maximum Dry Density	1.53

Optimum Moisture Content	24
--------------------------	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP METHOD USING 2.5 KG RAMMER

Tested in Accordance with: BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

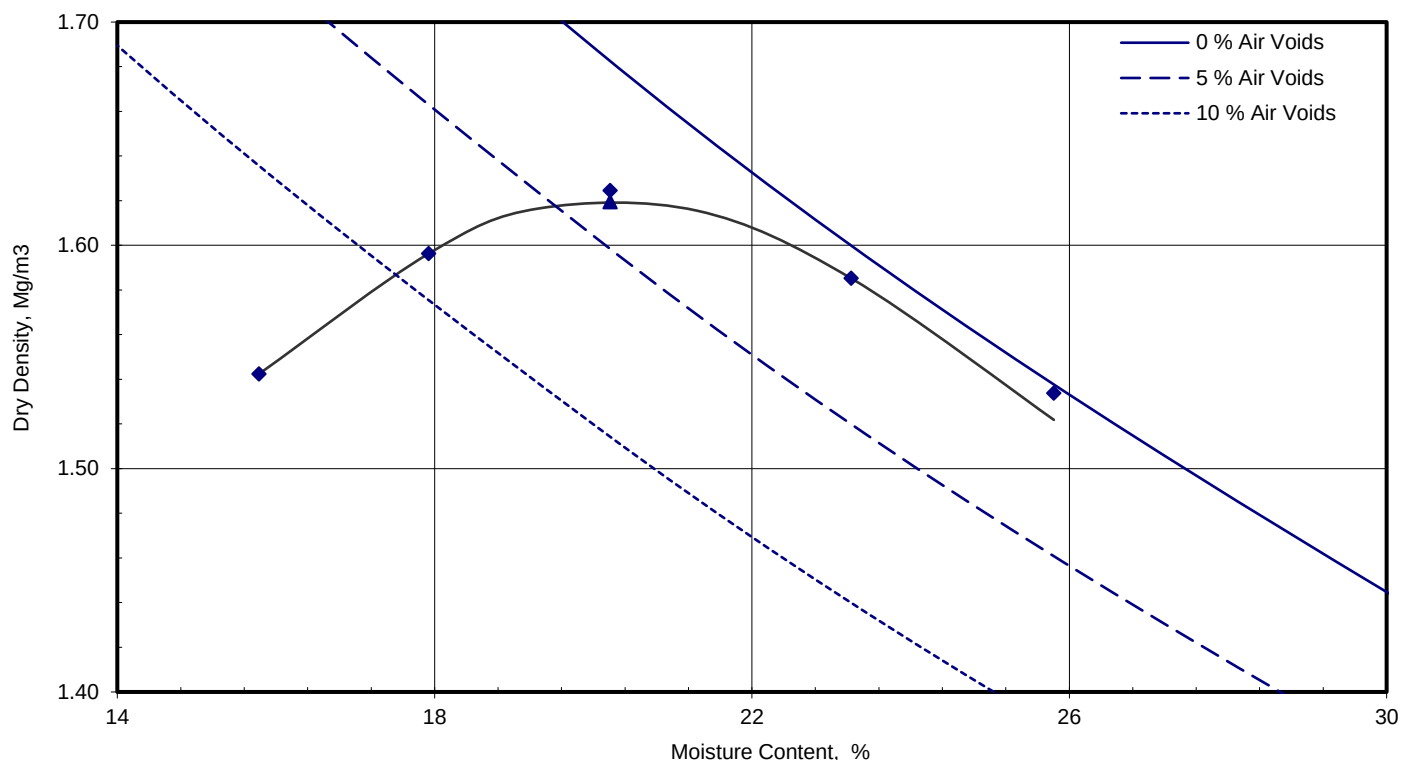
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 19/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521240
Hole No.: ENBH2
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 1.20
Depth Base [m]: 2.70
Sample Type: B



Compaction Point No.	1	2	3	4	5
Moisture Content %	16	18	20	23	26
Dry Density Mg/m³	1.54	1.60	1.62	1.59	1.53

Mould Type	1 Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve %	0
Material Retained on 20.0 mm Sieve %	0
Particle Density - Assumed Mg/m³	2.55
As received Moisture Content %	32
Maximum Dry Density Mg/m³	1.62

Optimum Moisture Content %	20
----------------------------	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP METHOD USING 2.5 KG RAMMER

Tested in Accordance with: BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

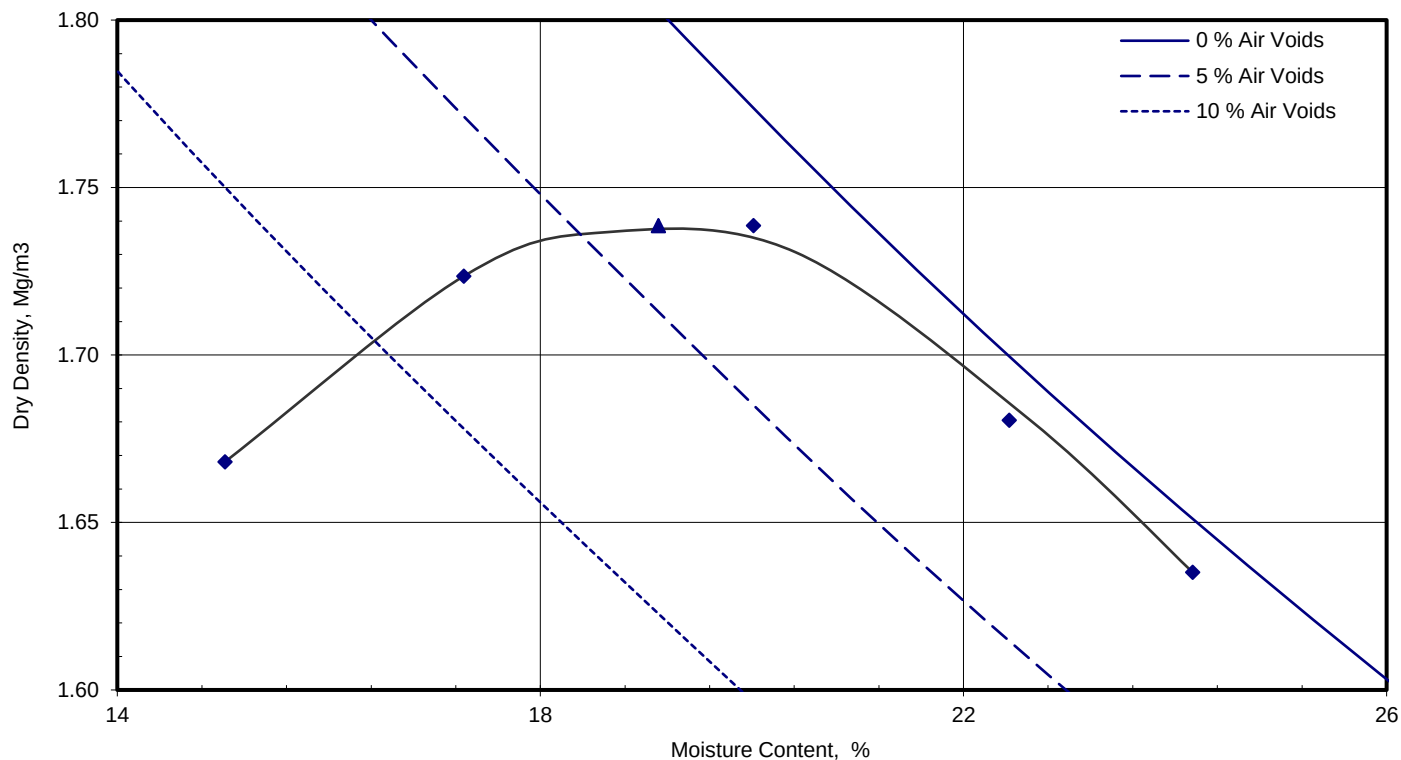
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 19/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521248
Hole No.: ENBH4
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 13.20
Depth Base [m]: 13.80
Sample Type: B



Compaction Point No.	1	2	3	4	5
Moisture Content	15	17	20	22	24
Dry Density	1.67	1.72	1.74	1.68	1.64

Mould Type	CBR
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	0
Material Retained on 20.0 mm Sieve	9
Particle Density - Assumed	2.75
As received Moisture Content	14
Maximum Dry Density	1.74

Optimum Moisture Content	19
--------------------------	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.4 using 2.5kg [light] Rammer

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP METHOD USING 2.5 KG RAMMER

Tested in Accordance with: BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

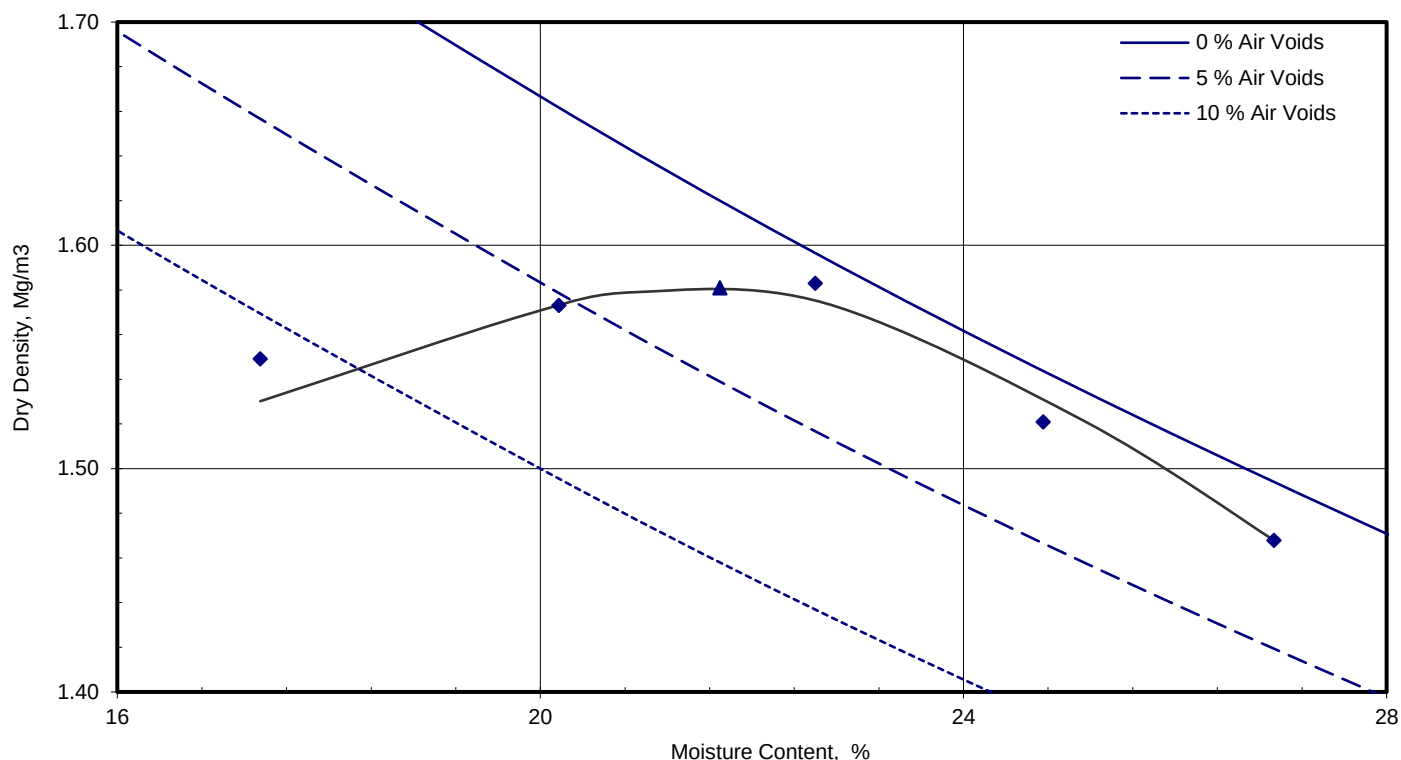
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 19/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521256
Hole No.: ENBH5
Sample Reference: Not Given
Sample Description: Black SLAG
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 1.20
Depth Base [m]: 2.70
Sample Type: B



Compaction Point No.	1	2	3	4	5
Moisture Content %	17	20	23	25	27
Dry Density Mg/m³	1.55	1.57	1.58	1.52	1.47

Mould Type	1 Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve %	0
Material Retained on 20.0 mm Sieve %	0
Particle Density - Assumed Mg/m³	2.50
As received Moisture Content %	43
Maximum Dry Density Mg/m³	1.58

Optimum Moisture Content %	22
----------------------------	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEARBOX APPARATUS)

Tested in Accordance with: BS 1377-7:1990: Clause 4.5.4

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521235
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy GRAVEL with fragments of brick, some cobbles

Depth Top [m]: 1.20
Depth Base [m]: 1.80
Sample Type: B

Preparation Details Sample carried out on lump

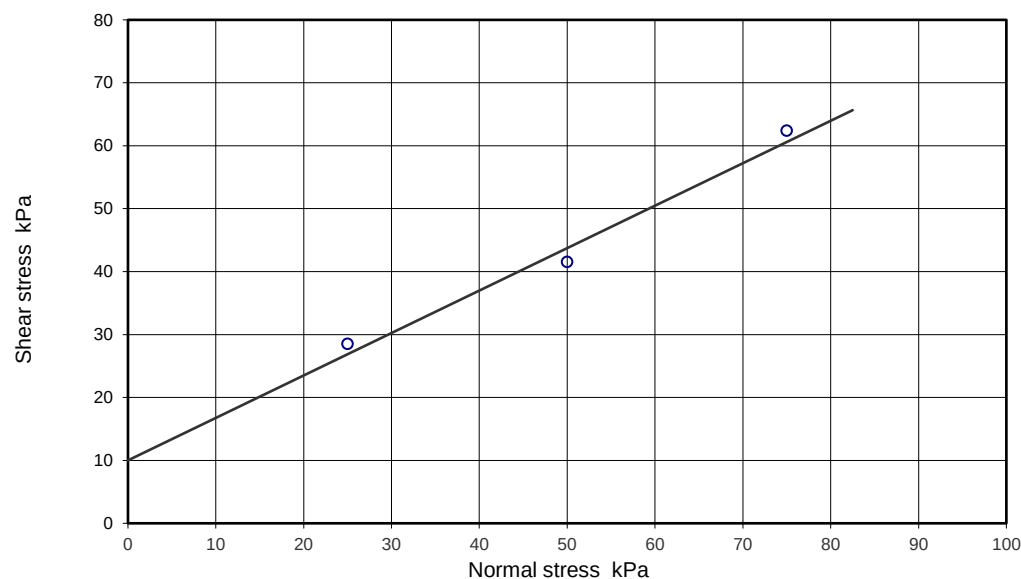
Specimen Details

Test No.

		1	2	3			
Initial	Height	20.0	20.0	20.0			mm
	Length	60.2	60.2	60.2			mm
	Breadth	60.2	60.2	60.2			mm
	Particle Density - (assumed)	2.65	2.65	2.65			Mg/m ³
	Bulk Density	1.85	1.85	1.85			Mg/m ³
	Moisture Content	27.3	27.3	27.3			%
	Dry density	1.45	1.45	1.45			Mg/m ³
	Voids ratio	0.828	0.828	0.828			
Consolidation	Degree of Saturation	87	87	87			%
	Consolidation / Normal Stress applied	25	50	75			kPa
	Change in height during consolidation	1.151	1.853	2.175			mm
After test	Voids ratio after consolidation	0.723	0.659	0.629			
	Final Moisture content	30.2	28.8	25.5			%

Shearing stage(s)

Rate of displacement	Peak	0.01353	0.01353	0.01353			mm/min
	Residual						mm/min
Peak values, (o)	Relative horizontal displacement	9.63	4.39	4.87			mm
	Shear stress	28.5	41.5	62.4			kPa
	Vertical Movement at peak shear stress	0.06	0.15	0.37			mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1			
	Relative horizontal displacement						mm
	Shear stress						kPa
	Vertical movement at residual shear stress						mm



Total test time 2 days

Shear Strength Parameters

Peak strength, (o)	Regression	Manual
c'	kPa	10
Ø'	degrees	34.0

Residual strength, (x)

c'R	kPa	not assessed	-
Ø'R	degrees	not assessed	-

Remarks: Tested under RED LAB condition.

Signed:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (SMALL SHEARBOX APPARATUS)

Tested in Accordance with: BS 1377-7:1990: Clause 4.5.4

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

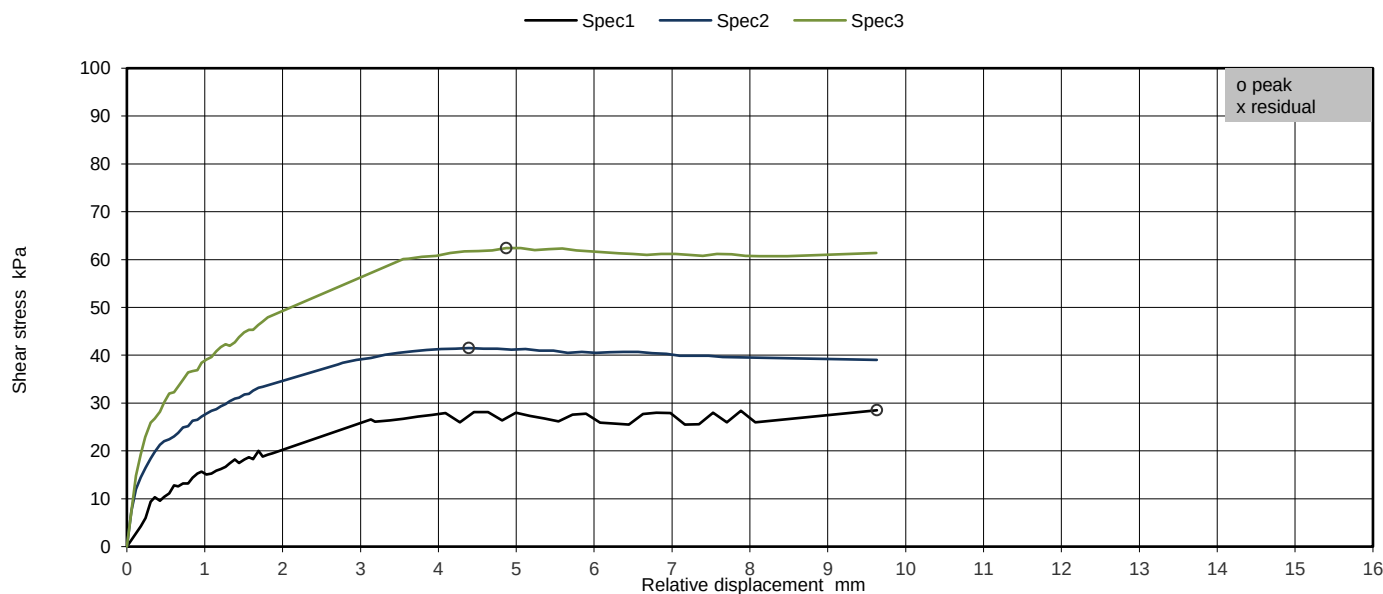
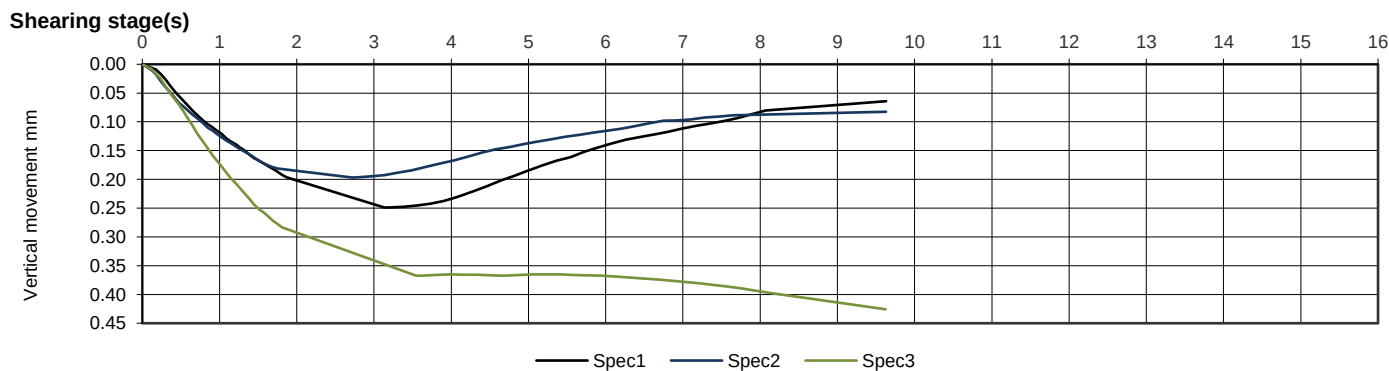
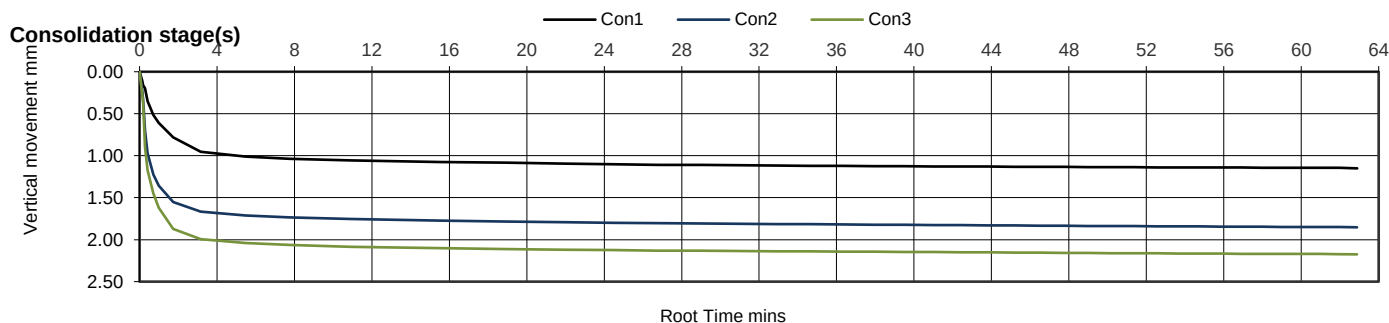
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 16/12/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2521235
Hole No.: ENBH1
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy GRAVEL with fragments of brick, some cobbles

Depth Top [m]: 1.20
Depth Base [m]: 1.80
Sample Type: B



Remarks: Tested under RED LAB condition.

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

TEST CERTIFICATE**DETERMINATION OF SHEAR STRENGTH
BY DIRECT SHEAR
(LARGE SHEARBOX APPARATUS)**

Tested in Accordance with: BS 1377-7:1990: Clause 5.5.4

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 30/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2557289
Hole No.: ENBH1+ENBH2+ENBH4+ENBH5
Sample Reference: Combined
Sample Description: Black SLAG

Depth Top [m]: 1.20
Depth Base [m]: 4.20
Sample Type: B

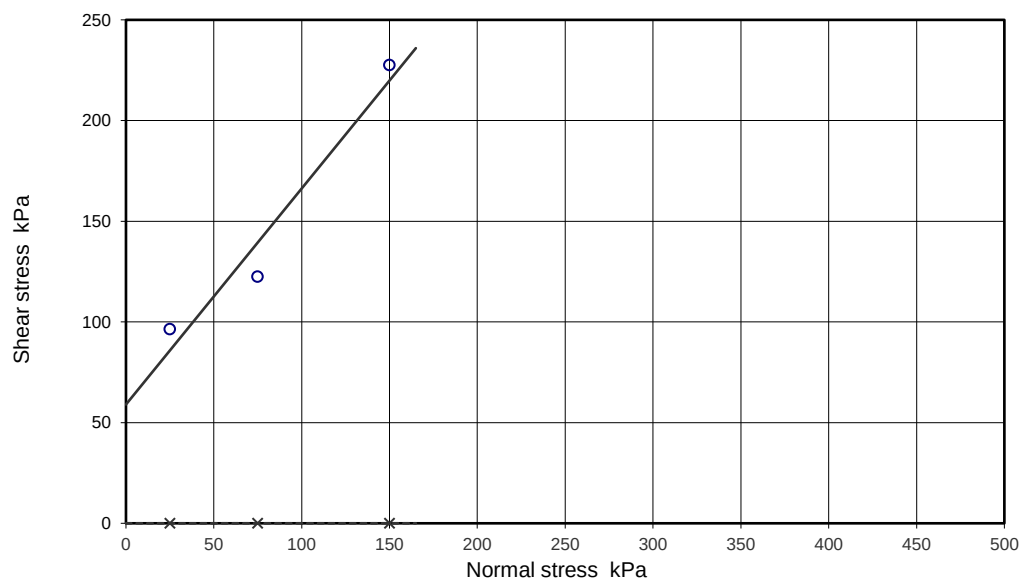
Preparation Details**Specimen Details**

Test No.

		1	2	3			
Initial	Height	140.0	140.0	140.0			mm
	Length	300.0	300.0	300.0			mm
	Breadth	300.0	300.0	300.0			mm
	Particle Density - (assumed)	2.65	2.65	2.65			Mg/m ³
	Bulk Density	1.87	1.87	1.87			Mg/m ³
	Moisture Content	16.0	16.0	16.0			%
	Dry density	1.61	1.61	1.61			Mg/m ³
	Voids ratio	0.646	0.646	0.646			
Consolidation	Degree of Saturation	66	66	66			%
	Consolidation / Normal Stress applied	25	75	150			kPa
	Change in height during consolidation	1.002	1.262	1.601			mm
After test	Voids ratio after consolidation	0.634	0.631	0.627			
	Final Moisture Content	16.0	15.8	15.5			%

Shearing stage(s)

Rate of displacement	Peak	1.00000	1.00000	1.00000			mm/min
	Residual						mm/min
Peak values, (o)	Relative horizontal displacement	8.09	11.99	17.12			mm
	Shear stress	96.4	122.4	227.6			kPa
	Vertical Movement at peak shear stress	-2.12	-1.28	-0.81			mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1			
	Relative horizontal displacement						mm
	Shear stress						kPa
	Vertical movement at residual shear stress						mm



Total test time <1 days

Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	59	-
Ø'	degrees	47.0	-

Residual strength, (x)

c' _R	kPa	not assessed	-
Ø' _R	degrees	not assessed	-

Remarks:

Test carried out on material passing 20 mm; Pressures as client requested 25/75/150 kPa; Target Dry Density 1.58-1.65 Mg/m³; Target Moisture Content 16.0 %; Recompacted using 4.5 kg Hammer; Rate of displacement 1 mm/min; Sample not immersed in water as per Specification for Highway Works Series 600 Clause 636. Tested under RED LAB condition

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR (LARGE SHEARBOX APPARATUS)

Tested in Accordance with: BS 1377-7:1990: Clause 5.5.4

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Geotechnical Engineering Ltd
Client Address: Centurion House, Olympus Park,
Quedgeley, Gloucester,
GL2 4NF
Contact: Tom Best
Site Address: Coed Darcy

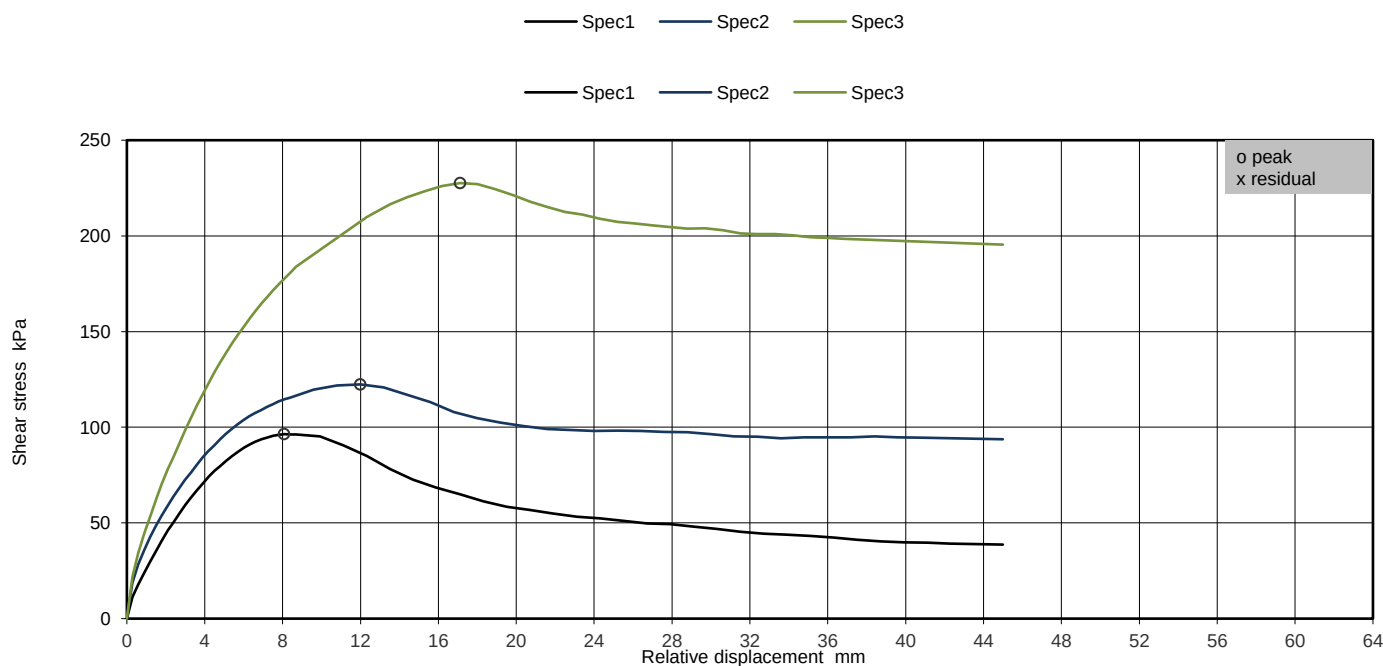
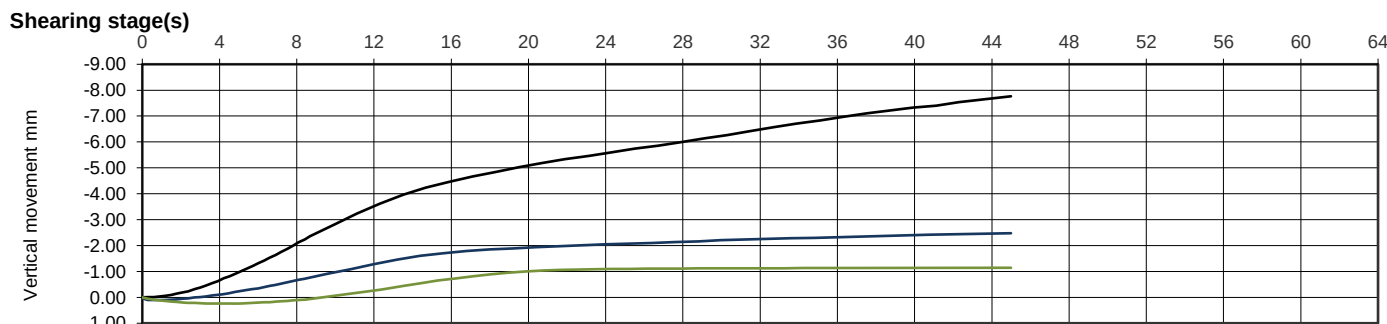
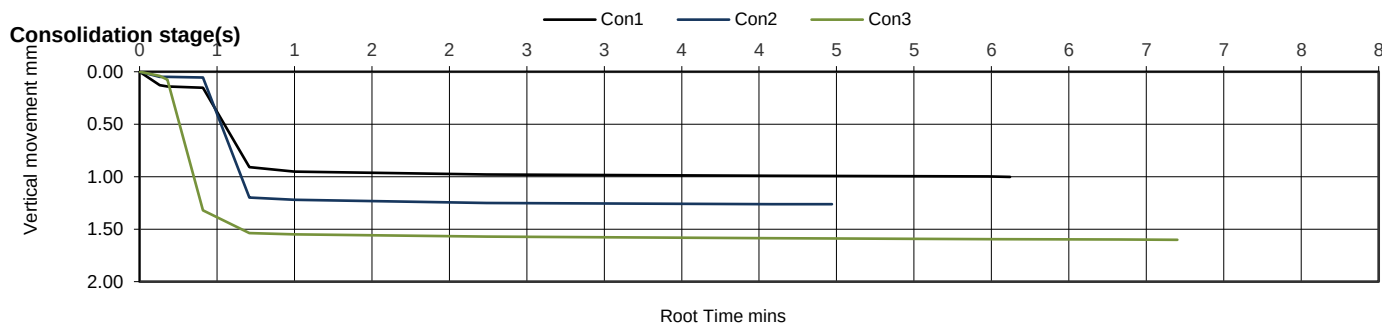
Client Reference: 6339
Job Number: 22-11269
Date Sampled: Not Given
Date Received: 05/12/2022
Date Tested: 30/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2557289
Hole No.: ENBH1+ENBH2+ENBH4+ENBH5
Sample Reference: Combined
Sample Description: Black SLAG

Depth Top [m]: 1.20
Depth Base [m]: 4.20
Sample Type: B



Remarks:

Test carried out on material passing 20 mm; Pressures as client requested 25/75/150 kPa; Target Dry Density 1.58-1.65 Mg/m³; Target Moisture Content 16.0 %; Recompacted using 4.5 kg Hammer; Rate of displacement 1 mm/min; Sample not immersed in water as per Specification for Highway Works Series 600 Clause 636. Tested under RED LAB condition

Signed:

Katarzyna
Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

DETERMINATION OF SHEAR STRENGTH BY
HAND VANE



CLIENT ENGLOBE

SITE COED DARCY

borehole /trial pit no.	sample		specimen depth (m)	vane strength				description and remarks
	no./type	depth (m)		reading 1 (kPa)	reading 2 (kPa)	reading 3 (kPa)	average (kPa)	
ENBH1	U	10.50	10.50	13	9	8	10	Greyish brown slightly gravelly slightly sandy silty CLAY
ENBH2	L	10.20	11.05	12	12	15	13	Greyish brown slightly gravelly slightly sandy clayey SILT
general remarks Re* - denotes vane test refusal								
							CONTRACT 37330	CHECKED WNJ

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH2

SAMPLE No./TYPE L

SAMPLE DEPTH (m) 11.70-12.20

DESCRIPTION Brown mottled grey slightly gravelly slightly sandy clayey SILT
SPECIMEN DEPTH (m) 11.70-11.90

TYPE OF SPECIMEN Recompacted / Vertical
TYPE OF TEST Single Specimen Single Stage
SIDE DRAINS FITTED Yes
DRAINAGE CONDITIONS One end and radial boundary

		SPECIMEN	1
INITIAL CONDITIONS	Length	mm	204.98
	Diameter	mm	104.3
	Water Content	%	9.7
	Bulk Density	Mg/m ³	1.93
	Dry Density	Mg/m ³	1.76
FINAL CONDITIONS	Water Content	%	16.9
	Bulk Density	Mg/m ³	2.20
	Dry Density	Mg/m ³	1.88
	Initial PWP	kPa	-3
SATURATION (by cell pressure and back pressure increments)	Saturated PWP	kPa	289
	Final Cell Pressure	kPa	300
	B Value		0.98
	Duration	Days	5
	Cell Pressure	kPa	420
CONSOLIDATION	Back Pressure	kPa	300
	Initial PWP	kPa	410
	Final PWP	kPa	303
	Vertical Strain	%	2.096
	Volumetric Strain	%	6.287
	Volumetric Strain Rate	%/hr	0.022
	Duration	Days	12
	Cell Pressure	kPa	420
	Back Pressure	kPa	300
	σ_3	kPa	89
COMPRESSION	Rate of Strain	%/hr	0.22174
	Duration	Days	3
	Strain (ϵ)	%	16.8
	δu	kPa	27
	σ_{3f}	kPa	62
FAILURE CONDITIONS (based on maximum deviator stress)	$(\sigma_1 - \sigma_3)_f$	kPa	121

Membrane correction of 0.1kPa/% strain applied to deviator stress.

Side drain correction of 3.5kPa applied to deviator stress (100mm diameter)

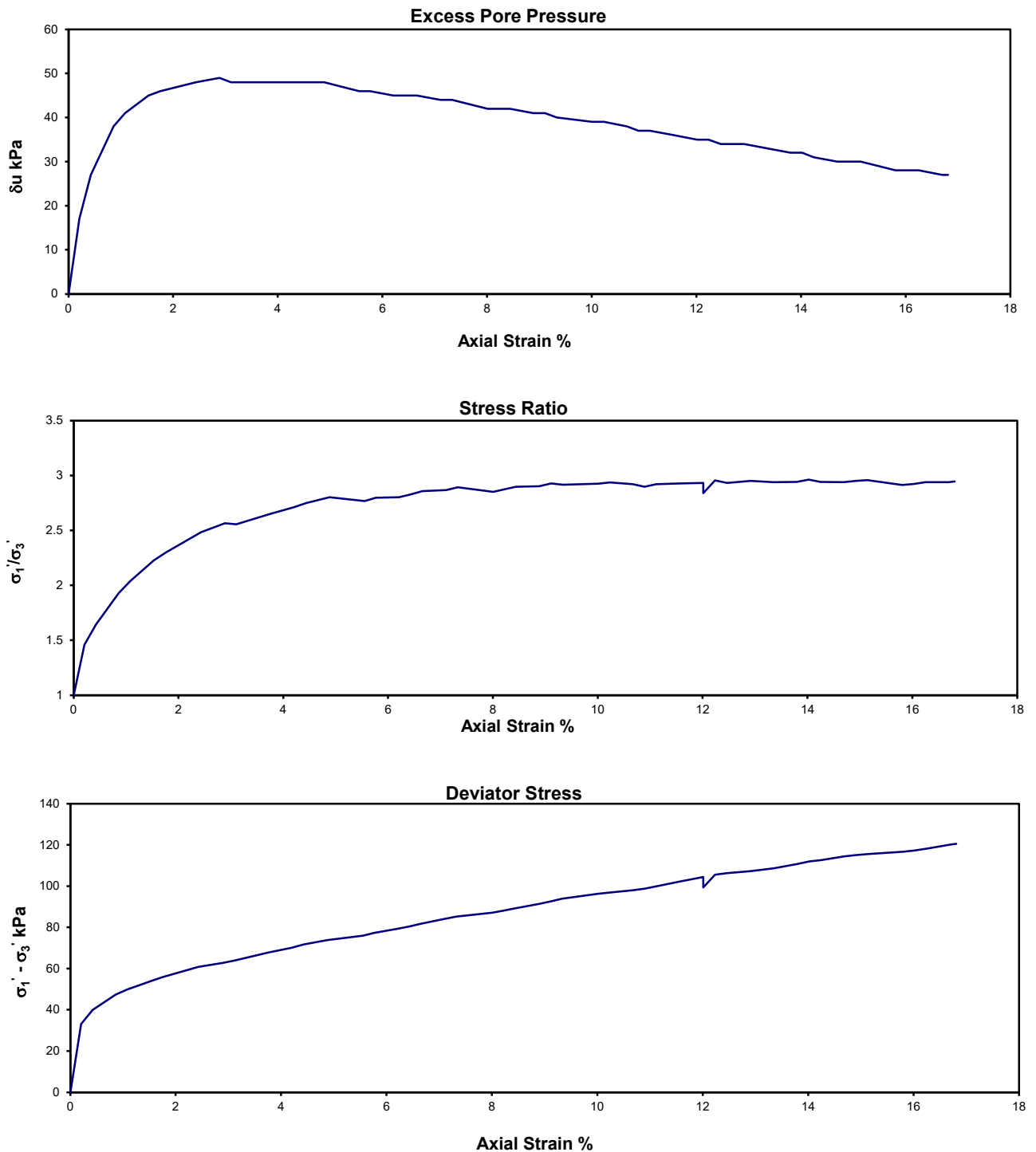
FAILURE MODE (see photo)	BARREL	EFFECTIVE STRESS PARAMETERS	c' kPa :	ϕ' deg :
			CONTRACT	CHECKED
remarks	Sample recompacted using a 2.5kg rammer, 3 layers with 27 blows		37330	NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH2
SAMPLE No./TYPE L
SAMPLE DEPTH (m) 11.70-12.20
SPECIMEN DEPTH (m) 11.70-11.90



remarks

CONTRACT

CHECKED

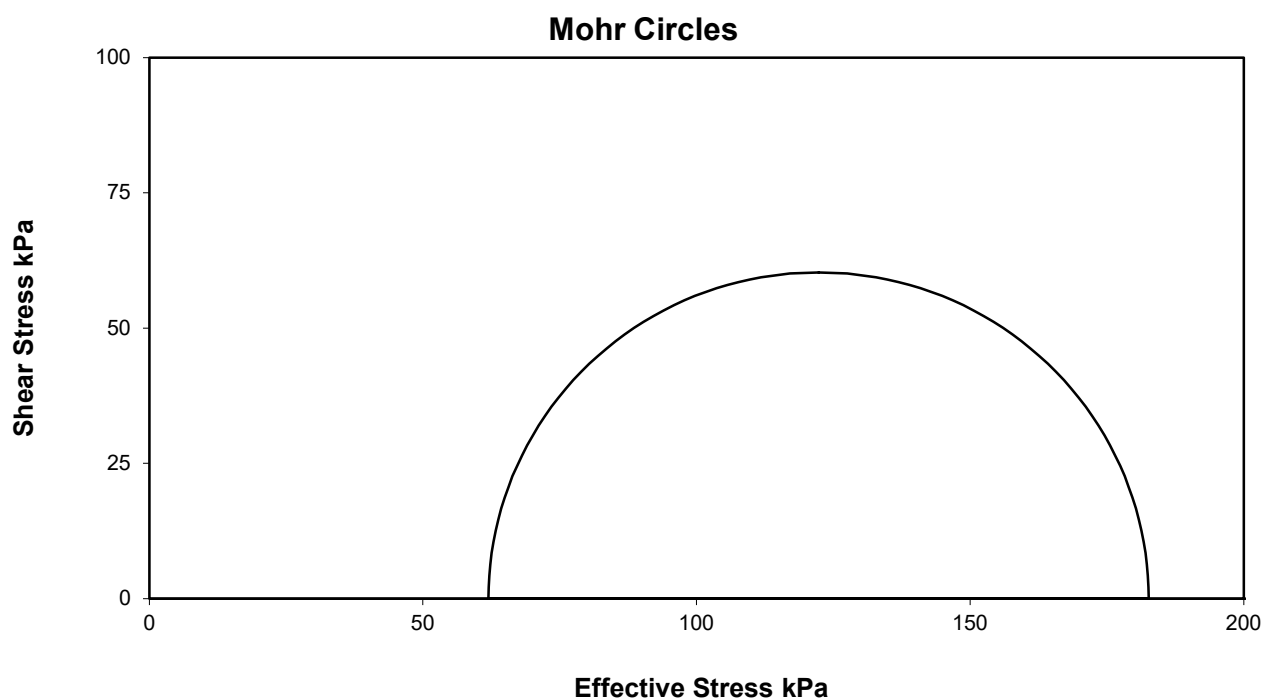
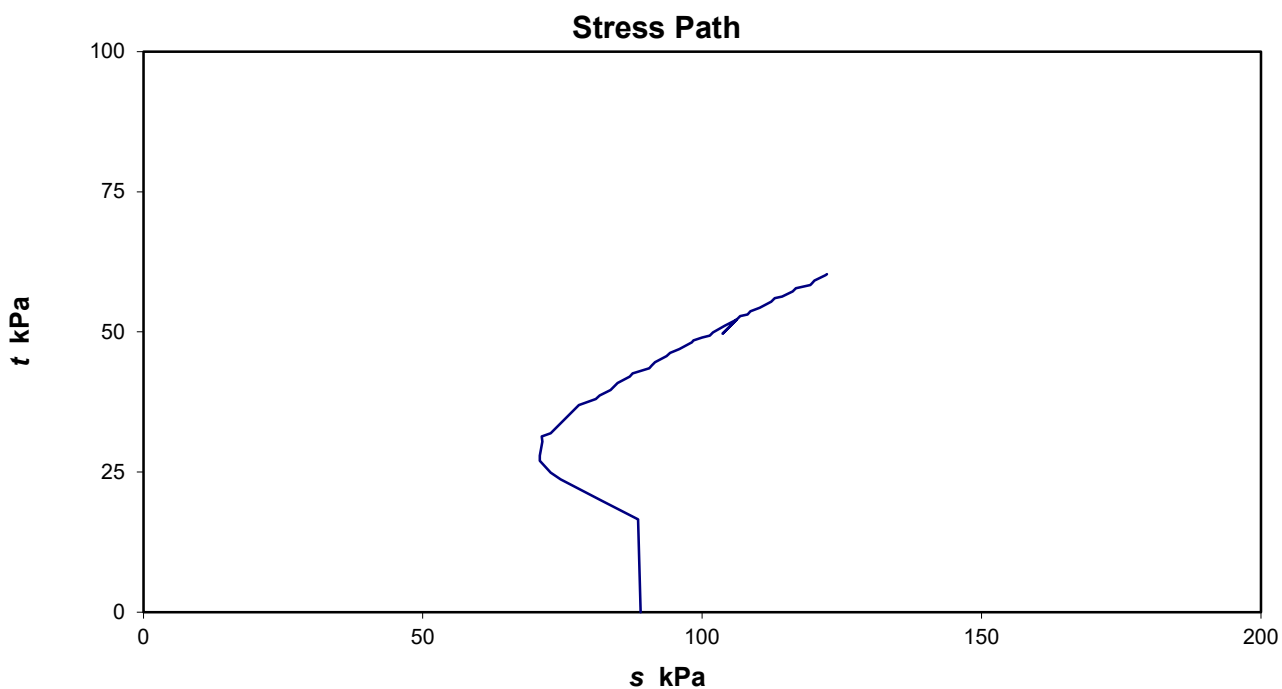
37330**NP**

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH2
SAMPLE No./TYPE L
SAMPLE DEPTH (m) 11.70-12.20
SPECIMEN DEPTH (m) 11.70-11.90



remarks

CONTRACT

37330

CHECKED

NP

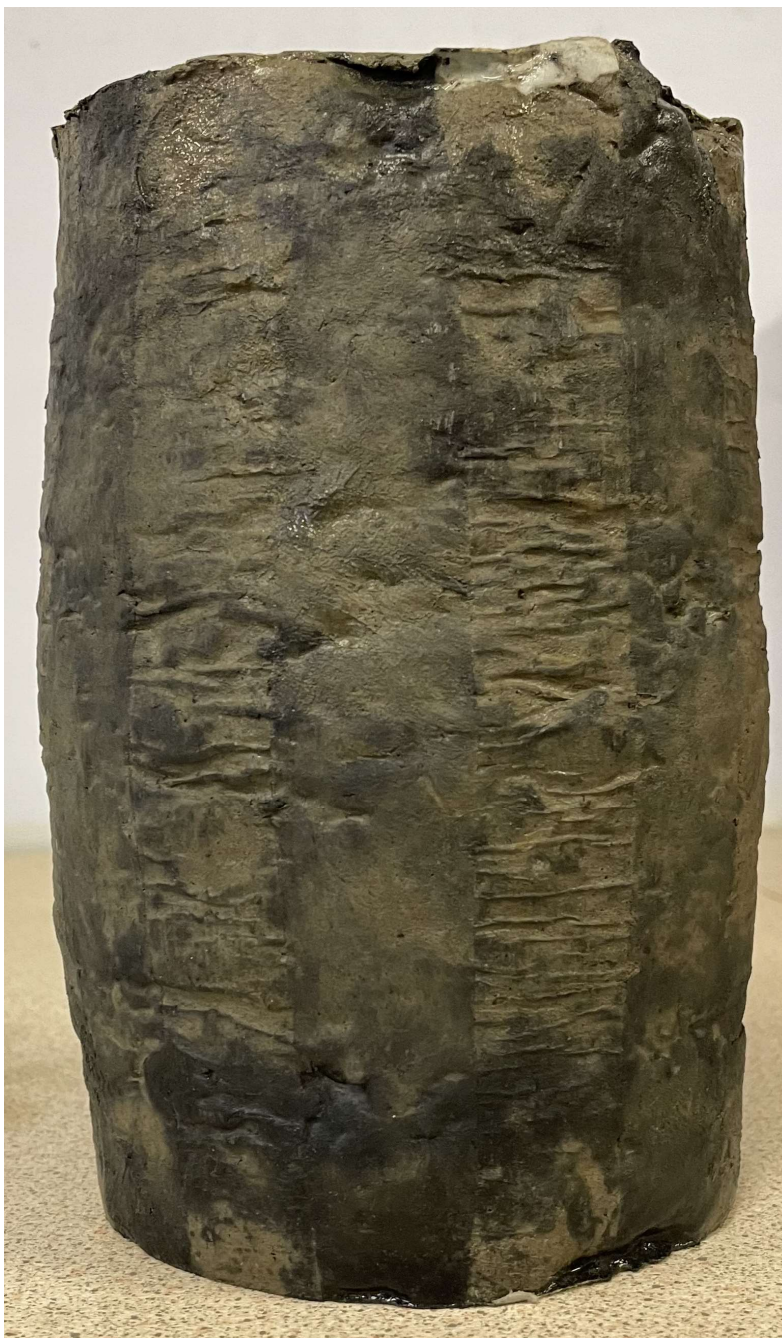
CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP



BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH2
SAMPLE No./TYPE L
SAMPLE DEPTH (m) 11.70-12.20
SPECIMEN DEPTH (m) 11.70-11.90



Failure Mode

BARREL

remarks

Please note the photos are intended to show the mode of failure only.

CONTRACT

37330

CHECKED

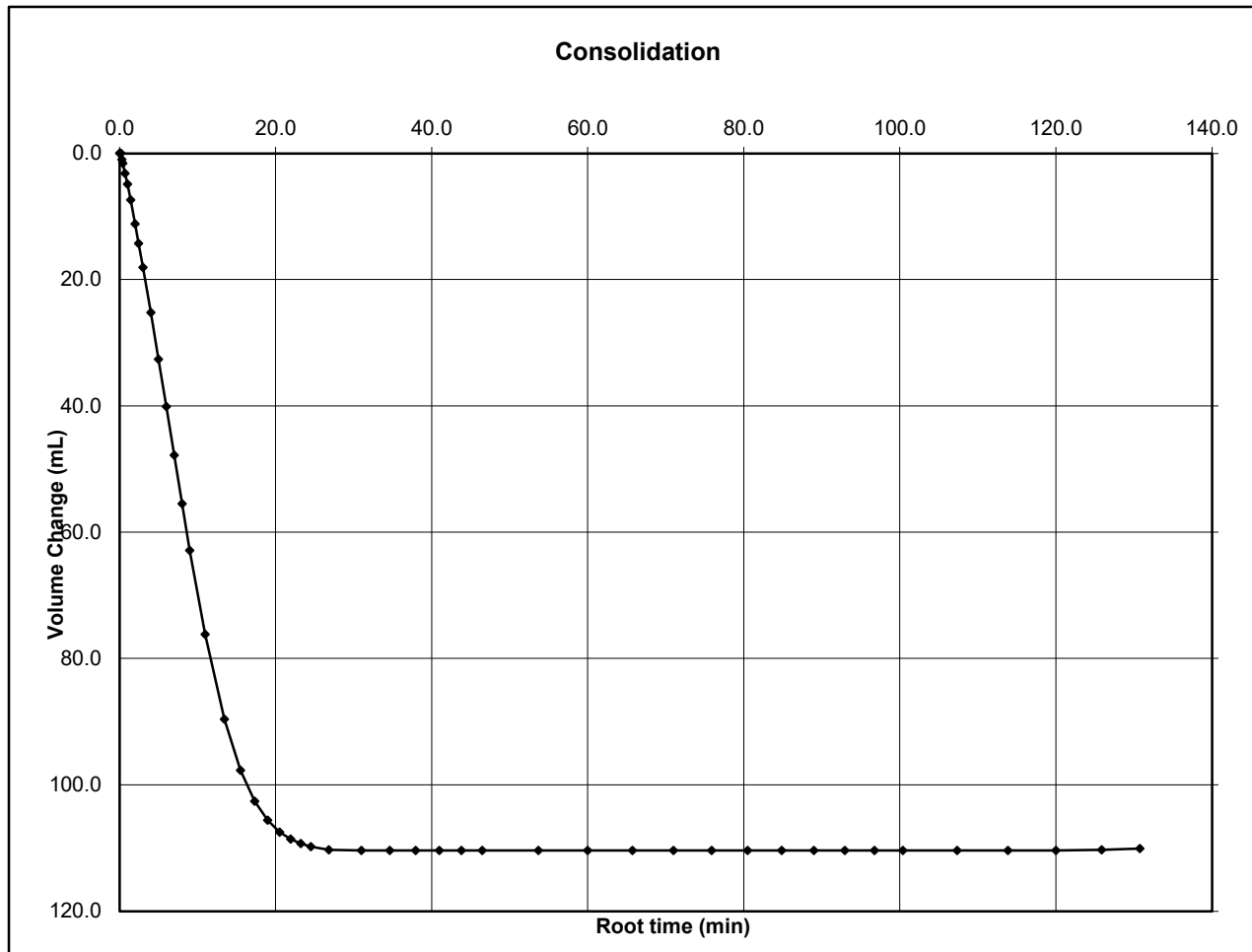
NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH2
SAMPLE No./TYPE L
SAMPLE DEPTH (m) 11.70-12.20
SPECIMEN DEPTH (m) 11.70-11.90



Cell pressure	kPa	420
Back pressure	kPa	300
Effective pressure	kPa	120
Initial PWP	kPa	410
Final PWP	kPa	303
PWP Dissipation	%	97.27
Volume change	mL	110.4
	t100	1202.58

remarks

CONTRACT

37330

CHECKED

NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE

BH/TP No.

ENBH5

SITE COED DARCY

SAMPLE No./TYPE

C

DESCRIPTION Brown very gravelly silty SAND

SAMPLE DEPTH (m)

14.90-16.40

SPECIMEN DEPTH (m)

15.00-15.25

TYPE OF SPECIMEN

Undisturbed / Vertical

TYPE OF TEST

Single Specimen Single Stage

SIDE DRAINS FITTED

Yes

DRAINAGE CONDITIONS

One end and radial boundary

		SPECIMEN	1
INITIAL CONDITIONS	Length	mm	194.97
	Diameter	mm	104.26
	Water Content	%	10.7
	Bulk Density	Mg/m ³	2.26
	Dry Density	Mg/m ³	2.04
FINAL CONDITIONS	Water Content	%	11.5
	Bulk Density	Mg/m ³	2.32
	Dry Density	Mg/m ³	2.08
SATURATION (by cell pressure and back pressure increments)	Initial PWP	kPa	0
	Saturated PWP	kPa	597
	Final Cell Pressure	kPa	600
	B Value		1.14
	Duration	Days	11
CONSOLIDATION	Cell Pressure	kPa	690
	Back Pressure	kPa	540
	Initial PWP	kPa	688
	Final PWP	kPa	546
	Vertical Strain	%	0.551
	Volumetric Strain	%	1.652
	Volumetric Strain Rate	%/hr	0.094
COMPRESSION	Duration	Days	1
	Cell Pressure	kPa	690
	Back Pressure	kPa	540
	σ_3	kPa	120
	Rate of Strain	%/hr	0.025
FAILURE CONDITIONS (based on maximum deviator stress)	Duration	Days	1
	Strain (ϵ)	%	6.0
	δu	kPa	-30
	σ_{3f}	kPa	150
	$(\sigma_1 - \sigma_3)_f$	kPa	434

Membrane correction of 0.1kPa/% strain applied to deviator stress.

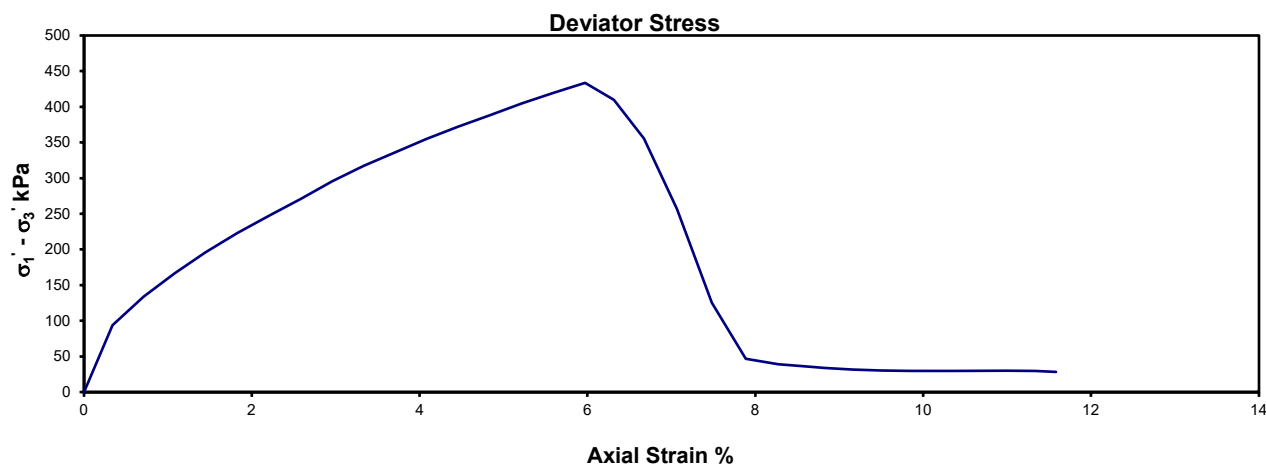
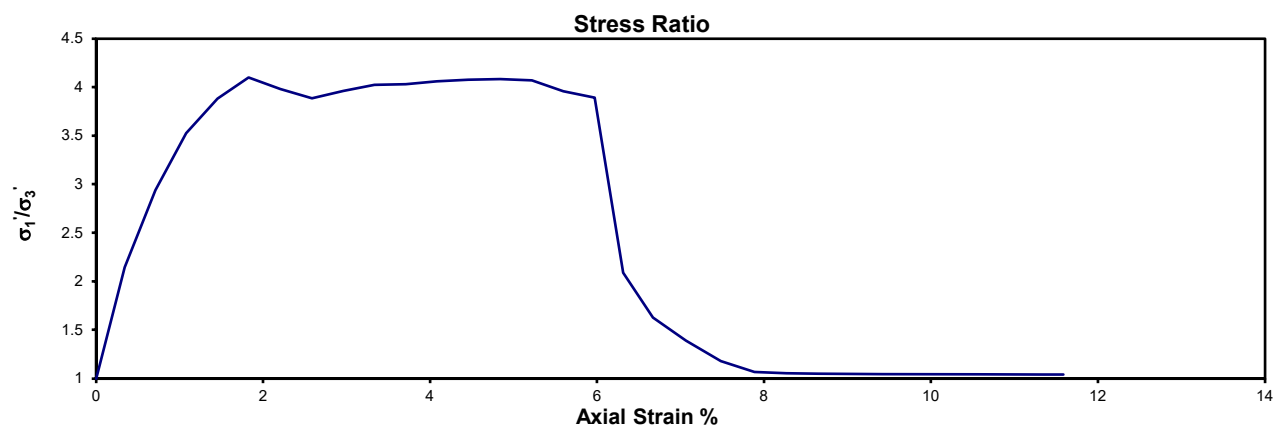
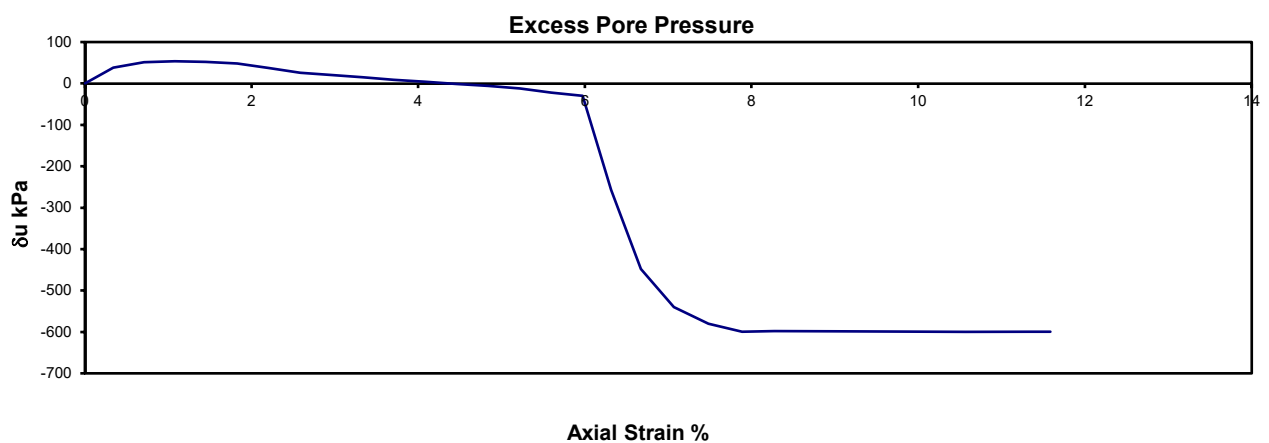
Side drain correction of 3.5kPa applied to deviator stress (100mm diameter)

FAILURE MODE (see photo)	INTER	EFFECTIVE STRESS PARAMETERS	c' kPa :	ϕ' deg :
			CONTRACT	CHECKED
remarks	Pressure lost during the shear stage due to compressor failure		37330	NP



CLIENT ENGLOBE
SITE COED DARCY

BH/TP No.	ENBH5
SAMPLE No./TYPE	C
SAMPLE DEPTH (m)	14.90-16.40
SPECIMEN DEPTH (m)	15.00-15.25



no.	name	date	remarks
1	...	...	...
2	...	...	...
3	...	...	...
4	...	...	...
5	...	...	...
6	...	...	...
7	...	...	...
8	...	...	...
9	...	...	...
10	...	...	...
11	...	...	...
12	...	...	...
13	...	...	...
14	...	...	...
15	...	...	...
16	...	...	...
17	...	...	...
18	...	...	...
19	...	...	...
20	...	...	...
21	...	...	...
22	...	...	...
23	...	...	...
24	...	...	...
25	...	...	...
26	...	...	...
27	...	...	...
28	...	...	...
29	...	...	...
30	...	...	...
31	...	...	...
32	...	...	...
33	...	...	...
34	...	...	...
35	...	...	...
36	...	...	...
37	...	...	...
38	...	...	...
39	...	...	...
40	...	...	...
41	...	...	...
42	...	...	...
43	...	...	...
44	...	...	...
45	...	...	...
46	...	...	...
47	...	...	...
48	...	...	...
49	...	...	...
50	...	...	...
51	...	...	...
52	...	...	...
53	...	...	...
54	...	...	...
55	...	...	...
56	...	...	...
57	...	...	...
58	...	...	...
59	...	...	...
60	...	...	...
61	...	...	...
62	...	...	...
63	...	...	...
64	...	...	...
65	...	...	...
66	...	...	...
67	...	...	...
68	...	...	...
69	...	...	...
70	...	...	...
71	...	...	...
72	...	...	...
73	...	...	...
74	...	...	...
75	...	...	...
76	...	...	...
77	...	...	...
78	...	...	...
79	...	...	...
80	...	...	...
81	...	...	...
82	...	...	...
83	...	...	...
84	...	...	...
85	...	...	...
86	...	...	...
87	...	...	...
88	...	...	...
89	...	...	...
90	...	...	...
91	...	...	...
92	...	...	...
93	...	...	...
94	...	...	...
95	...	...	...
96	...	...	...
97	...	...	...
98	...	...	...
99	...	...	...
100	...	...	...

CONTRACT

37330

CHECKED

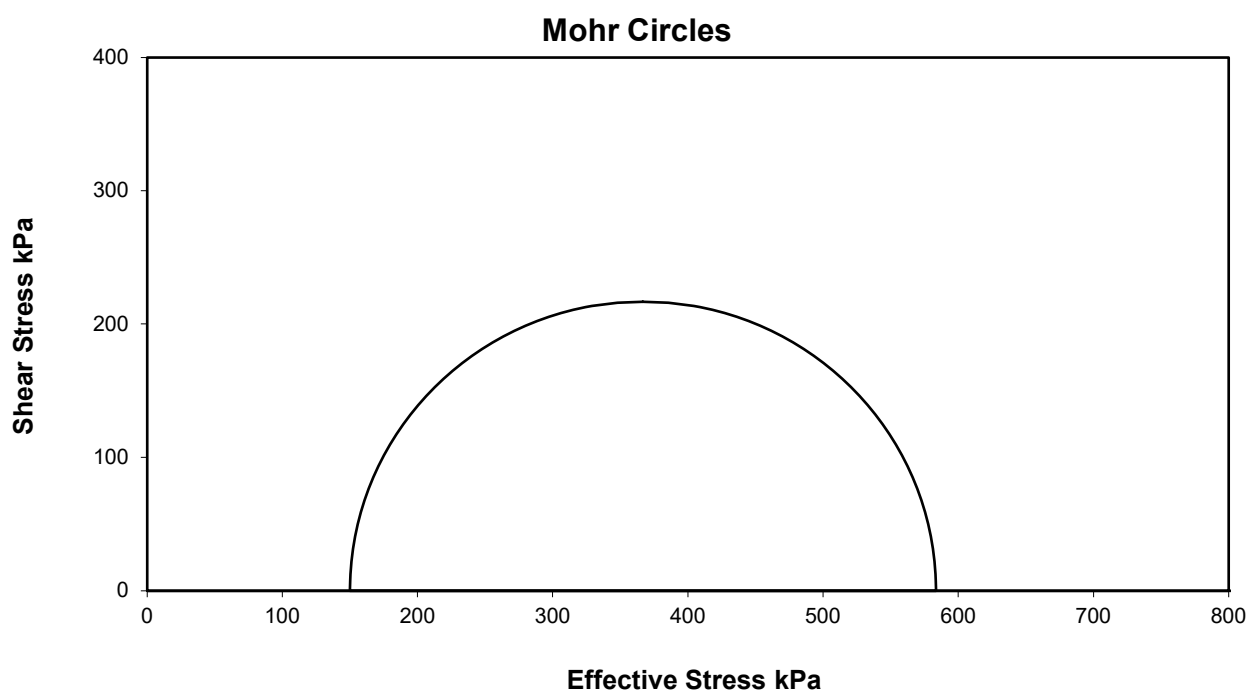
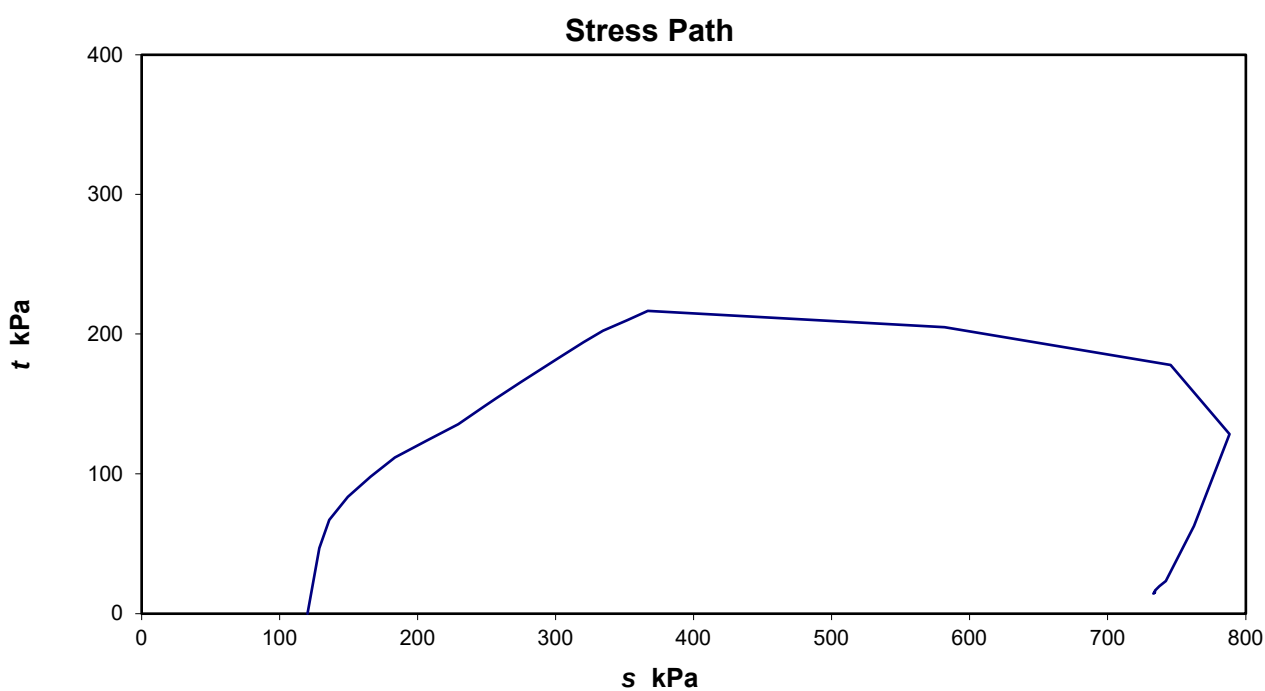
NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH5
SAMPLE No./TYPE C
SAMPLE DEPTH (m) 14.90-16.40
SPECIMEN DEPTH (m) 15.00-15.25



remarks

CONTRACT

37330

CHECKED

NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP



BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH5
SAMPLE No./TYPE C
SAMPLE DEPTH (m) 14.90-16.40
SPECIMEN DEPTH (m) 15.00-15.25



Failure Mode INTER

remarks
Please note the photos are intended to show the mode of failure only.
Failure indicated not a true representation due to machine fault

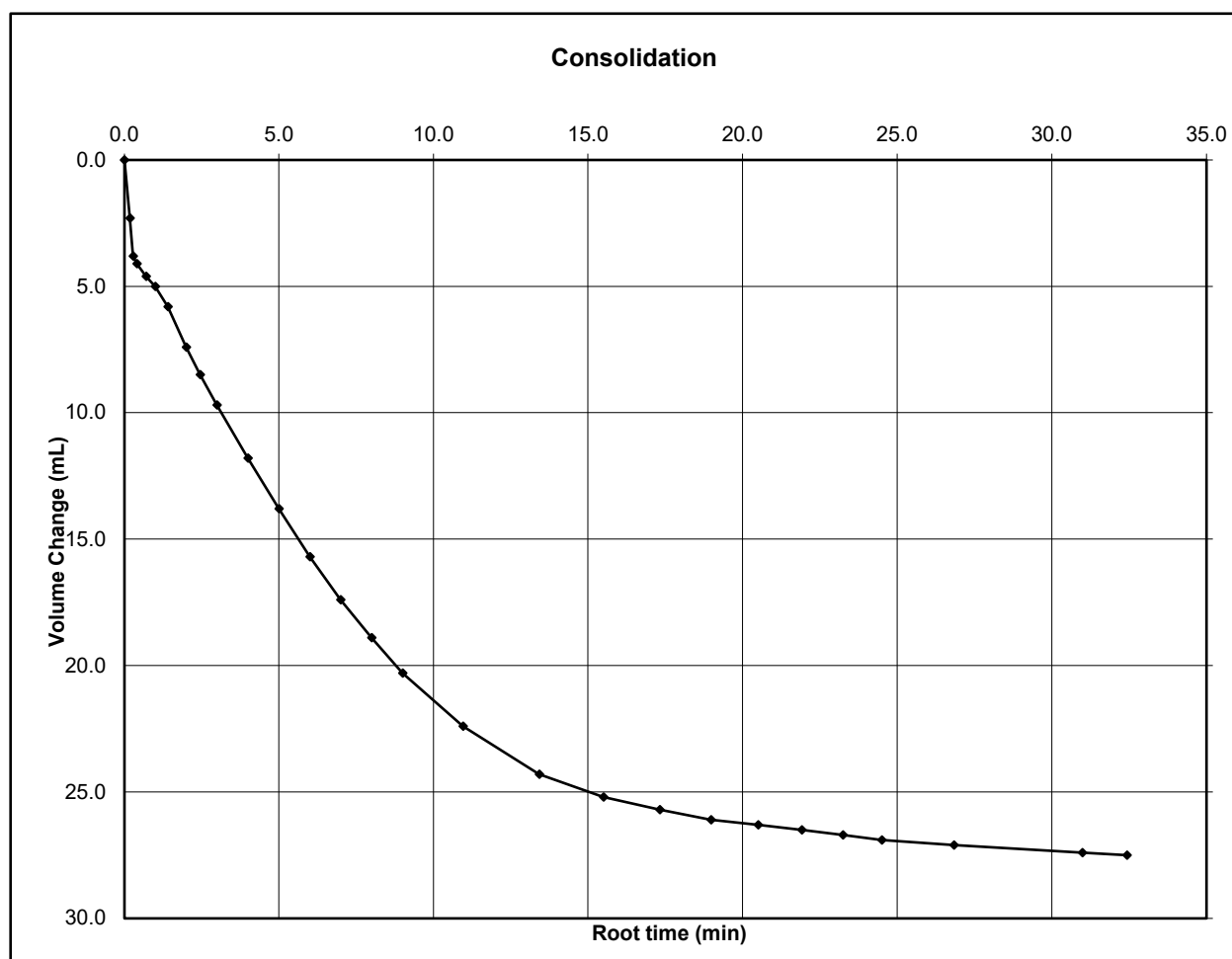
CONTRACT	CHECKED
37330	NP

CONSOLIDATED UNDRAINED TRIAXIAL TEST with PWP

BS EN ISO 17892-9:2018

CLIENT ENGLOBE
SITE COED DARCY

BH/TP No. ENBH5
SAMPLE No./TYPE C
SAMPLE DEPTH (m) 14.90-16.40
SPECIMEN DEPTH (m) 15.00-15.25



Cell pressure	kPa	690
Back pressure	kPa	540
Effective pressure	kPa	150
Initial PWP	kPa	688
Final PWP	kPa	546
PWP Dissipation	%	95.95
Volume change	mL	27.5
	t100	118.73

remarks

CONTRACT

37330

CHECKED

NP



2183

Final Report

Report No.:	22-45172-1		
Initial Date of Issue:	08-Dec-2022		
Client	Geotechnical Engineering Ltd		
Client Address:	Centurion House, Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF		
Contact(s):	GEL		
Project	37330 Coed Darcy		
Quotation No.:		Date Received:	24-Nov-2022
Order No.:	6321	Date Instructed:	24-Nov-2022
No. of Samples:	15		
Turnaround (Wkdays):	5	Results Due:	30-Nov-2022
Date Approved:	08-Dec-2022		
Approved By:			



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: 37330 Coed Darcy

Client: Geotechnical Engineering Ltd	Chemtest Job No.:					22-45172	22-45172	22-45172	22-45172	22-45172	22-45172	22-45172	22-45172	22-45172	22-45172
Quotation No.:	Chemtest Sample ID.:					1551651	1551652	1551653	1551654	1551655	1551656	1551657	1551658	1551659	1551660
	Sample Location:					ENBH1	ENBH1	ENBH1	ENBH2	ENBH2	ENBH3	ENBH3	ENBH4	ENBH4	ENBH5
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					7.70	11.70	13.20	10.20	12.50	13.20	14.60	15.50	17.00	17.90
	Bottom Depth (m):					8.00	12.40	14.30	11.70	14.00	13.65	15.20	16.50	17.70	19.40
	Date Sampled:														
Determinand	Accred.	SOP	Units	LOD											
Moisture	N	2030	%	0.020	73	4.5	12	69	7.0	0.53	0.89	18	19	14	1.1
pH	U	2010		4.0											
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010											
Organic Matter	U	2625	%	0.40	[A] 60	[A] 1.0	[A] 0.86	[A] 78	[A] 1.4	[A] 0.86	[A] 1.0	[A] 2.8	[A] 3.3	[A] 2.1	[A] 0.69

Results - Soil

Project: 37330 Coed Darcy

Client: Geotechnical Engineering Ltd	Chemtest Job No.:				22-45172	22-45172	22-45172	22-45172
Quotation No.:	Chemtest Sample ID.:				1551662	1551663	1551664	1551665
	Sample Location:				ENBH1	ENBH2	ENBH3	ENBH4
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				7.20	8.30	13.10	14.40
	Bottom Depth (m):				7.65	8.40	13.20	14.50
	Date Sampled:				21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	54	74	15	50
pH	U	2010		4.0	4.5	5.4	7.2	7.1
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010	< 0.010	0.10	0.026	6.0
Organic Matter	U	2625	%	0.40				

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:
1551651			ENBH1		A	Plastic Bag
1551652			ENBH1		A	Plastic Bag
1551653			ENBH1		A	Plastic Bag
1551654			ENBH2		A	Plastic Bag
1551655			ENBH2		A	Plastic Bag
1551656			ENBH3		A	Plastic Bag
1551657			ENBH3		A	Plastic Bag
1551658			ENBH4		A	Plastic Bag
1551659			ENBH4		A	Plastic Bag
1551660			ENBH5		A	Plastic Bag
1551661			ENBH5		A	Plastic Bag

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	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
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Report Information

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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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

Tom Best

Geotechnical Engineering Ltd
Centurion House
Olympus Park
Quedgeley
Gloucester
GL2 4NF

t: 01452 527 743
f: 01452 729 314
e: tom.best@geoeng.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-11274

Project / Site name: Coed Darcy

Samples received on: 05/12/2022

Your job number:

**Samples instructed on/
Analysis started on:** 05/12/2022

Your order number: 6339

Analysis completed by: 19/12/2022

Report Issue Number: 1

Report issued on: 19/12/2022

Samples Analysed: 35 soil samples



Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521308	2521309	2521310	2521311	2521312
Sample Reference				ENBH1	ENBH1	ENBH1	ENBH1	ENBH1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-0.70	1.20-1.80	1.80-2.40	2.70-4.20	5.70-6.15
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	27	< 0.1	20	< 0.1
Moisture Content	%	0.01	NONE	13	18	18	29	30
Total mass of sample received	kg	0.001	NONE	2	0.5	1.5	0.5	0.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	-	7.0	-	7.3
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.76	-	0.17	-	1.6
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	6.1	11	-	9	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521313	2521314	2521315	2521316	2521317
Sample Reference				ENBH1	ENBH2	ENBH2	ENBH2	ENBH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	1.20-1.65	1.20-2.70	2.70-4.20	4.20-4.65
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	14	< 0.1
Moisture Content	%	0.01	NONE	25	26	21	16	27
Total mass of sample received	kg	0.001	NONE	0.6	0.2	0.5	2	0.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.6	-	-	7.0
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.6	-	-	0.45
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	4.1	-	9.5	11	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521318	2521319	2521320	2521321	2521322
Sample Reference				ENBH2	ENBH2	ENBH2	ENBH3	ENBH3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.00	6.20	7.20-8.05	1.20-1.65	2.05-2.70
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	7.7
Moisture Content	%	0.01	NONE	30	32	26	21	17
Total mass of sample received	kg	0.001	NONE	0.6	0.6	2	2	2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	8.1
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.035
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	4.5	3.9	8.8	6	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
 Project / Site name: Coed Darcy
 Your Order No: 6339

Lab Sample Number				2521323	2521324	2521325	2521326	2521327
Sample Reference				ENBH3	ENBH3	ENBH3	ENBH3	ENBH3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.70-4.20	5.70-7.20	7.20-7.65	8.70-10.20	10.50-11.20
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	17	29	20	19
Total mass of sample received	kg	0.001	NONE	2	2	0.2	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	7.5	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.38	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	30
Organic Matter (automated)	%	0.1	MCERTS	8.2	10	-	4.6	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521328	2521329	2521330	2521331	2521332
Sample Reference				ENBH3	ENBH4	ENBH4	ENBH4	ENBH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90-12.50	1.20-2.70	4.20-4.65	4.20-5.70	7.20-8.70
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	20	< 0.1
Moisture Content	%	0.01	NONE	17	21	30	26	31
Total mass of sample received	kg	0.001	NONE	0.5	2	0.2	2	2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	6.3	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	1.7	-	-
Organic Matter	%	0.1	MCERTS	32	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	6.3	-	7.7	12

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521333	2521334	2521335	2521336	2521337
Sample Reference				ENBH4	ENBH4	ENBH4	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				10.20-10.65	10.20-11.70	13.20-14.00	1.20-2.70	4.20-4.65
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	23	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	30	20	20	24	36
Total mass of sample received	kg	0.001	NONE	0.2	2	2	0.5	0.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	-	-	-	7.4
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.83	-	-	-	0.45
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	6.3	9.2	8	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 22-11274
Project / Site name: Coed Darcy
Your Order No: 6339

Lab Sample Number				2521338	2521339	2521340	2521341	2521342
Sample Reference				ENBH5	ENBH5	ENBH5	ENBH5	ENBH5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.20-5.70	7.20-8.70	10.20-11.70	11.70-13.20	14.60-14.70
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	8.5	< 0.1
Moisture Content	%	0.01	NONE	28	27	26	31	69
Total mass of sample received	kg	0.001	NONE	0.5	0.5	2	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	30
Organic Matter (automated)	%	0.1	MCERTS	6.9	5.4	6.7	13	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 22-11274
Project / Site name: Coed Darcy

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2521308	ENBH1	None Supplied	0.50-0.70	Brown loam and clay with gravel.
2521309	ENBH1	None Supplied	1.20-1.80	Brown clay and sand with stones and vegetation.
2521310	ENBH1	None Supplied	1.80-2.40	Brown clay and sand.
2521311	ENBH1	None Supplied	2.70-4.20	Brown clay and sand with stones.
2521312	ENBH1	None Supplied	5.70-6.15	Black gravelly sand with tar and clinker
2521313	ENBH1	None Supplied	5.5	Black gravelly sand with tar and clinker
2521314	ENBH2	None Supplied	1.20-1.65	Black gravelly sand with tar and clinker
2521315	ENBH2	None Supplied	1.20-2.70	Brown gravelly sand.
2521316	ENBH2	None Supplied	2.70-4.20	Brown gravelly sand with stones.
2521317	ENBH2	None Supplied	4.20-4.65	Black gravelly sand with tar and clinker
2521318	ENBH2	None Supplied	5	Black gravelly sand with tar and clinker
2521319	ENBH2	None Supplied	6.2	Black gravelly sand with tar and clinker
2521320	ENBH2	None Supplied	7.20-8.05	Brown gravelly sand with vegetation.
2521321	ENBH3	None Supplied	1.20-1.65	Brown gravelly sand.
2521322	ENBH3	None Supplied	2.05-2.70	Brown gravelly sand with vegetation and stones.
2521323	ENBH3	None Supplied	2.70-4.20	Brown gravelly sand.
2521324	ENBH3	None Supplied	5.70-7.20	Black gravelly sand.
2521325	ENBH3	None Supplied	7.20-7.65	Black gravelly sand with tar and clinker
2521326	ENBH3	None Supplied	8.70-10.20	Black gravelly sand.
2521327	ENBH3	None Supplied	10.50-11.20	Black clay and sand with vegetation.
2521328	ENBH3	None Supplied	11.90-12.50	Brown clay and sand with vegetation.
2521329	ENBH4	None Supplied	1.20-2.70	Black gravelly sand.
2521330	ENBH4	None Supplied	4.20-4.65	Black gravelly sand with tar and clinker
2521331	ENBH4	None Supplied	4.20-5.70	Black gravelly sand with stones.
2521332	ENBH4	None Supplied	7.20-8.70	Black gravelly sand.
2521333	ENBH4	None Supplied	10.20-10.65	Black gravelly sand with tar and clinker
2521334	ENBH4	None Supplied	10.20-11.70	Black gravelly sand.
2521335	ENBH4	None Supplied	13.20-14.00	Black gravelly sand with stones.
2521336	ENBH5	None Supplied	1.20-2.70	Black gravelly sand.
2521337	ENBH5	None Supplied	4.20-4.65	Black gravelly sand with tar and clinker
2521338	ENBH5	None Supplied	4.20-5.70	Black gravelly sand.
2521339	ENBH5	None Supplied	7.20-8.70	Black gravelly sand.
2521340	ENBH5	None Supplied	10.20-11.70	Black gravelly sand.
2521341	ENBH5	None Supplied	11.70-13.20	Black gravelly sand with stones.
2521342	ENBH5	None Supplied	14.60-14.70	Brown loam and clay with vegetation and oil / petroleum.

Analytical Report Number : 22-11274
Project / Site name: Coed Darcy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-11274

Project / Site name: Coed Darcy

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
ENBH1	None Supplied	S	2521308	a	None Supplied	None Supplied	None Supplied
ENBH1	None Supplied	S	2521309	a	None Supplied	None Supplied	None Supplied
ENBH1	None Supplied	S	2521310	a	None Supplied	None Supplied	None Supplied
ENBH1	None Supplied	S	2521311	a	None Supplied	None Supplied	None Supplied
ENBH1	None Supplied	S	2521312	a	None Supplied	None Supplied	None Supplied
ENBH1	None Supplied	S	2521313	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521314	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521315	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521316	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521317	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521318	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521319	a	None Supplied	None Supplied	None Supplied
ENBH2	None Supplied	S	2521320	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521321	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521322	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521323	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521324	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521325	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521326	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521327	a	None Supplied	None Supplied	None Supplied
ENBH3	None Supplied	S	2521328	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521329	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521330	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521331	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521332	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521333	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521334	a	None Supplied	None Supplied	None Supplied
ENBH4	None Supplied	S	2521335	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521336	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521337	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521338	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521339	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521340	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521341	a	None Supplied	None Supplied	None Supplied
ENBH5	None Supplied	S	2521342	a	None Supplied	None Supplied	None Supplied

Appendix E

Permeability Tests



eNGLOBE

C1870 Coed Darcy
Permeability Testing
ENBH2

Time	Date	Dip to water	Dip to base	Comments
10:47	22/11/2022	2.61	13.845	
11:01	22/11/2022			Both loggers installed at 10 m depth
11:03	22/11/2022			1st bailer removed
11:06	22/11/2022			2nd bailer removed
11:09	22/11/2022			3rd bailer removed
11:12	22/11/2022			4th bailer removed
11:16	22/11/2022			Loggers removed

ENBH4

Time	Date	Dip to water	Dip to base	Comments
11:22	22/11/2022	9.395	18.4	
11:35	22/11/2022			Both loggers installed at 12 m depth
11:36	22/11/2022			1st bailer removed
11:40	22/11/2022			2nd bailer removed
11:44	22/11/2022			3rd bailer removed
11:48	22/11/2022			4th bailer removed
11:53	22/11/2022			Loggers removed

ENBH5

Time	Date	Dip to water	Dip to base	Comments
11:58	22/11/2022	8.82	19.25	
12:02	22/11/2022			Both loggers installed at 12 m depth
12:05	22/11/2022			1st bailer removed
12:10	22/11/2022			2nd bailer removed
12:20	22/11/2022			3rd bailer removed
12:30	22/11/2022			4th bailer removed
12:45	22/11/2022			Loggers removed

Appendix F

Photographs



eNGLOBE



Photo 1



Photo 2



Photo 3



Photo 4

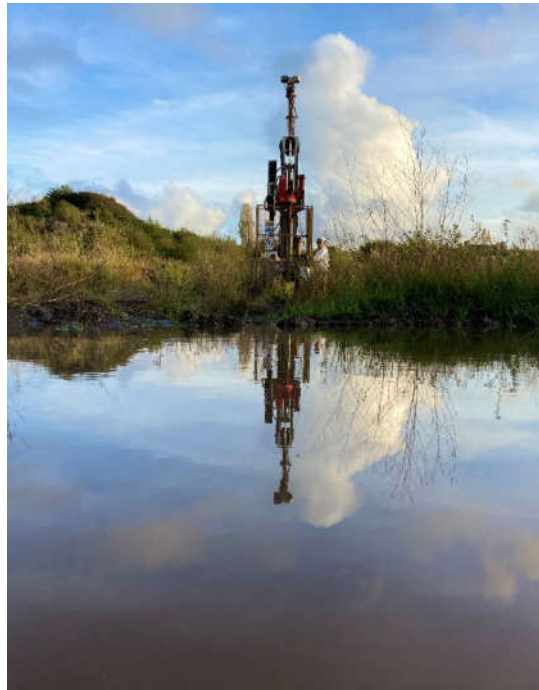


Photo 5



ENGLOBE