SUPPLEMENTARY PHASE II GEO-ENVIRONMENTAL ASSESSMENT REPORT

FINAL

Coleg Sir Gar – Pibwrlwyd Campus

Report Ref: HSP2024-4103-G-GPII-2636

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Supplementary Phase II Geo-Environmental Assessment Report

This report was produced by HSP Consulting Engineers Ltd for WEPco as the Supplementary Phase II GeoEnvironmental Desk Study Report for Coleg Sir Gar (Pibwrlwyd Campus), Carmarthen, to investigate the existing ground conditions and provide information on likely constraints to development, preliminary parameters for design and recommendations for any mitigation measures.

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Contents

1. Introduction 1
   1.1 Background 1
   1.2 Client Brief & Scope 1
   1.3 Report Objectives 1
   1.4 Limitations 1
   1.5 Previous Reports 2
2. Review of Existing Information & Geoenvironmental Setting 3
   2.1 The Site 3
   2.2 Geology 4
   2.3 Previous Ground Investigation Reports 4
3. Fieldwork & Factual Information 6
   3.1 Exploratory Methods 6
   3.2 In-situ Testing 6
   3.3 Laboratory Testing 6
   3.4 Ground Conditions 8
   3.5 Groundwater Levels 9
   3.6 Ground Gas Monitoring 9
   3.7 Visual and Olfactory Evidence of Contamination 10
4. Geotechnical Assessment 11
   4.1 Detailed Ground Model 11
   4.2 Earthworks 15
   4.3 Foundations 17
   4.4 Ground Floor Slab 18
   4.5 Excavations 18
   4.6 Concrete Classification 19
   4.7 Pavement Design 19
   4.8 Infiltration Testing 19
   4.9 Hand Excavated Pits for Underground Services 20
5. Environmental Assessment 22
   5.1 Introduction 22
   5.2 Assessment of Soil Analysis Results 22
   5.3 Human Health Mitigation 23
   5.4 Ground Gas Risk Assessment 24

5.5 Water Supply 25
5.6 Waste Classification.....25
5.7 Updated Conceptual Site Model 26
6. Development Constraints.....28
7. References 29

Appendices

Appendix I - Site Location Plan
Appendix II - Ground Investigation Layout Plan
Appendix III - Exploratory Hole Logs
Appendix IV - Chemical Analysis Results
Appendix V - Geotechnical Results
Appendix VI - Infiltration Testing
Appendix VII - Plate Bearing Test Results
Appendix VIII - Ground Gas Monitoring Results
Appendix IX - HazWasteOnline™ Waste Classification Results
Appendix X - Exploratory Hole Photographs

Executive Summary

HSP Consulting Engineers Ltd has been commissioned by WEPco to provide a Phase II Geo-environmental Assessment report providing information on likely constraints to the development of the site, parameters for design and recommendations for any mitigation measures should they be required.

The site is located approximately 2.7km south from the town of Carmarthen and is accessed from Pibwrlwyd Lane. The approximate National Grid Reference for the centre of the site is 241198, 218295.

The ground investigation comprised nine windowless sample boreholes to a maximum depth of 3.60m, two cable percussive boreholes to a maximum depth of 15.00m begl, ten machine excavated trial pits to a maximum depth of 2.50m begl, seven of which were utilised for infiltration testing, three hand excavated pits for utility identification and 5 plate bearing tests for CBR%. The geology of the site generally comprised limited Made Ground, overlying superficial Till deposits over bedrock deposits of the Tetragraptus Beds.

For new builds proposed on the existing college site, it is considered conventional strip or pad foundations could be utilised within the natural deposits designed to a net allowable bearing pressure of 125kN/m^2 at 1.00m begl increasing to 175kN/m^2 at 2.00m begl to limit total settlements to 25mm and differential settlements to acceptable limits. Localised deepening may be required where soft/loose deposits are encountered (WS08: 1.00m) and placed within competent strata.

For new builds proposed on the adjacent agricultural field, It is considered conventional strip or pad foundations could be utilised within the natural deposits designed to a net allowable bearing pressure of 125kN/m^2 at 1.00m begl increasing to 160kN/m^2 at 2.00m begl to limit total settlements to 25mm and differential settlements to acceptable limits. Localised deepening may be required where soft deposits are encountered (WS104: 1.00m. SPT N value of 7) and placed within competent strata.

The results of sulphate and pH testing carried out on selected soil samples taken during this investigation indicate it is appropriate to adopt a basic Design Sulphate Class of DS-1 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1.

From the geotechnical testing undertaken on natural superficial and bedrock deposits, it is considered that the natural shallow strata may require some modification to be suitable for use as engineered. For both material types some samples have been found to be wet of their optimum moisture content and the potential for deterioration during periods of inclement weather should be given consideration. Implementation of stabilisation will aid achieving high compaction criteria and reduce long term settlements.

The screening process for on-site human health receptors show that the GACs, representative of minimal risk for a residential without home grown produce, adopted for a school setting, were exceeded for Arsenic in one Made Ground sample. In areas where buildings or hardstanding are proposed the risk will be negligible as this effectively acts as capping and breaks the Source - Pathway

- Receptor linkage. Should soft landscaping be proposed, a clean cover system may be required, however given the ground conditions underlying the site and limited extent of exceedances, the requirement for a capping system is likely to comprise suitable topsoil / subsoil for a suitable growing medium.

Ground gas monitoring has been undertaken on four occasions. It is considered that Characteristic Situation 1 is appropriate for the site. Based on the UK radon map the site is located within an area where 3% to 5% of the properties are above the action level for radon and therefore basic radon measures will be required for any new development on the site in accordance with BR 211

Testing to the Water UK Suite is beyond the scope of the investigation. However, the use of plastic water supply pipes is likely to be suitable if located in natural ground. However, specific targeted testing may be required by the utility provider once the water supply pipe route(s) have been confirmed.

The executive summary contains an overview of key findings and conclusions. However, no reliance should be placed on the executive summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the executive summary.

1. Introduction

1.1 Background

This supplementary ground investigation and subsequent report has been prepared to aid preliminary design parameters, following an initial ground investigation (completed February 2023) as part of a feasibility study.

1.2 Client Brief & Scope

HSP Consulting Engineers Ltd has been commissioned by WEPco to undertake an intrusive ground investigation at the site to investigate the existing ground conditions and provide information on likely constraints to development, preliminary parameters for design and recommendations for any mitigation measures.

The report presents the following information:

- a summary of the previous Geo-environmental Reports (Section 1.5 below),
- details of the ground investigation undertaken and the ground conditions encountered,
- details and results of the geotechnical testing and contamination analysis,
- recommendations for mitigating constraints to the proposed development, where appropriate, and providing preliminary parameters for foundation design.

The human health risk assessment reported within Section 5 follows the principals given in the Land Contamination Risk Management (LCRM) Guidance.

Where applicable, the fieldwork was undertaken in accordance with BS5930:2015+A1:2020 Code of Practice for Ground Investigations and BS10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.

1.3 Report Objectives

The objectives of this report are to:

- Establish the geological and hydrogeological conditions using existing available/published information.
- Summarise available information and identify site specific geotechnical and environmental hazards which may place a constraint upon the proposed site use.
- Produce an updated Conceptual Site Model identifying potential pollution linkages between sources of contamination, pathways and receptors.

1.4 Limitations

The recommendations made in this report are based on the findings of the intrusive ground investigation undertaken by HSP Consulting Engineers Ltd between the 12th and 16th August 2024.

1.5 Previous Reports

HSP Consulting Engineers Ltd have previously produced the following reports, which are detailed below:

- HSP Consulting Engineers Limited, Coleg Sir Gar - Pibwrlwyd Campus - Phase I Geo-Environmental Desk Study Report, November 2022, Ref: HSP2022-C4103-G-GPI-111.1 (Ref 1)
- HSP Consulting Engineers Limited, Coleg Sir Gar - Pibwrlwyd Campus - Phase II Geo-Environmental Assessment, February 2023, Ref: HSP2023-C4103-G-GPII-1308. (Ref 2)

This Phase II Geo-environmental Assessment should be read in conjunction with the findings of the reports referenced above.

2. Review of Existing Information & Geoenvironmental Setting

2.1 The Site

2.1.1 Location

The site is located approximately 2.7km south from the town of Carmarthen and is accessed from Pibwrlwyd Lane. The approximate National Grid Reference for the centre of the site is 241198, 218295. A Site Location Plan is included in Appendix I.

2.1.2 Description

The site is irregular in shape and is approximately 4.11Ha in area. Vehicle access is gained from the south of the site off Pibwrlwyd Lane, which runs south along the length of the site.

The site is split into two distinct zones with a trackway separating the two zones; the east zone comprises an agricultural field which was fallow at the time of the walkover and the west zone is developed.

The developed area is occupied by Coleg Sir Gar and is comprised of eight mixed storey buildings with associated hardstanding and soft landscaped areas. The buildings are mixed CLASP-style buildings with flat roofs or brick and concrete spray with pitched roof. A large car park is present on the northeast section of the developed area and a smaller car park is present centrally south of the developed area. Two storage container and a skip are present in the small car park.

A topographical survey has been made available for the site (Drawing Ref: 5363/001 dated 02.11.2022). The main college site slopes from northeast (approx. 27m AOD) to southwest (approx. 12m AOD), with a level change up to 15m across the site. The fields to the east also slope from north to south, between approximately 32.5m AOD to approximately 15m AOD, a level change of 17.50m across the site.

The site boundaries are comprised of mixed metal fencing, mature trees and hedgerow.

2.1.3 Surrounding Land Use

The main features of interest identified are:

North:	Agricultural fields.
East:	Agricultural fields.
South:	Coleg Sir Gar and residential housing.
West:	A484, residential housing and agricultural fields.

2.1.4 Proposed End Use

Detailed proposed development plans have not been provided at this stage, but it is understood that redevelopment is planned including demolition of the existing school block to be replaced with a new build. Additional buildings are proposed on the unoccupied field to the east of the existing college campus. The site will remain a college.

2.2 Geology

2.2.1 Made Ground

According to BGS mapping, Made Ground is not expected to be encountered on the site. However, there is potential for limited Made Ground to be present on site associated with the existing development.

2.2.2 Superficial Deposits

BGS mapping shows the site is underlain by Till in the east of the site and Glaciofluvial Deposits in the west of the site. Till is described as Diamicton. Glaciofluvial Deposits are characterised by sand and gravels.

2.2.3 Bedrock Geology

BGS bedrock mapping indicated the site is underlain by Tetragraptus Beds - Mudstone of the Ordovician Period. No description has been provided by the BGS.

2.3 Previous Ground Investigation Reports

HSP Consulting Engineers Limited – Phase II Geo-Environmental Assessment, February 2023

Summary of Ground Conditions

The investigation was limited to the main college campus, with no investigation undertaken on the agricultural fields to the east of the campus.

The ground investigation comprised twelve windowless sample boreholes to a maximum depth of 4.00m begl and three cable percussive boreholes to a maximum depth of 6.60m begl.

The ground conditions across the site encountered limited Made Ground over superficial Glaciofluvial deposits overlying bedrock deposits of the Tetragraptus Beds.

Shallow Made Ground was encountered in areas where development had occurred. These locations generally comprised asphalt concrete and/or grey gravel cover over dark grey black/grey sandy gravelly silty clayey fill to a maximum depth of 0.50m begl. The gravels were composed of ballast, sandstone, mudstone and asphalt concrete. The base of all Made Ground deposits were penetrated.

Topsoil was encountered in areas of soft landscaping and comprised of grass overlying brown sandy slightly gravelly CLAY with occasional rootlets to a maximum depth of 0.30m begl.

Superficial Glaciofluvial deposits were encountered in all boreholes. A soft to firm brown/light grey/light yellowish brown mottled grey silty CLAY with variable coarse content was encountered underlying any Made Ground or topsoil and proved to a maximum depth of 3.70m begl. The gravels were composed of sandstone, mudstone, siltstone, shale and flint.

In WS06 a loose to medium dense brown SAND was encountered from 0.50m to 2.00m begl, interbedded with clayey slightly sandy mudstone gravel. A loose light brown mottled grey slightly clayey very gravelly SAND was encountered in WS07, WS08 and WS11 from 0.90m to 2.00m begl.

Bedrock deposits of the Tetragraptus Beds were encountered below the Glaciofluvial deposits in CP01A, CP02, CP03, WS04, WS05, WS09 and WS12. The Tetragraptus beds were encountered as very weak to weak weathered dark grey MUDSTONE interbedded with stiff to very stiff brown to dark grey sandy gravelly CLAY from 0.40m begl in WS05 in the northeast and from 3.70m begl in WS09 in the south. The base of the deposits were proven to the base of the boreholes (maximum depth 6.60m begl).

During the advancement of the window sample boreholes, groundwater was encountered at 1.00m begl in WS11. No groundwater was encountered in the cable percussive boreholes. Groundwater monitoring was undertaken on six occasions and groundwater was recorded between 1.52m begl to 3.90m begl.

3. Fieldwork & Factual Information

The site work was carried out between the 12th and 16th August 2024. Where applicable, the fieldwork was undertaken in accordance with BS5930:2015 + A1:2020 Code of Practice for Ground Investigations (Ref. 7) and BS10175:2011+A2:2017 Investigation of Potentially Contaminated Sites (Ref. 9).

The exploratory holes were positioned by Hydrock, as detailed on drawing CSG-HYD-XX-XX-DR-S-0101-P01 – Site Constraints Plan. Locations may have altered slightly subject to access / underground services. The Ground Investigation Layout Plan can be found with Appendix II.

3.1 Exploratory Methods

The exploratory methods are detailed in the table below.

Table 3.1.1 – Exploratory Methods

Type	Quantity	Maximum Depth (m)	Details
Windowless Sampling Borehole	9	3.60	WS101 to WS109
Rotary Open Borehole	2	15.00	RO101 to RO102
Hand Excavated Trial Pit for Utilities	3	1.20	TP101 to TP103
Machine Excavated Trial Pit	3	2.50	TP104 to TP106
Machine Excavated Trial Pit for Infiltration Testing	7	1.90	SA201 to SA207
Plate Bearing Tests	5	0.50	CBR01 to CBR05

The exploratory holes were logged and sampled by an Engineer from HSP Consulting Engineers Ltd and the logs are presented in Appendix III. The exploratory hole locations are shown on the Ground Investigation Layout Plan presented in Appendix II.

Fragmentary bulk disturbed and undisturbed samples were recovered from materials revealed within all the exploratory holes. Geo-environmental samples, placed in plastic tubs and glass jars supplied by the laboratory, were also obtained specifically for chemical analysis. The samples were taken to UKAS accredited laboratories for further examination and testing.

3.2 In-situ Testing

3.2.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) were carried out at 1.00m intervals in the windowless sample and rotary open boreholes to 5.00m depth, and at 1.50m intervals thereafter in the rotary open boreholes. The SPTs were undertaken in accordance with EN ISO 22476-2 2005: A1 2011 and the results are included on the appended borehole logs (Appendix III).

3.3 Laboratory Testing

The laboratory testing schedules were prepared by HSP Consulting Engineers Ltd.

3.3.1 Geotechnical Testing

Geotechnical testing has been scheduled to be undertaken by a UKAS accredited laboratory as part of the works at the site:

- Particle size distributions (PSD)
- Natural Moisture Contents
- Plasticity Index
- Maximum Dry Density / Optimum Moisture Content Relationship
- Recompacted Lab CBR%
- BRE Sulphate Testing Suite D
- Particle Density

The laboratory testing was carried out by Geolabs (UKAS accredited, laboratory No.1982) in accordance with BS 1377-2:2022, BS EN ISO 17892-12:2018+A2:2022, BS EN ISO 17892-3:2015 and 17892:2016-4:2016 using calibrated equipment specifically for the British Standard.

Please note that three samples scheduled for Maximum Dry Density / Optimum Moisture Content Relationship testing were considered not applicable due to more than 10% of the samples retained on the 37.5mm sieve. The samples were tested but a note is included within the report, listing the samples as 'Zone X non – standard test'. The samples are listed below;

- SA201: 0.80m – 1.10m
- SA205: 0.40m – 0.60m
- SA206: 0.90m – 1.20m

3.3.2 Chemical Analysis

The geo-environmental samples retained specifically for chemical analysis were stored in cooled containers until delivery to the laboratory by courier.

Chemical analysis was scheduled on twelve soil samples for the presence of a selected suite of potential contaminants as outlined in the tables below:

Table 3.3.1 – Chemical Analysis

Exploratory Hole Location & Depth (m)	Sample Description	Exploratory Hole Location & Depth (m)	Sample Description
SA201: 0.10m – 0.20m	MADE GROUND [1, 2, 3]	WS103: 0.05m – 0.15m	TOPSOIL [1, 2]
SA202: 0.20m – 0.30m	TOPSOIL [1, 2]	WS104: 0.10m – 0.20m	TOPSOIL [1, 2]
SA205: 0.10m – 0.20m	TOPSOIL [1, 2, 4]	WS105: 0.40m – 0.50m	CLAY [1, 2]
HDP2: 0.10 – 0.20 (in location of SA205)	TOPSOIL [5]	WS107: 0.10m – 0.20m	TOPSOIL [1, 2, 4, 5]
SA206: 0.05m – 0.10m	TOPSOIL [1, 2]	WS109: 0.40m – 0.50m	CLAY [1, 2]
WS101: 0.20m – 0.30m	TOPSOIL [1, 2]	TP104: 0.10m – 0.20m	TOPSOIL [1, 2, 4, 5]

[1] HSP Standard Suite, [2] Organic Matter, [3] Asbestos Screen [4] Pesticides Suite, [5] BS3882 Topsoil Suite

Table 3.3.2 – HSP Standard Chemical Analysis Suite

Metals	Lead	Mercury	Nickel
	Zinc	Antimony	Vanadium
Semi Metals and Non-Metals	Arsenic	Boron	Selenium
Others	pH	Organic Matter	LOI

Inorganic Chemicals	Cyanide	Sulphate	Sulphide
Organic Chemicals	PAH (US EPA 16)	TPH (CWG)	Phenol

The contamination analysis was carried out by Chemtest Ltd (UKAS accredited, laboratory No. 2183) during the period 22nd August to 13th September 2024. An additional sample of topsoil was obtained (HDP2, locality of SA205) on the 19th of September, the analysis of which was carried out during the period 24th September to 4th October 2024. All of the results are presented in Appendix IV.

3.4 Ground Conditions

3.4.1 Published Geology

The published geology indicates the site is underlain by Glaciofluvial deposits in the west of the site and Glacial Till in the east of the site. The site is underlain by undifferentiated bedrock deposits of the Tetragraptus Beds.

3.4.2 Ground Conditions Encountered

The exploratory hole data generally confirms the published information with Glacial Till deposits overlying Tetragraptus Beds being encountered in all the exploratory locations. The previous ground investigation on the main college site encountered superficial Glaciofluvial Deposits over the Tetragraptus Beds. The strata encountered as part of this investigation generally comprises:

Table 3.4.1 – Encountered Ground Conditions

Strata		Depth (mbegl)	Thickness (m)	Description
Anthropogenic	MADE GROUND	G.L – 0.30	0.30	Grass over dark brown / black clay (topsoil) with aggregate, asphalt and coal
		0.30 – 0.70	0.40	Dark brown sandy gravelly clay with brick and plastic
		0.15 – 0.70	0.30	Orange brown mottled grey gravelly sandy clay (reworked natural)
		0.35 – 1.80	> 1.45	Dark grey clayey sandy GRAVEL and COBBLES (reworked natural)
	TOPSOIL	G.L - 0.40	0.40	Grass over dark brown / brown sandy gravelly CLAY (TOPSOIL) with quartzite, mudstone, sandstone and coal fragments.
Superficial	GLACIAL TILL	0.25 – 1.90	1.20	Firm to stiff yellow / orange brown mottled grey sandy gravelly silty CLAY (low cobble content) with mudstone and coal fragments.
		0.60 – 2.50	0.80	Soft pale grey / brown mottled orange silty sandy CLAY with mudstone.
Bedrock	TETRAGRAPTUS BEDS	1.60 – 3.55	1.95	Firm dark grey gravelly silty CLAY (with occasional cobbles and boulders)
		2.10 – 3.60	1.45	Weathered MUDSTONE recovered as dark grey (with orange staining) clayey GRAVEL of mudstone
		3.60 – 15.00	11.40	MUDSTONE / SANDSTONE (drillers description)

3.5 Groundwater Levels

No groundwater was noted during the advancement of the exploratory holes, with the exception of WS109 where groundwater was recorded at approximately 2.00m begl. Post groundwater monitoring has been completed on four occasions. Within RO101 (visits 2 to 4) and WS107 (visit 4), the borehole was flooded. On both occasions the borehole was bailed with 10-20 litres of water removed and was noted to recharge immediately.

The groundwater levels recorded in the recently installed monitoring wells, are detailed in the table below; Please note that the wells installed as part of the former ground investigation were located but could not be opened (locking mechanism seized).

Table 3.5.1 – Groundwater Levels (mbgl)

Borehole No.	Installation Depth (m)	28.08.24	05.09.24	12.09.2024	19.09.2024
RO101	5.00	0.65	G.L	G.L	G.L
RO102	5.00	3.91	4.02	3.30	4.30
WS107	3.00	0.60	0.56	0.34	0.45
WS109	3.00	1.51	1.50	1.32	1.55

Table 3.5.2 – Groundwater Levels (mAOD)

Borehole No.	Level AOD (m)	28.08.24	05.09.24	12.09.2024	19.09.2024
RO101	22.34	21.69	22.34	22.34	22.34
RO102	22.06	18.15	18.04	18.76	17.76
WS107	16.17	15.57	15.57	15.83	15.72
WS109	18.42	16.91	16.92	17.10	16.87

3.6 Ground Gas Monitoring

Ground gas monitoring installations were constructed within two of the windowless sample boreholes (WS107 & WS109) and two rotary boreholes (RO101 and RO102). Each well has been constructed using 50mm diameter HDPE pipe. All of the borehole installations have a 6mm pea gravel surround to the slotted pipe with a bentonite seal above and a gas tap. The covers are cemented flush with ground level and are round lockable stopcock covers with the exception of RO101, which has a raised 'tophat' cover.

Please note that the wells installed as part of the former ground investigation were located but could not be opened (locking mechanism seized).

The ground gas monitoring was undertaken utilising GFM 436 Gas Analyser. Prior to its use, a calibration check is performed against gas readings in air. This check is undertaken once on each day the analyser is used. Annual calibration is undertaken on the unit and a copy of this certificate has been included within Appendix VIII.

The results of the ground gas monitoring are discussed in Section 5.5 below.

3.7 Visual and Olfactory Evidence of Contamination

No visual or olfactory evidence of contamination was noted during the intrusive works.

4. Geotechnical Assessment

4.1 Detailed Ground Model

For the purpose of this geotechnical assessment, the information gained from all exploratory holes has been utilised. The exploratory logs are presented in Appendix III.

4.1.1 Made Ground

Made Ground materials were encountered within SA201, located within soft landscaping in the main college car park and comprised topsoil with anthropogenic materials (aggregate and asphalt) overlying a reworked clay with brick and plastic to a maximum depth of 0.70m begl.

Made Ground was also recorded within SA206 and SA207, in the college southern car park. The trial pits encountered reworked material, comprising grass over sandy gravelly clay (topsoil), overlying orange brown sandy gravelly clay (reworked glacial till), underlain by reworked bedrock deposits, comprising dark grey sandy clayey gravels and cobbles of mudstone. The base of the Made Ground was not penetrated as the pits were utilised for infiltration testing.

No Made Ground materials were recorded within the field adjacent to the college.

4.1.2 Topsoil

The remaining exploratory locations were within soft landscaping, predominantly in the field to the east of the college campus, but also in the garden area of the on site dwelling (SA202) and within the southern car park (SA206 & SA207). The surface covering in the area comprised grass overlying dark brown grass over dark brown / brown sandy gravelly CLAY (TOPSOIL) with quartzite, mudstone, sandstone and coal fragments to varying depths (but a maximum of 0.40m begl).

4.1.3 Till Deposits

Below any topsoil or Made Ground the deposits are considered representative of superficial Glacial Till deposits, comprising generally soft to firm becoming stiff yellow/orange brown slightly gravelly CLAY with varying quantities of sand / cobbles. The gravel / cobble inclusions were noted to be subangular to subrounded of grey mudstone.

The depth of the superficial deposits varied. Within the field to the east of the campus, the base of the Till deposits were encountered at all exploratory hole locations, the base proved to depths between 1.60m and 2.70m begl.

4.1.4 Tetragraptus Beds

The bedrock deposits of the Tetragraptus Beds generally comprised weathered MUDSTONE recovered as dark grey (with orange staining) clayey GRAVEL, the base of which was not penetrated. Within TP106 and WS106, the deposits appeared more weathered and comprised a firm dark grey slightly gravelly silty CLAY, between 1.60m and 3.55m before grading into the weathered mudstone described above.

All windowless sample borehole refused on the bedrock deposits between 2.45m and 3.60m begl (SPT N Value of >50).

The bedrock deposits were not encountered within SA201 or SA202, which were excavated to 1.70m –1.90m depth for infiltration testing.

4.1.5 In-situ Testing and Assessment

A series of Standard Penetration Tests (SPT's) were undertaken within the boreholes. The following tables summarise the N values at depth across the site for the windowless sample and rotary boreholes.

Table 4.1.5a – Supplementary Investigation (2024) SPT N Values

Depth (m)	Range of 'N' Values	Mean 'N' Value	Description
1.00	7 - 47	18	CLAY
2.00	15 – 32	20	CLAY
	12 – 50	37	Weathered MUDSTONE and MUDSTONE
3.00	29 – 36	32	CLAY
	19 – 50	45	Weathered MUDSTONE and MUDSTONE
4.00 – 14.50	50	50	MUDSTONE

The below table shows the SPT 'N' Value results from the previous ground investigation.

Table 4.1.5b – Previous Investigation (2022) SPT N Values

Depth (m)	Range of 'N' Values	Mean 'N' Value	Description
1.00	7 – 33	16	CLAY
	50	50	MUDSTONE
2.00	14 – 43	28	CLAY
	17 - 19	18	SAND
	50	50	MUDSTONE
3.00	38 – 50	44	CLAY
	16 – 50	33	MUDSTONE
4.00	17	17	CLAY
	50	50	MUDSTONE
5.00	28	28	CLAY
6.50 – 60	50	50	MUDSTONE

4.1.6 Summary of Geotechnical Laboratory Test Results

The results can generally be classified into two main categories, the superficial glacial deposits and the bedrock deposits of the Tetragraptus Beds.

4.1.7 Superficial Deposits

Ten Particle Size Distribution analysis tests were conducted on the superficial deposits and confirmed the visual description and engineering behaviour of the soils.

The results of two particle density tests within the materials recorded values between 2.66Mg/m^3 and 2.72Mg/m^3.

Compaction tests to obtain maximum dry density and optimum moisture content relationships were undertaken on nine representative samples using a 2.5kg rammer and 4.5kg rammer.

The testing recorded optimum moisture contents of between 8.7% and 18.9% and maximum dry densities between 1.71Mg/m^3 and 2.12Mg/m^3.

Hand Shear Vanes were undertaken on six samples, with results ranging between 35kPa and 95kPa.

Fifteen plasticity index and moisture content tests have been undertaken in the laboratory on disturbed samples obtained during the investigation. The results received indicate compliance with the definition of soils of low (CL) to medium (CI / MI) plasticity after the classification system of BS5930: 2015 + A1:2020. The samples are considered to be a mixture of low volume change potential and non-shrinkable (for results with a modified PI below 10%) in accordance with the National House Building Council (NHBC) Standards, Chapter 4.2: 2019.

Table 4.1.7a - Plasticity and Volume Change Potential

Sample Ref:	Laboratory Material Descriptions	LL (%)	PL (%)	PI (%)	% passing 425µm	Modified PI (%)	Soil Class	MC (%)
SA201: 0.80m – 1.10m	Brown slightly sandy gravelly clayey SILT with rare cobbles and roots.	39	28	11	59	6.49	MI	13.5
SA202: 0.50m – 0.90m	Yellowish brown sandy gravelly silty CLAY with rare rootlets and cobbles.	35	20	15	69	10.35	CL	10.6
SA203: 0.70m – 1.00m	Dark grey slightly sandy slightly gravelly silty CLAY.	33	19	14	92	12.88	CL	20.1
SA204: 0.60m – 1.00m	Grey mottled brown slightly sandy silty CLAY.	28	16	12	96	11.52	CL	18.6
SA205: 0.40m – 0.60m	Dark brown sandy silty clayey GRAVEL with occasional cobbles and rare roots	43	25	18	20	3.6	CI	11.1
SA206: 0.40m – 0.70m	Dark brown mottled grey fine sandy gravelly silty CLAY (REWORKED).	49	27	22	35	14.3	CI	21.5
TP104: 1.00m – 1.50m	Dark brown sandy silty gravelly CLAY with rare cobbles.	44	23	21	44	9.24	CI	12.4
TP105: 0.70m – 1.10m	Yellowish brown slightly sandy slightly gravelly silty CLAY.	44	25	19	88	16.72	CI	20.2
TP105: 2.20m – 2.50m	Dark brown sandy silty gravelly CLAY with rare cobbles.	33	20	13	37	4.81	CL	14.1
TP106: 0.70m – 1.00m	Dark brown mottled grey sandy gravelly silty CLAY.	49	23	26	67	17.42	CI	15.6
WS101: 1.50m – 1.80m	Brownish grey slightly gravelly sandy silty CLAY with rare roots.	24	15	9	99	8.91	CL	15.6
WS105: 1.00m – 1.50m	Brownish grey slightly gravelly sandy silty CLAY.	31	21	10	76	7.6	CL	14.3
WS105: 2.00m – 2.30m	Brown slightly gravelly sandy silty CLAY.	26	18	8	88	7.04	CL	18.2
WS107: 1.00m – 1.50m	Greyish brown slightly gravelly slightly sandy silty CLAY with rare roots.	42	25	17	98	16.66	CI	25.5
WS108: 1.30m – 1.60m	Brownish grey slightly gravelly slightly sandy silty CLAY with rare roots.	29	18	11	98	10.78	CL	15.6

4.1.8 Materials Suitability - Superficial Deposits

Ten particle size distributions were undertaken on the Superficial Deposits, six of which conform to a 2C Stony Cohesive Material classification in accordance with Series 600 of the

‘Specification for Highways Works’. The remaining four tests conform to a 2A/2B Cohesive Material classification.

Of the four gradings which conform to the 2A/2B classification, three exhibit a moisture content which is greater than the acceptable limit, indicating conformance with 2A Wet Cohesive Material. The remaining sample conforms to a 2B Dry Cohesive Material.

Compaction tests to obtain maximum dry density and optimum moisture content relationships were undertaken on nine samples of the Superficial Deposits, as described above.

Of the nine tests completed, four had moisture contents within +3% of the optimum moisture content. From the remaining five samples, four samples had moisture content between 3.2% and 9.5% percent higher than the optimum moisture content and one sample had a moisture content of 2.6% lower than the optimum. The above suggests modification may be required to bring the soils within acceptable limits.

Nine recompacted CBR tests were undertaken on bulk samples from the mechanically excavated trial pits. All samples were tested at ‘optimum moisture content’ from the relevant compaction curve. The results ranged between 1.2% and 70% for the cohesive soils deposits and between 98% and 112% for the granular deposits.

4.1.9 Bedrock Deposits

Please note that Made Ground was encountered with SA206 and SA207, which appeared to be reworked natural bedrock deposits, which have been included within these results.

Seven Particle Size Distribution analysis tests were conducted on the bedrock deposits and confirmed the visual description and engineering behaviour of the soils.

The results of two particle density tests within the materials recorded values of 2.73g/m^3.

Compaction tests to obtain maximum dry density and optimum moisture content relationships were undertaken on three representative samples using a 2.5kg rammer and 4.5kg rammer. The testing recorded optimum moisture contents of between 8.0% and 9.9% and maximum dry densities between 2.02Mg/m^3 and 2.17Mg/m^3.

Five plasticity index and moisture content tests and two additional moisture contents have been undertaken in the laboratory on disturbed samples obtained during the investigation. The results received indicate compliance with the definition of soils of low (CL) to medium (Cl) plasticity after the classification system of BS5930: 2015 + A1:2020. The samples are considered to be non-shrinkable (for results with a modified PI below 10%) with one sample showing low volume change potential in accordance with the National House Building Council (NHBC) Standards, Chapter 4.2: 2019.

Table 4.1.7b - Plasticity and Volume Change Potential

Sample Ref:	Laboratory Material Descriptions	LL (%)	PL (%)	PI (%)	% passing 425µm	Modified PI (%)	Soil Class	MC (%)
SA206: 0.90m – 1.20m	Dark grey clayey silty sandy GRAVEL with some cobbles and bitumen pieces.	39	22	17	21	3.57	CI	8.9
SA207: 1.00m	Dark brown slightly sandy slightly clayey silty GRAVEL and COBBLES.	46	26	20	12	2.4	CI	5.5
TP104: 2.10m – 2.50m	Dark brown mottled yellow sandy gravelly silty CLAY.	34	20	14	30	4.2	CL	15.3
TP106: 2.00m – 2.50m	Dark grey mottled brown gravelly slightly sandy silty CLAY.	43	23	20	51	10.2	CI	11.8
WS102: 2.40m – 2.70m	Dark brown slightly clayey silty very sandy GRAVEL.		7.0					
WS104: 2.50m – 2.80m	Dark brown slightly clayey silty sandy GRAVEL.	49	27	22	9	1.98	CI	8.5
WS106: 2.50m – 3.00m	Dark grey sandy gravelly silty CLAY		9.1					

The geotechnical laboratory results are included in Appendix V.

4.1.10 Materials Suitability – Bedrock Deposits

Seven particle size distributions were undertaken on the weathered bedrock deposits (including the reworked material within SA206 & SA207), four of which conform to a 2C Stony Cohesive Material classification in accordance with Series 600 of the 'Specification for Highways Works'. The remaining three tests conform to either 1A Well Graded Granular Material or 1B Uniformly graded granular material, subject to further testing.

Compaction tests to obtain maximum dry density and optimum moisture content relationships were undertaken on three of the samples, as described above.

Of the three tests completed, two had moisture content within 3% of the optimum moisture content. The remaining sample had a moisture content 5.4% higher than the optimum moisture content. The above suggests modification may be required to bring the soils within acceptable limits.

Three recompacted CBRs were undertaken on bulk samples from the mechanically excavated trial pits. All samples were tested at 'optimum moisture content' from the relevant compaction curve. The results ranged between 25% and 34% for the cohesive deposits and between 11% and 13% for the granular deposits.

4.2 Earthworks

A cut and fill drawing has not been provided at this stage but given the elevation change across the site, significant reprofiling is likely to be required.

As highlighted in sections 4.1.7 to 4.1.10 geotechnical testing was completed on the two different geological units present on the site, superficial glacial till deposits and bedrock

geology of the Tetragraptus Beds. From the testing summarised above, it is considered that the natural shallow strata may require some modification to be suitable for use as engineered.

For both sets of material some samples have been found to be wet of their optimum moisture content and the potential for deterioration during periods of inclement weather should be given consideration. Implementation of stabilisation will aid achieving high compaction criteria and reduce long term settlements. Specific details should be discussed with specialist contractors.

Care should be taken to ensure that fill materials are consistent in any earthworks and there is apparent variability within the natural materials. Where obvious inconsistencies are apparent within excavated soil sources for engineered fill they should be deposited in such a way that all parts of the site receive roughly equal amounts of a given material, in roughly the same sequence, thus ensuring a uniform distribution of fill types over the whole fill thickness. The difficulties of managing this would be compounded if stabilisation is not implemented with potential double handling and stockpiling of materials for drying, mixing, and placement. These activities could all also impact significantly upon any proposed construction programme.

Excavated soils should be visually inspected and physically/mechanically sorted to remove any significant extraneous items which would otherwise determine the soils as unsuitable.

Options for modification are not limited to binders. The addition of binders may be an option however it is not certain, and subject to testing. Discussions should be held with specialists, where additional testing for sulphates, swell & consumption, slag expansivity and others may need to be determined to allow an assessment to be made to demonstrate that the materials are suitable for treatment with binders and chemical heave will not exceed acceptable limits.

Programming of earthworks (including modification) will need to be mindful of adverse weather conditions particularly over the winter months. For any materials being placed as general or engineered fill, placement and compaction would need to be strictly controlled and supervised. Project programming should consider the ‘earthworks window’ (prevailing dry & warm climatic conditions) as the fine soil materials will be susceptible to softening during periods of wet weather and will be easily damaged by site traffic and deterioration at times of heavy rainfall. We would strongly recommend to, limit the risk to programme and budget, that earthworks are only programmed within the earthworks window, which is weather dependant, usually mid-March to mid-September.

In some areas, particularly the agricultural field to the east of the existing college, a surface scrape will be required at the site to remove scrub/vegetation as these soils will not meet the requirements of general fill for an earthworks specification.

Please note that a cut and fill drawing has not been provided at this stage. The above assessment should be reviewed in conjunction with a proposed cut and fill plan once available to confirm the assessment.

4.3 Foundations

Final development plans have not been provided at this stage, but it is understood that new buildings are proposed on the existing college site (following some demolition) and on the adjacent field to the east. The assessment has been split into the existing college site (west) and the adjacent field to the east, where it is understood that new buildings are proposed.

Existing College Site (West)

For the purpose of this foundation assessment, the information gained from the previous ground investigation (windowless sample and cable percussive boreholes) has been utilised, supplemented with RO102 as part of this investigation.

Based on the ground conditions encountered, the general downward succession was identified as shallow Made Ground overlying varying depth of superficial Glaciofluvial deposits (proved to depths of 0.4m begl (WS05) and 3.7m begl (WS09), overlying bedrock deposits of the Tetragraptus beds comprising clay/mudstone. The topography of the site varies being at a higher elevation in the northeast, sloping down to the southwest.

All foundations will need to be taken below any topsoil and Made Ground materials as these are not considered a suitable founding stratum.

It is considered conventional strip or pad foundations could be utilised within the natural deposits designed to a net allowable bearing pressure of 125kN/m^2 at 1.00m begl increasing to 175kN/m^2 at 2.00m begl to limit total settlements to 25mm and differential settlements to acceptable limits. Localised deepening may be required where soft/loose deposits are encountered (WS08: 1.00m) and placed within competent strata.

Where fine-grained and granular deposits are encountered at the base of any footings, consideration should be given to the inclusion of mesh reinforcement at the top and bottom of foundations to reduce the potential for differential settlements to occur.

Adjacent Agricultural Field (East)

For the purpose of this foundation assessment, the information gained from the supplementary investigation (windowless sample and rotary open boreholes) has been utilised.

Based on the ground conditions encountered, the general downward succession was identified as Topsoil overlying varying depth of superficial Glacial Till deposits (proved to depths of 1.60m begl (WS106) and 2.70m begl (WS105/WS107), overlying bedrock deposits of the Tetragraptus beds comprising clay/mudstone. The topography of the site varies being at a higher elevation in the north, sloping down to the south significantly (approximately 16m – 17m level change across the site).

All foundations will need to be taken below any topsoil and Made Ground materials as these are not considered a suitable founding stratum.

It is considered conventional strip or pad foundations could be utilised within the natural deposits designed to a net allowable bearing pressure of 125kN/m^2 at 1.00m begl increasing to 160kN/m^2 at 2.00m begl to limit total settlements to 25mm and differential settlements to acceptable limits. Localised deepening may be required where soft deposits are encountered (WS104: 1.00m. SPT N value of 7) and placed within competent strata.

No granular deposits were recorded on the agricultural field but should fine-grained and granular deposits be encountered at the base of any footings, consideration should be given to the inclusion of mesh reinforcement at the top and bottom of foundations to reduce the potential for differential settlements to occur.

Foundations (and ground floor slabs) should be designed in accordance with NHBC Standards Chapter 4.2 Building near Trees (Ref. 10) in accordance with the requirements for soils of medium-volume change potential.

It should be noted that design loadings have not been provided at this stage. If proposed loadings are likely to exceed the ABP provided above, an alternative foundation solution such as piling would need to be considered where higher loads are required. Any piling solution would need to be designed and warranted by a specialist subcontractor.

Please note that a cut and fill drawing has not been provided at this stage. The foundation assessment does not take into account any proposed cut and fill levels which may determine more favourable ABP should founding depths be within the mudstone strata of the Tetragraptus Beds. The foundation assessment should be reviewed once proposed levels are known.

4.4 Ground Floor Slab

At this stage it is anticipated a cut/fill exercise will be required to accommodate any new build across both areas and in conjunction with any earthworks reprofiling a ground bearing floor slab could be considered providing granular material is placed beneath the floor slab and compacted in layers in accordance with any engineered specification. Alternatively, a suspended floor slab could be utilised or a suspended floor slab should also be adopted in conjunction with a piled foundation solution if required.

Where the structures are to be located within the influencing zone of existing or future trees, they should be designed in accordance with NHBC guidance Chapter 4.2.

Any floor slab design will need to accommodate basic radon protection measures in accordance with BR 211, BRE 2015 (Ref 25).

4.5 Excavations

Excavations to proposed formation level for new foundations and infrastructure should be feasible using standard excavation plant and equipment. Random and potentially severe falls

should be anticipated from the faces of near vertically sided unsupported excavations carried out at the site.

Where personnel are required to enter near vertically sided excavations, it is considered that full support should be provided to the full depth of all excavations.

It is recommended that all support systems are continually assessed by fully trained or experienced personnel.

Limited groundwater was recorded during the intrusive works. Post investigation monitoring has recorded groundwater at shallow levels which had constant recharge within RO101 and WS107 (one visit) during groundwater monitoring. Should groundwater be encountered during groundworks, sump and pump may not be sufficient and well point dewatering may be required.

4.6 Concrete Classification

The results of sulphate and pH testing carried out on selected soil samples taken during this investigation have been compared with the recommendations outlined in BRE Special Digest 1, Part 1: 2005.

The guidelines given in BRE Special Digest 1 are based upon a site classification relating to its previous usage. It is considered appropriate to define this site as a 'natural ground' location with mobile groundwater for the purposes of concrete classification.

On the basis of the above, it is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1.

One sample, SA206 0.90m – 1.20m (located in a southern car park within reworked natural deposits) is considered to be potentially pyritic and would likely require a higher Design Sulphate Class. If development is proposed for this area, further testing should be undertaken to confirm the design class in this area of the site.

4.7 Pavement Design

In-situ plate bearing tests were undertaken across the site at five locations to determine the equivalent CBR value. The tests were undertaken below the topsoil layer, at depths between 0.30m and 0.60m begl within cohesive Glacial Till deposits. The results range between 1% and 3% at four locations and 7% at one location. For design purposes, a design CBR of 1% should be utilised.

The results are provided in Appendix VII.

4.8 Infiltration Testing

Seven machine excavated pits were undertaken in pre-agreed locations on the site, to a maximum depth of 1.90m begl. The pits were utilised for infiltration testing. The pits were

backfilled with 20mm wash gravel, using a perforated pipe to allow for monitoring of the water level. Where possible, the tests were filled three times in line with BRE 365 – Soakaway Design, 2016.

SA201, SA203, SA204 and SA205

SA201 was located within the main college grounds, within soft landscaping adjacent to the main car park. SA203 to SA205 were located within the field to the east of the college. The 'storage' area of the four tests was located within Glacial Till Deposits.

These infiltration tests are considered to be failed tests, as the water did not drain sufficiently over a 24 hour period. The results are interpreted as worst case i.e. practically impervious strata with an assumed infiltration rate of less than 10^{-11}.

SA202

SA202 was located within the garden area of residential dwellings on site. Three infiltration tests were completed between 13th and 15th August. The 'storage' area of the water was located within Glacial Till deposits.

Three infiltration tests were completed between 13th and 15th August 2024. The infiltration rates ranged between 3.85×10^{-6} and 4.36×10^{-6}.

SA206 and SA207

SA206 and SA207 were located within soft landscaping adjacent to the southern car park. Three infiltration tests were completed in both locations between 13th and 15th August 2024. The infiltration rates ranged between 5.49×10^{-5} and 9.15×10^{-5} for SA206 and 3.48×10^{-6} and 9.29×10^{-6} for SA207.

The storage area of the water was located within Made Ground material (reworked natural deposits) comprising weathered mudstone, recovered as dark grey (with orange staining) clayey gravel and cobbles of mudstone.

The results of the infiltration testing can be found within Appendix VI.

4.9 Hand Excavated Pits for Underground Services

Three hand excavated trial pits were undertaken in order to expose existing underground utilities in the field adjacent to the east of the college campus (TP101 – TP103).

TP101 was located in the east of the field, to locate a service shown as 'possible water' on the associated utility drawing. The service was identified at 1.20m begl, exposing an assumed 100mm diameter cast iron pipe.

TP102 was located in the southwest of the field, to expose an unnamed service. An assumed cast iron pipe (100mm diameter) was identified at approximately 0.90m begl depth.

TP103 was located in the southeast of the field, to expose an unnamed service ‘joint’. The ‘joint’ was identified at approximately 0.50m begl, assumed to be lead and 25mm in diameter.

5. Environmental Assessment

5.1 Introduction

The approach to the human health risk assessment reported here follows the principals given in the Land Contamination Risk Management (LCRM) Guidance, i.e. application of the following assessment hierarchy:

- Tier 1 risk screening by establishment of potential pollutant linkages, i.e. the preliminary conceptual site model (PCSM), or
- Tier 2 generic quantitative assessment using generic assessment criteria (GACs) that represent 'acceptably low' risk, or
- Tier 3 quantitative risk assessment using site specific assessment criteria (SSACs) that represent 'unacceptable risk', or where generic assessment criteria are not available, or they are not applicable to the CSM.

The results of laboratory analysis have been screened against GACs including the Defra Category 4 Screening Levels (C4SL) and LQM and CIEH S4ULs for Human Health Risk Assessment (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3180. All rights reserved). (Refs 11 and 12 respectively).

In the absence of a standard scenario for a school environment the standard exposure scenario of residential without home grown produce is usually used to identify potential exposure pathways for human health receptors. Controlled water, flora and fauna and property receptors have also been included within the CSM.

It should be noted that organic contamination (PAH, TPH and BTEX) have been screened against the GAC for 1% Soil Organic Matter (SOM).

Where possible the assessment of PAHs is undertaken using the surrogate marker approach; recommended by Health Protection Agency (2010) guidance, providing the PAH profile is sufficiently similar to the coal tars tested by Culp et al (1998). Where PAH profile is not sufficiently coal tar like the TEF method is adopted using the LQM and CIEH S4ULs.

5.2 Assessment of Soil Analysis Results

Twelve samples, as detailed in section 3.3.2, were scheduled for analysis from the development area to provide a basis for characterising the soils to outline the potential impacts on human health and any environmental receptors from any contamination found.

The screening process for on-site human health receptors show that the GACs for a residential without home grown produce setting were not exceeded, with one exception for Arsenic within Made Ground material, as detailed below.

Table 5.2.1 – GAC Exceedances – residential without home grown produce

Contaminant	GAC (mg/kg)	No. of exceedances	Concentration (mg/kg), sampling location and depth (m)
Arsenic	40 [1]	1	53 – SA201, 0.10m – 0.20m

[1] C4SL

One soil sample was submitted for an asbestos screen and identification. No asbestos or asbestos containing materials have been identified.

The previous ground investigation did not record any elevated levels of contaminates within twelve samples across the main college site.

5.3 Human Health Mitigation

With the exception of the above, the concentrations of potential contaminants recorded at the site indicates an acceptably low risk and therefore significant mitigation measures are not likely to be required as part of the development.

The previous ground investigation did not record any elevated levels of contaminants, including testing of Made Ground materials across the site.

In areas where buildings or hardstanding are proposed the risk will be negligible as this effectively acts as capping and breaks the Source - Pathway - Receptor linkage. Should soft landscaping be proposed, a clean cover system may be required, however given the ground conditions underlying the site and limited extent of exceedances, the requirements for a capping system is likely to comprise suitable topsoil / subsoil for a suitable growing medium.

Made Ground may be suitable to raise levels beneath soft landscaped areas, providing a suitable break layer is provided between the material and the proposed cover system.

Three topsoil tests in accordance with BS3882:2015 Specification for Topsoil have been completed on samples from WS107, TP104 and HDP02 (Locality of SA205). The results indicate that the soils are not compliant with the Multipurpose Range due to Mass Loss on Ignition, Soil pH Value, Electrical Conductivity and Available Nutrient Content. The soils are may comply with a Specific Purpose Range (Low Fertility) but should be confirmed by the landscape architect. The results are compliant within a residential without homegrown produce setting in terms of human health. The results of the topsoil testing are reported in Appendix IV.

It should be noted that levels may dictate the need to remove made ground materials to an appropriately licensed waste management facility.

Although finalised development plans have not been provided, new builds are proposed and therefore some demolition is considered likely. Areas of Made Ground are likely to exist beneath existing building footprints which will not have been assessed as part of this ground

investigation. Where demolition is proposed, it is considered prudent to undertake further ground investigation to confirm that no residual risk of contamination remains, should any source of contamination be identified during demolition stage.

Should any obvious evidence of unexpected contamination be encountered during the redevelopment works it should be reported to HSP Consulting Engineers Ltd so that an inspection can be made and appropriate sampling and assessment work be carried out.

Appropriate health and safety precautions should be adopted during any excavation works to avoid exposure to potentially contaminated soils and dust.

The approval of the local Environmental Health Officer should be sought with respect to the soil contamination assessment and mitigation proposals.

5.4 Ground Gas Risk Assessment

Dual use gas and groundwater monitoring installations were constructed within four of the boreholes at the site during the ground investigation (RO101, RO102, WS107 and WS109). Each well has been constructed using 50mm diameter HDPE pipe. All of the borehole installations have a 6mm pea gravel surround to the slotted pipe with a bentonite seal above and a gas tap. The covers are cemented flush with ground level and are either lockable stopcock or raised covers.

Please note that the wells installed as part of the former ground investigation were located but could not be opened (locking mechanism seized). Ground gas monitoring as part of the previous investigation indicates a Characteristic Situation 1 based on the results.

Four monitoring visits have been undertaken during the current investigation within RO101, RO102, WS107 and WS109. Atmospheric pressures ranged between 1017 and 1025 across the monitoring visits, all of which were recorded as steady during the monitoring period.

The results of monitoring indicate that methane has been recorded less than the minimum detection (<0.1% by vol). Carbon dioxide has been recorded at concentrations ranging between 0.1% by volume to 4.0% by volume in boreholes RO101, R0102 and WS109. In WS107 a maximum carbon dioxide concentration of 5.2% by volume in air was recorded during the first monitoring visit, dropping to between 0.3% and 0.5% by volume on the 2nd and 3rd monitoring visit (the borehole was flooded on the 4th visit).

Maximum steady state gas flows have been recorded at 4.9l/hr within RO101 during the first monitoring visit (the borehole was subsequently flooded the following visits, despite attempts to bail the water out). In the remaining boreholes the steady state gas flows were recorded from <0.1l/hr to 1.6l/hr.

Based on worst case results for each borehole, the maximum steady state gas screening value for the site is 0.0624l/hr.

The results have been assessed in line with the guidance provided in BS8485:2015 + A1:2019 Code of Practice of the design of protective measures for methane and carbon dioxide ground gas for new buildings (Ref 16) and CIRIA Document C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings' (Ref 17). Comparison of these results with Table 2 of BS8485:2015 + A1:2019 indicates that the site falls in a Characteristic Situation 1 based on the gas screening value. Where Carbon Dioxide levels exceeded 5%, consideration should be given to increasing the Characteristic Situation to 2. During this investigation there has been one marginal exceedance of Carbon Dioxide with a value of 5.2%, no exceedance was recorded during the previous investigation and identified on site sources of ground gas are limited to shallow Made Ground (reworked natural) and topsoil. It is considered that Characteristic Situation 1 is appropriate for the site. Based on the UK radon map the site is located within an area where 3% to 5% of the properties are above the action level for radon and therefore basic radon measures will be required for any new development on the site in accordance with BR 211 (Ref 25).

Depleted oxygen levels were observed within a number of the boreholes during the monitoring. This poses a risk of asphyxiation to construction and maintenance workers in confined spaces such as excavations or manhole chambers. A confined spaces risk assessment should be carried out prior to working in any buried structures or excavations.

The results of the ground gas monitoring can be found in Appendix VIII.

5.5 Water Supply

The environmental testing for the site has been compared to the following document in order to assess the most appropriate pipe material that should be used upon the site for mains water supply:

'Water UK Contaminated Land Assessment Guidance (January 2014).' (Ref. 20).

Testing to the Water UK Suite is beyond the scope of the investigation. However, it is noted that natural ground occurs at shallow depths across the majority of the site and there is no measured indicative organic contamination (petroleum hydrocarbons, phenols) that is likely to be detrimental to the use of plastic water supply pipes within the natural soils tested.

The use of plastic water supply pipes is likely to be suitable if located in natural ground. However, specific targeted testing may be required by the utility provider once the water supply pipe route(s) have been confirmed. Water supply pipes should be placed at a minimum depth of 0.75m below the finished ground level(s) (to the top of the piping).

5.6 Waste Classification

The results of the chemical testing have been assessed using web-based software for classifying hazardous waste, HazWasteOnline™. The results indicate materials on site are likely to be classified non-hazardous waste. The results are included in Appendix IX.

Please note the above classification provides an indication of how the material should be classified for removal off site; however, this should be used at your approved waste handler's discretion and further testing may be required prior to any offsite disposal. Further testing may classify the material as "inert" for landfill disposal, but this should be undertaken at a later stage by appointed development contractors.

The decision of the disposal facility to accept/reject the waste is final and there is no obligation for any facility to accept the waste.

5.7 Updated Conceptual Site Model

The PCSM and Summary of plausible pollutant linkages was produced by undertaking a Source-Pathway-Receptor analysis of the site using readily available online information and previous reports. Based on the findings of this and the current site investigation the updated conceptual site model has been updated and is presented in the table below.

Table 5.7.1 - Updated Conceptual Site Model.

Source	Pathway	Receptor	Consequence	Probability	Risk	Comments
On Site **S1:** Historical and Contemporary land use: Made Ground associated with development of the site. **S2:** Historical land use: Orchard.	**P1:** Human uptake pathways	**R1:** End Users **R2:** Construction and Maintenance workers	Mild	Unlikely	Very Low	The screening process for on-site human health receptors show that the GACs, representative of minimal risk for a residential without home grown produce setting were exceeded for Arsenic in one location in Made Ground material. Should soft landscaping be proposed, a clean cover system may be required, however given the ground conditions underlying the site and limited extent of exceedances, the requirements for a capping system is likely to comprise suitable topsoil / subsoil for a suitable growing medium. The risk is considered to be VERY LOW.
	P2: Horizontal and vertical migration of mobile contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man-made). **P5**: Overland flow / surface runoff.	**R3:** Controlled Water: Surface and Groundwater	Mild	Unlikely	Very Low	The potential sources identified 'on-site' are limited and the ground investigation has confirmed that excluding one arsenic exceedance, no other exceedances have been identified above the relevant GACs. The risk to Controlled Waters is considered to be VERY LOW.
	P4: Underground services and foundations could be potentially directly affected by the presence of contaminated soils or groundwater	**R4:** Services and structures	Mild	Unlikely	Very Low	The natural soils may contain sulphates that present a risk to buried concrete. The Glaciofluvial deposits and Tetragraptus Beds are classified as a Design Sulphate Class of DS-1 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-1 has been recorded. The risk is considered to be VERY LOW. The risk to water supply pipes (due to lack of measured indicative organic contamination (petroleum hydrocarbons, phenols) is considered low within natural ground. Provided that the correct construction materials are used the risk remains VERY LOW.
	P7: Root uptake.	**R5:** Proposed Flora and fauna	Mild	Unlikely	Very Low	Site won soils (topsoil/subsoil) may be suitable as a planting medium but would need to be confirmed by a landscape architect. The risk of uptake to proposed flora and fauna is considered to be VERY LOW providing a suitable planting medium is placed.
Off Site **S3:** Historical and Contemporary Land Use: Tank and Filter Beds.	**P2:** Horizontal and vertical migration of contaminants through potentially permeable soils and rocks	**R1:** End Users	Minor	Unlikely	Very Low	Whilst potential sources of off-site contamination exist migration of contaminants is unlikely due to low leaching soils, one arsenic exceedance was recorded but is considered to be due to Made Ground material on site. The risk from associated from off-site sources is considered to be VERY LOW.
On and Off Site Gas Sources **S4:** Ground Gases from made ground **S5:** Ground Gases from historical and recent landfill	**P6:** Vertical and lateral migration of ground gases and/or vapour.	**R1:** End Users	Mild	Unlikely	Very Low	Based on the worst case results for each borehole, the results indicate a ground gas characteristic situation of CS1. Based on the UK radon map the site is located within an area where 3% to 5% of the properties are above the action level for radon and therefore basic radon measures will be required for any new development on the site in accordance with BR 211. Providing the measures are appropriately adopted, the risk is considered to be VERY LOW.

6. Development Constraints

The following development constraints have been identified and should be considered further;

A significant level change is recorded across the site which will likely require reprofiling in order to create a level development platform. A cut and fill drawing has not been provided at this stage but once available, the geotechnical assessment should be reviewed to confirm the assessment.

The screening process for on-site human health receptors show that the GACs, representative of minimal risk for a residential without home grown produce, adopted for a school setting, were exceeded for Arsenic in one Made Ground sample. In areas where buildings or hardstanding are proposed the risk will be negligible as this effectively acts as capping and breaks the Source - Pathway - Receptor linkage. Should soft landscaping be proposed, a clean cover system may be required, however given the ground conditions underlying the site and limited extent of exceedances, the requirements for a capping system is likely to comprise suitable topsoil / subsoil for a suitable growing medium.

Following four rounds of ground gas monitoring, it is considered that Characteristic Situation 1 is appropriate for the site and that ground gas protection measures will not be required. Based on the UK radon map the site is located within an area where 3% to 5% of the properties are above the action level for radon and therefore basic radon measures will be required for any new development on the site in accordance with BR 211.

7. References

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Appendix I

DO NOT SCALE

NOTES:

- Red Line Boundary

N

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CLIENT:
Gleeds Management Ltd

PROJECT:
Coleg Sir Gar – Pibwrlwyd Campus

TITLE:
Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN: NS	DATE: OCT 2022
PROJECT No: C4103	DRAWING No: 502

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Appendix II

GENERAL NOTES

1. Do not scale.

2. This drawing is to be read in conjunction with all other relevant drawings.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in millimetres unless noted otherwise.

6. This drawing is based on RSK Drawing Number, 2320496, dated 16.07.2024.

7. All survey information is provided by the surveying company and HSP cannot accept any liability for any discrepancies there in. All survey information to be verified on site by contractor. Should discrepancies be identified, HSP to be notified immediately.

KEY

WS?	Window Sampling Borehole.
RO?	Rotary Open Hole Borehole Location.
SA?	Soakaway Pit Test Location.
CBR?	CBR Location.
TP?	Trial Pit Location.

REV	BY	DATE	DETAILS	CKD
-	-	-	-	P01

STATUS: -SELECT-

CLIENT: WEPco

PROJECT: Coleg Sir Gar - Pibwrlwyd Campus

TITLE: Site Investigation Layout Plan. Sheet 1 of 2.

hsp consulting
Lawrence House, 6 Meadowbank Way, Eastwood, Nottingham, NG16 3SB
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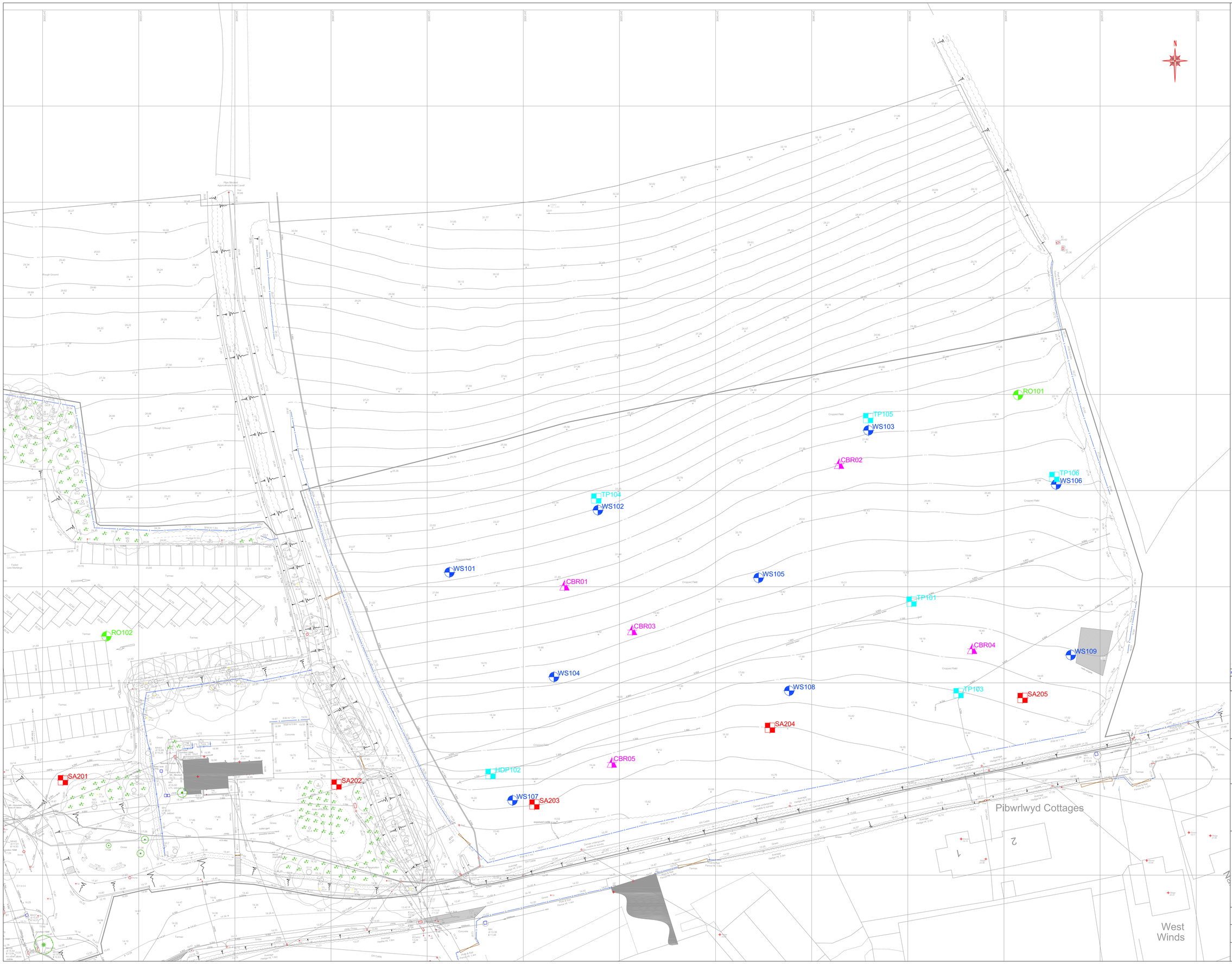
SCALE	PROJECT NO.	SHEET SIZE A0
NTS	C4103	
DATE	**DRAWN**	**CHECKED**
05.09.24	DRS	MK

DRAWING NO.: HSP-00-00-DR-C-5100

REV: P01



GENERAL NOTES

1. Do not scale.

2. This drawing is to be read in conjunction with all other relevant drawings.

3. Should there be any discrepancy between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

4. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval been given, it is entirely at his own risk.

5. All dimensions shown are in millimetres unless noted otherwise.

6. This drawing is based on RSK Drawing Number, 2320496, dated 16.07.2024.

7. All survey information is provided by the surveying company and HSP cannot accept any liability for any discrepancies there in. All survey information to be verified on site by contractor. Should discrepancies be identified, HSP to be notified immediately.

KEY

- WS? — Window Sampling Borehole.
- RO? — Rotary Open Hole Borehole Location.
- SA? — Soakaway Pit Test Location.
- CBR? — CBR Location.
- TP? — Trial Pit Location.

REV	BY	DATE	DETAILS	CKD
-	-	-	-	P01

STATUS: -SELECT-

CLIENT: WEPco

PROJECT: Coleg Sir Gar - Pibwrlwyd Campus

TITLE: Site Investigation Layout Plan. Sheet 2 of 2.

hsp consulting
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Tel: 01773 535555
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SCALE	PROJECT NO.	SHEET SIZE A0
NTS	C4103	
DATE	**DRAWN**	**CHECKED**
05.09.24	DRS	MK

DRAWING NO.: HSP-00-00-DR-C-5100

REV: P01

Appendix III

Borehole Log

Borehole No. **RO101** Sheet 1 of 2			
Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241402.94 - 218359.89	Hole Type RO
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.34	Scale 1:50
Client: WEPco		Dates: 12/08/2024 - 13/08/2024	Logged By AR

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								CLAY (Drillers description)
		1.20		N=47 (8,6/8,17,12,10)				
		2.00		N=17 (4,3/2,4,5,6)				
		3.00		N=29 (3,2/8,5,8,8)				
					3.60	18.74		SANDSTONE (Drillers description)
		4.00		50 (25 for 100mm/50 for 65mm)				
		5.00		50 (25 for 70mm/50 for 30mm)				
		6.50		50 (25 for 20mm/50 for 35mm)				
		8.00		50 (25 for 95mm/50 for 10mm)	8.00	14.34		SANDSTONE / MUDSTONE (Drillers description)
		9.50		50 (25 for 15mm/50 for 30mm)	9.50	12.84		SANDSTONE (Drillers description)

Continued on next sheet

Remarks
1. Borehole undertaken utilising 'open holing' methodology with water flush as drilling medium.
2. Borehole was terminated 15.00m depth at target depth.
3. Gas and water monitoring standpipe installed to 5.00m depth.

Borehole Log

Borehole No. **RO101**

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241402.94 - 218359.89	Hole Type RO
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.34	Scale 1:50
Client: WEPco		Dates: 12/08/2024 - 13/08/2024	Logged By AR

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		11.00		50 (25 for 20mm/50 for 40mm)					11
									12
		12.50		50 (25 for 50mm/50 for 20mm)					13
		14.00		50 (25 for 15mm/50 for 35mm)					14
					15.00	7.34		End of borehole at 15.00 m	15
									16
									17
									18
									19
									20

Remarks
1. Borehole undertaken utilising 'open holing' methodology with water flush as drilling medium.
2. Borehole was terminated 15.00m depth at target depth.
3. Gas and water monitoring standpipe installed to 5.00m depth.

Borehole Log

Borehole No. **RO102**

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241213.28 - 218309.68	Hole Type RO
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.06	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 15/08/2024	Logged By AR

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		1.20		N=35 (6,7/9,11,8,7)				CLAY (Drillers description)
		2.70		N=36 (5,9/8,8,10,10)				
					3.60	18.46		MUDSTONE / SANDSTONE (Drillers description)
		4.20		50 (25 for 15mm/50 for 35mm)	4.20	17.86		SANDSTONE (Drillers description)
		5.50		50 (25 for 25mm/50 for 40mm)	5.50	16.56		MUDSTONE / SANDSTONE (Drillers description)
		7.00		50 (25 for 20mm/50 for 30mm)	7.00	15.06		SANDSTONE (Drillers description)
		8.50		50 (25 for 15mm/50 for 25mm)				

Continued on next sheet

Remarks
1. Borehole undertaken utilising 'open holing' methodology with water flush as drilling medium.
2. Borehole was terminated 15.00m depth at target depth.
3. Gas and water monitoring standpipe installed to 5.00m depth.

Borehole Log

Borehole No. **RO102**

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241213.28 - 218309.68	Hole Type RO
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.06	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 15/08/2024	Logged By AR

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.00		50 (25 for 65mm/50 for 40mm)				
		11.50		50 (25 for 55mm/50 for 30mm)				
		13.00		50 (25 for 55mm/50 for 40mm)	13.00	9.06		MUDSTONE / SANDSTONE (Drillers description)
		14.50		50 (25 for 25mm/50 for 35mm)	14.50	7.56		SANDSTONE (Drillers description)
					15.00	7.06		End of borehole at 15.00 m

11 12 13 14 15 16 17 18 19 20

Remarks
1. Borehole undertaken utilising 'open holing' methodology with water flush as drilling medium.
2. Borehole was terminated 15.00m depth at target depth.
3. Gas and water monitoring standpipe installed to 5.00m depth.

Trial Pit Log

Trialpit No **SA201**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241204.23 - 218279.75 Level: 19.41	Date 13/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 2.2 × 0.6	Scale 1:25
Client: WEPco		Depth 1.90	Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES					MADE GROUND: Grass over dark brownish black clayey gravelly fine to coarse sand (topsoil). Gravel is fine to coarse sub-angular of aggregate, asphalt and coal.
				0.30	19.11		MADE GROUND: Dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, angular of brick and plastic
	0.40 - 0.50	ES					
				0.70	18.71		Soft becoming firm yellowish brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone and coal fragments. Cobbles are subrounded of mudstone [GLACIAL TILL].
	0.80 - 0.90	ES					
	0.80 - 1.10	B	HVR=66				
	1.50 - 1.80	B					
				1.90	17.51		End of pit at 1.90 m

1 2 3 4 5

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing

Stability: Stable

Trial Pit Log

Trialpit No **SA202**

Sheet 1 of 1

Project Name:	Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241261.18 - 218279.85 Level: 18.05
Location:	Pibwrlwyd Lane, Carmarthen	Dimensions (m):	1.8 × 0.6
Client:	WEPco	Depth 1.70	

Date 13/08/2024

Scale 1:25

Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 - 0.30	ES					Grass over dark brown sandy slightly gravelly CLAY (TOPSOIL) with abundant 20mm rootlets. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone and rare quartzite.
				0.35	17.70		
	0.50 - 0.60 0.50 - 0.90	ES B					Firm yellowish brown mottled grey slightly sandy gravelly CLAY with rare sub-angular to sub-rounded cobbles of mudstone. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	1.30 - 1.70	B		1.30	16.75		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY with rare cobbles of mudstone. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				1.70	16.35		End of pit at 1.70 m

1 2 3 4 5

Remarks: 1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing

Stability: Stable

AGS

Trial Pit Log

Trialpit No **SA203**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241302.31 - 218274.70 Level: 16.00	Date 13/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 1.8 × 0.5	Scale 1:25
Client: WEPco		Depth 1.80	Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 - 0.30	ES		0.30	15.70		Grass over brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone.
	0.60 - 0.70	ES					Firm brown mottled orange slightly silty slightly sandy gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone. Cobbles rare sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	0.70 - 1.00	B	HVR=58	0.70	15.30		Soft to firm grey mottled orangish brown slightly sandy slightly gravelly silty CLAY with occasional sub-angular to sub-rounded boulders of mudstone. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	1.40 - 1.80	B					
				1.80	14.20		End of pit at 1.80 m

1 2 3 4 5

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing.

Stability: Stable

AGS

Trial Pit Log

Trialpit No **SA204**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241351.32 - 218290.65 Level: 16.46	Date 13/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 1.9 × 0.5 Depth 1.70	Scale 1:25
Client: WEPco			Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES					Grass over brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone.
				0.25	16.21		Firm brown mottled orange slightly silty slightly sandy gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone. Cobbles rare sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	0.50 - 0.60	ES					
	0.60 - 1.00	B		0.60	15.86		Soft pale grey mottled orange silty sandy CLAY with occasional sub-angular to sub-rounded of mudstone. Sand is fine to coarse [GLACIAL TILL].
	1.40 - 1.70	B		1.40	15.06		Firm orangish brown mottled grey sandy gravelly CLAY with rare sub-angular cobbles of mudstone. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				1.70	14.76		End of pit at 1.70 m

1 2 3 4 5

Remarks: 1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing

Stability: Stable

AGS

Trial Pit Log

Trialpit No **SA205**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241403.88 - 218296.86 Level: 17.67	Date 13/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 1.9 × 0.6	Scale 1:25
Client: WEPco		Depth 1.50	Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES					Grass over brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone.
				0.30	17.37		
	0.40 - 0.50 0.40 - 0.60	ES B					Dark brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular mudstone [GLACIAL TILL].
				0.70	16.97		
	0.90 - 1.30	B					Soft light brownish grey slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				1.50	16.17		End of pit at 1.50 m

1 2 3 4 5

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing.

Stability: Stable

AGS

Trial Pit Log

Trialpit No **SA206**

Sheet 1 of 1

Project Name:	Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241138.92 - 218176.18 Level: 11.93
Date	13/08/2024		
Location:	Pibwrlwyd Lane, Carmarthen	Dimensions (m):	2.3 × 0.55
Scale	1:25		
Client:	WEPco	Depth	1.70
Logged	MK		

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.05 - 0.10	TJ					MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clay (topsoil)). Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of quartzite and rare mudstone.
	0.40 - 0.50	ES		0.40	11.53		MADE GROUND: Soft to firm orangish brown mottled grey slightly gravelly sandy clay. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [REWORKED NATURAL].
	0.40 - 0.70	LB					
	0.80 - 0.90	ES		0.70	11.23		MADE GROUND: Reworked weathered mudstone. Recovered as dark grey slightly sandy clayey fine to coarse sub-angular to sub-rounded gravels and cobbles of mudstone. Sand is fine to coarse [REWORKED NATURAL].
	0.90 - 1.20	LB					
				1.70	10.23		End of pit at 1.70 m

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing.

Stability: Stable

Trial Pit Log

Trialpit No **SA207**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241165.93 - 218187.33 Level: 12.03	Date 13/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 1.65 × 0.5	Scale 1:25
Client: WEPco		Depth 1.80	Logged DS

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.05 - 0.10	TJ					MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clay (topsoil)). Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of quartzite and rare mudstone.
	0.20 - 0.30	ES		0.15	11.88		MADE GROUND: Soft dark brown sandy gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded of mudstone {REWORKED NATURAL}.
	0.60 - 0.70	ES		0.35	11.68		MADE GROUND: Reworked weathered mudstone. Recovered as dark grey slightly sandy clayey fine to coarse sub-angular to sub-rounded gravels and cobbles of mudstone. Sand is fine to coarse [REWORKED NATURAL].
	1.00 - 1.30	LB					
	1.60	LB					
				1.80	10.23		End of pit at 1.80 m

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with gravel and perforated piping, and utilised for infiltration testing.

Stability: Stable

Trial Pit Log

Trialpit No **TP101**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241380.77 - 218316.91 Level: 18.80	Date 12/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 0.1 × 0.1	Scale 1:25
Client: WEPco		Depth 0.90	Logged DS

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25	18.55		MADE GROUND: Grass overlying reworked brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse subangular of mudstone.
				0.90	17.90		MADE GROUND: Reworked brown mottled yellow slightly gravelly sandy CLAY with occasional sub-angular cobbles of mudstone. Sand is fine to coarse. Gravel is fine to coarse sub-rounded to subangular of mudstone [REWORKED GLACIAL TILL].
							End of pit at 0.90 m

Remarks: 1. Pit dug for utility inspection, pipe located at 0.85m begl.

Stability: Stable

Trial Pit Log

Trialpit No **TP102**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241293.18 - 218281.05 Level: 16.19	Date 12/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 0.1 × 0.1	Scale 1:25
Client: WEPco		Depth 1.20	Logged DS

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.25	15.94		MADE GROUND: Grass overlying reworked brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone.
				1.20	14.99		MADE GROUND: Reworked brown mottled yellowish brown slightly gravelly sandy CLAY with occasional sub-angular cobbles of mudstone. Sand is fine to coarse. Gravel is fine to coarse sub-rounded to sub-angular of mudstone [REWORKED GLACIAL TILL].
							End of pit at 1.20 m

Remarks: 1. Pit dug for utility inspection, pipe located at 0.90m begl.

Stability: Stable

Trial Pit Log

Trialpit No **TP103**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241390.55 - 218297.86 Level: 17.51	Date 12/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 0.1 × 0.1 Depth 0.55	Scale 1:25
Client: WEPco			Logged DS

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10	17.40		MADE GROUND: Grass overlying reworked brown slightly gravelly sandy CLAY (TOPSOIL). Sand is fine to coarse. Gravel is fine to coarse sub-rounded to sub-angular of mudstone.
				0.35	17.16		MADE GROUND: Reworked brown slightly sandy slightly gravelly CLAY with occasional fine to coarse sub-rounded to sub-angular cobbles of concrete. Sand is fine to coarse. Gravel is fine to coarse sub-rounded to sub-angular of mudstone and concrete [REWORKED GLACIAL TILL].
				0.55	16.95		MADE GROUND: Reworked brown mottled yellowish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-rounded to sub-angular of mudstone [REWORKED GLACIAL TILL].

End of pit at 0.55 m

1 2 3 4 5

Remarks: 1. Pit dug for utility inspection, pipe located at 0.50m begl.

Stability: Stable

Trial Pit Log

Trialpit No **TP104**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241315.18 - 218338.36 Level: 23.25	Date 14/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 2 × 0.6 Depth 2.50	Scale 1:25
Client: WEPco			Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	TJ					Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
				0.25	23.00		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
				0.40	22.85		Soft becoming firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium, sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				0.80	22.45		Firm yellowish grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	1.00 - 1.50	LB					
	2.10 - 2.50	LB		2.10	21.15		Weathered MUDSTONE recovered as dark grey with orange sandy fine to coarse sub-angular to sub-rounded GRAVELS of mudstone with frequent pockets of clay. Sand is fine to coarse [TETRAGRAPTUS BEDS].
				2.50	20.75		End of pit at 2.50 m

1 2 3 4 5

Remarks: 1. No groundwater was encountered during the excavation.
2. Pit backfilled with arisings upon completion.

Stability: Stable

AGS

Trial Pit Log

Trialpit No **TP105**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241371.74 - 218355.08 Level: 22.41	Date 14/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 2.2 × 0.6 Depth 2.50	Scale 1:25
Client: WEPco			Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
				0.35	22.06		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
	0.70 - 1.10	LB		0.65	21.76		Soft becoming firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				1.40	21.01		Firm yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to medium sub-rounded of mudstone [GLACIAL TILL].
	2.20 - 2.50	LB		2.20	20.21		Firm brown and yellowish grey mottled sandy gravelly cobbly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
				2.50	19.91		End of pit at 2.50 m

1 2 3 4 5

Remarks:
1. No groundwater was encountered during the excavation.
2. Pit backfilled with arisings upon completion.

Stability: Stable

AGS

Trial Pit Log

Trialpit No **TP106**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241410.48 - 218342.84 Level: 21.10	Date 14/08/2024
Location: Pibwrlwyd Lane, Carmarthen		Dimensions (m): 2 × 0.6 Depth 2.50	Scale 1:25
Client: WEPco			Logged MK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	20.90		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
	0.70 - 1.00	LB		1.60	19.50		Soft becoming firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	2.00 - 2.50	LB		2.00	19.10		Firm dark orange greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone with frequent orange staining [GLACIAL TILL].
				2.50	18.60		Firm dark grey gravelly cobbly CLAY with occasional fine to coarse sub-angular ro sub-rounded boulders of . Gravel is fine to coarse sub-angular to sub-rounded of mudstone. Cobble is fine to coarse sub-angular to sub-rounded [TETRAGRAPTUS BEDS].
							End of pit at 2.50 m

1 2 3 4 5

Remarks: 1. No groundwater was encountered during the excavation.
2. Pit backfilled with arisings upon completion.

Stability: Stable

Borehole Log

Borehole No. **WS101**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241284.64 - 218322.99	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.06	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20 - 0.30	ES		0.25	21.81		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.60 - 0.70	ES		0.55	21.51		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
		1.00 1.20	D	N=11 (2,2/2,3,3,3)	1.10	20.96		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.50 - 1.80	B					
		2.00 2.20	D	N=50 (3,3/4,7,13,26)	2.10	19.96		Firm yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to medium sub-rounded of mudstone [GLACIAL TILL].
					2.45	19.61		Weathered MUDSTONE. Recovered as dark grey slightly clayey sandy fine to coarse sub-angular gravels of mudstone. Sand is fine to coarse.

End of borehole at 2.45 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 2.45m depth due to SPT refusal.

Borehole Log

Borehole No. **WS102**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241315.53 - 218335.93	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.81	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.25	22.56		Grass over brown slightly gravelly slightly sandy CLAY (topsoil) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.50 - 0.60	ES		0.40	22.41		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
		0.70 - 1.00	B		0.80	22.01		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.00		N=18 (2,3/4,4,4,6)				
		1.50	D					
		1.70		N=17 (2,2/3,4,4,6)				
					2.10	20.71		Firm yellowish grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		2.40 - 2.70	B					
		2.50	D					
		2.70		N=50 (10,15/50 for 195mm)	2.70	20.11		Weathered MUDSTONE. Recovered as, dark grey with orange staining sandy fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].

End of borehole at 2.70 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 2.70m depth due to SPT refusal.

Borehole Log

Borehole No. **WS103**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241371.80 - 218352.53	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 22.02	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.05 - 0.15	ES					Grass over brown slightly gravelly slightly sandy CLAY [TOPSOIL] with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
					0.35	21.67		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
					0.65	21.37		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.00	D					
		1.00		N=12 (2,4/3,3,3,3)				
		1.20 - 1.50	B		1.40	20.62		
		2.00		N=32 (3,4/6,8,9,9)				Firm yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to medium sub-rounded of mudstone [GLACIAL TILL].
		2.30	D		2.20	19.82		
		2.65		N=50 (6,7/50 for 265mm)	2.60	19.42		Firm to stiff dark orange greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone with frequent orange staining [GLACIAL TILL].
					2.65	19.37		Weathered MUDSTONE. Recovered as, dark grey with orange staining sandy fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].
								Cobble of grey sandstone at 2.60m begl.
								End of borehole at 2.65 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 2.65m depth due to SPT refusal.

Borehole Log

Borehole No. **WS105**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241348.94 - 218321.85	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 19.69	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.40 - 0.50	ES		0.30	19.39		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.90 1.00 1.00 - 1.50	D B	N=16 (1,3/3,4,4,5)	0.70	18.99		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
		2.00 2.00 2.00 - 2.30	D B	N=14 (1,2/3,3,4,4)	1.90	17.79		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		2.80 3.00	D	N=50 (6,8/50 for 295mm)	2.70 3.00	16.99 16.69		Firm brown mottled orangish grey slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
								Weathered MUDSTONE. Recovered as, dark grey with orange staining clayey fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].

End of borehole at 3.00 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 3.00m depth due to SPT refusal.

Borehole Log

Borehole No. **WS104**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241306.38 - 218301.23	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 19.09	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10 - 0.20	ES		0.30	18.79		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.70 - 0.80	ES					Soft to firm yellowish brown mottled grey slightly sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to medium sub-rounded of mudstone [GLACIAL TILL].
		1.00		N=7 (1,1/1,0,2,4)				
		1.30 - 1.50	B					
		1.90	D		1.80	17.29		Firm to stiff greyish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		2.00		N=25 (3,4/5,6,6,8)				
		2.50	D		2.40	16.69		Weathered MUDSTONE. Recovered as dark grey with orange staining sandy fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].
		2.50 - 2.80	B					
		3.00		N=50 (10,14/50 for 225mm)	3.00	16.09		End of borehole at 3.00 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 3.00m depth due to SPT refusal.

Borehole Log

Borehole No. **WS106**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241410.85 - 218341.28	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 20.82	Scale 1:50
Client: WEPco		Dates: 14/08/2024 - 14/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.20	20.62		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.50 - 0.60	ES					
		0.70 - 1.00	B		0.70	20.12		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.00 1.00	D	N=12 (2,3/3,3,3,3)				
					1.60	19.22		Firm dark orange greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone [GLACIAL TILL].
		2.00		N=12 (2,3/3,2,3,4)				Firm dark grey slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [TETRAGRAPTUS BEDS].
		2.50 - 3.00	B					
		3.00 3.00	D	N=19 (4,3/3,4,5,7)				
		3.65		N=50 (25 for 65mm/50 for 55mm)	3.55 3.60	17.27 17.22		Weathered MUDSTONE. Recovered as dark grey slightly clayey sandy fine to coarse sub-angular gravels of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].

End of borehole at 3.55 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 3.55m depth due to SPT refusal.

Borehole Log

Borehole No. **WS107**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241297.76 - 218275.56	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 16.17	Scale 1:50
Client: WEPco		Dates: 15/08/2024 - 15/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.30	15.87		Grass over brown slightly gravelly slightly sandy CLAY (CLAY) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.50 - 0.60	ES		0.50	15.67		Soft brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
		1.00	D		1.00	15.17		Firm greyish brown with occasional yellow mottling slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.00		N=20 (2,4/5,5,4,6)				
		1.00 - 1.50	B					
		2.00		N=15 (1,1/2,2,4,7)	1.90	14.27		Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone [GLACIAL TILL].
		2.20	D					
		2.80	D		2.70	13.47		Firm dark orangish brown gravelly CLAY. Gravel is fine to coarse sub-angular of mudstone [GLACIAL TILL].
		3.00		N=50 (25 for 115mm/50 for 100mm)	3.00	13.17		Weathered MUDSTONE. Recovered as, dark grey with orange staining clayey fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].

End of borehole at 3.00 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 3.00m depth due to SPT refusal.
3. Gas and water monitoring standpipe installed to 3.00m depth.

Borehole Log

Borehole No. **WS108**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241355.32 - 218298.35	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 17.13	Scale 1:50
Client: WEPco		Dates: 15/08/2024 - 15/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20 - 0.30	ES		0.30	16.83		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.70 - 1.00 0.80 1.00	B D	N=15 (1,2/3,3,4,5)	1.10	16.03		Firm pale grey mottled brownish yellow slightly gravelly silty CLAY. Gravel is fine to medium sub-angular of mudstone [GLACIAL TILL].
		1.30 - 1.60 1.50	B D		1.60	15.53		Firm to stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.95 2.00	D	N=50 (7,8/8,12,14,16)	1.90 2.00	15.23 15.13		Firm to stiff orangish brown mottled grey slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular of mudstone [GLACIAL TILL].
								Weathered MUDSTONE. Recovered as, dark grey with orange staining clayey fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].
								End of borehole at 2.00 m

Remarks
1. No groundwater was encountered during the drilling works.
2. Borehole was terminated 2.00m depth due to SPT refusal.

Borehole Log

Borehole No. **WS109**

Sheet 1 of 1

Project Name: Coleg Sir Gar Pibwrlwyd Campus	Project No. C4103	Co-ords: 241413.91 - 218305.78	Hole Type WS
Location: Pibwrlwyd Lane, Carmarthen		Level: 18.42	Scale 1:50
Client: WEPco		Dates: 15/08/2024 - 15/08/2024	Logged By MK

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.40 - 0.50	ES		0.35	18.07		Grass over brown slightly gravelly slightly sandy CLAY (TOPSOIL) with rootlets. Sand is fine to medium. Gravel is fine to coarse sub-angular of coal and mudstone.
		0.70 - 1.00	B		0.70	17.72		Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium fine to medium sub-angular to sub-rounded of mudstone [GLACIAL TILL].
		1.00 1.00	D	N=12 (1,1/1,3,5,3)				
		1.50 - 1.80	B		1.50	16.92		Firm yellowish brown and orangish grey mottled slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of mudstone [GLACIAL TILL].
	▼	1.75	D					
		2.00		N=24 (3,5/6,7,6,5)				
		2.60	D		2.45	15.97		Firm to stiff yellowish brown and grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium sub-rounded of mudstone [GLACIAL TILL].
		3.00		N=50 (25 for 135mm/50 for 125mm)	3.00	15.42		Weathered MUDSTONE. Recovered as, dark grey with orange staining clayey fine to coarse sub-angular to sub-rounded GRAVELS of mudstone. Sand is fine to coarse [TETRAGRAPTUS BEDS].
								Band of dark grey sandy gravelly CLAY.
								End of borehole at 3.00 m

Remarks
1. Groundwater strike encountered from 2.00m begl.
2. Borehole was terminated 3.00m depth due to SPT refusal.
3. Gas and water monitoring standpipe installed to 3.00m depth.

Appendix IV

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	24-27162-8		
Initial Date of Issue:	06-Sep-2024	**Date of Re-Issue:**	15-Oct-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-27162-7 in its entirety		
Client	HSP Consulting Engineers Limited		
Client Address:	Lawrence House Meadowbank Way Eastwood Nottinghamshire NG16 3SB		
Contact(s):	Matthew Kent		
Project	C4103 Coleg Gir Sar		
Quotation No.:		**Date Received:**	22-Aug-2024
Order No.:		**Date Instructed:**	22-Aug-2024
No. of Samples:	11		
Turnaround (Wkdays):	11	**Results Due:**	06-Sep-2024
Date Approved:	13-Sep-2024	**Subcon Results Due:**	13-Sep-2024

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited					**Chemtest Job No.:**	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162
Quotation No.:					**Chemtest Sample ID.:**	1855656	1855657	1855658	1855659	1855660	1855661	1855662	1855663
					Sample Location:	SA201	SA202	SA205	SA206	WS101	WS103	WS104	WS105
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.10	0.20	0.10	0.05	0.20	0.05	0.10	0.40
					Bottom Depth (m):	0.20	0.30	0.20	0.10	0.30	0.15	0.20	0.50
					Date Sampled:	13-Aug-2024	13-Aug-2024	13-Aug-2024	13-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024
					Asbestos Lab:	DURHAM							
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A	-							
Asbestos Identification		U	2192		N/A	No Asbestos Detected							
Moisture		N	2030	%	0.020	20	15	21	29	21	21	24	22
Soil Colour		N	2040		N/A	Brown	Brown		Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones		Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones
Soil Texture		N	2040		N/A	Sand	Loam		Sand	Sand	Sand	Sand	Sand
Chromatogram EPH	EH_2D_Total_#1	N			N/A	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
Chromatogram (TPH)	EH_1D_Total	N			N/A			See Attached	See Attached				
Chromatogram VPH	HS_2D_Total	N			N/A	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
pH at 20C		M	2010		4.0	9.3	I/S	9.2	9.1	9.0	9.1	9.2	9.0
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.82	0.58	0.45	< 0.40	< 0.40	0.87	1.0	0.45
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.037	< 0.010	< 0.010	< 0.010	< 0.010	0.025	< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.23	0.070	0.070	0.060	0.11	0.050	0.050	0.020
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.7	< 0.50	2.8	2.7	2.6	3.1	4.2	4.5
Sulphate (Total)		U	2430	mg/kg	100	3400	1700	1200	730	920	610	660	290
Arsenic		M	2455	mg/kg	0.5	53	12	11	9.4	14	9.7	8.4	6.4
Cadmium		M	2455	mg/kg	0.10	0.35	0.20	< 0.10	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	21	13	18	14	28	21	19	18
Antimony		N	2455	mg/kg	2.0	3.4	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	70	31	11	15	22	24	13	13
Mercury		M	2455	mg/kg	0.05	0.35	0.09	0.09	0.06	0.23	0.10	0.07	< 0.05
Nickel		M	2455	mg/kg	0.50	36	20	11	11	17	13	11	12
Lead		M	2455	mg/kg	0.50	92	51	32	43	50	48	32	16
Selenium		M	2455	mg/kg	0.25	3.7	0.47	0.47	< 0.25	0.44	0.33	< 0.25	< 0.25
Vanadium		U	2455	mg/kg	0.5	32	25	24	18	43	32	30	19
Zinc		M	2455	mg/kg	0.50	120	120	49	83	74	51	50	47
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[C] < 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	[C] < 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	1.1	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	[C] < 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	4.5	5.1	< 3.0	< 3.0	[C] < 3.0	3.5	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10	< 10

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited					**Chemtest Job No.:**	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162
Quotation No.:					**Chemtest Sample ID.:**	1855656	1855657	1855658	1855659	1855660	1855661	1855662	1855663
					Sample Location:	SA201	SA202	SA205	SA206	WS101	WS103	WS104	WS105
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.10	0.20	0.10	0.05	0.20	0.05	0.10	0.40
					Bottom Depth (m):	0.20	0.30	0.20	0.10	0.30	0.15	0.20	0.50
					Date Sampled:	13-Aug-2024	13-Aug-2024	13-Aug-2024	13-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024
					Asbestos Lab:	DURHAM							
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	5.8	6.7	< 5.0	< 5.0	[C] < 5.0	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	[C] < 10	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[C] < 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	[C] < 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	2.3	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.4	5.0	3.6	4.7	3.5	[C] 4.1	3.9	4.3
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.1	20	14	5.0	10	[C] 7.2	12	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	23	4.9	4.1	< 1.0	< 1.0	[C] < 1.0	1.8	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	9.9	27	18	9.7	14	[C] 11	16	6.1
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	33	32	22	< 10	14	[C] 11	18	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	[C] < 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	13	33	25	11	17	[C] 15	20	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	36	38	29	11	17	[C] 15	21	< 10
LOI		M	2610	%	0.10	14	13	12	10	7.8	8.1	8.0	5.3
Organic Matter		M	2625	%	0.40	31	7.6	6.9	7.1	4.5	7.9	8.3	2.2
Total Organic Carbon		M	2625	%	0.20			4.0	4.1				
Aliphatic TPH >C5-C6	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C6-C8	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C8-C10	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C10-C12	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C12-C16	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C16-C21	EH_2D_AL_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aliphatic TPH >C21-C35	EH_2D_AL_#1	N	2680	mg/kg	1.0			5.2	< 1.0				
Aliphatic TPH >C35-C44	EH_2D_AL_#1	N	2680	mg/kg	1.0			6.6	5.2				
Total Aliphatic Hydrocarbons	EH_2D_AL_#1	N	2680	mg/kg	5.0			12	5.2				
Aromatic TPH >C5-C7	EH_2D_AR_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aromatic TPH >C7-C8	EH_2D_AR_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aromatic TPH >C8-C10	EH_2D_AR_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aromatic TPH >C10-C12	EH_2D_AR_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aromatic TPH >C12-C16	EH_2D_AR_#1	N	2680	mg/kg	1.0			< 1.0	< 1.0				
Aromatic TPH >C16-C21	EH_2D_AR_#1	N	2680	mg/kg	1.0			3.5	4.8				
Aromatic TPH >C21-C35	EH_2D_AR_#1	N	2680	mg/kg	1.0			14	5.0				
Aromatic TPH >C35-C44	EH_2D_AR_#1	N	2680	mg/kg	1.0			5.4	< 1.0				
Total Aromatic Hydrocarbons	EH_2D_AR_#1	N	2680	mg/kg	5.0			23	9.8				
Total Petroleum Hydrocarbons	EH_2D_Total_#1	N	2680	mg/kg	10.0			35	15				
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162
Quotation No.:				**Chemtest Sample ID.:**		1855656	1855657	1855658	1855659	1855660	1855661	1855662	1855663
				Sample Location:		SA201	SA202	SA205	SA206	WS101	WS103	WS104	WS105
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.10	0.20	0.10	0.05	0.20	0.05	0.10	0.40
				Bottom Depth (m):		0.20	0.30	0.20	0.10	0.30	0.15	0.20	0.50
				Date Sampled:		13-Aug-2024	13-Aug-2024	13-Aug-2024	13-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024
				Asbestos Lab:		DURHAM							
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[C] < 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	0.62	< 0.10	0.68	0.48	0.42	0.49	0.59	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.68	< 0.10	0.13	0.23	0.13	0.24	0.14	< 0.10
Anthracene		M	2800	mg/kg	0.10	0.21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	1.0	< 0.10	0.13	0.55	0.12	0.28	0.13	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.76	< 0.10	0.11	0.58	0.12	0.28	0.12	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.46	< 0.10	< 0.10	0.26	< 0.10	0.16	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	0.49	< 0.10	< 0.10	0.27	< 0.10	0.17	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.64	< 0.10	< 0.10	2.3	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.20	< 0.10	< 0.10	0.63	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.47	< 0.10	< 0.10	2.2	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	2.1	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	2.2	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	5.5	< 2.0	< 2.0	12	< 2.0	< 2.0	< 2.0	< 2.0
Demeton-O		N	2820	mg/kg	0.20			< 0.20					
Phorate		N	2820	mg/kg	0.20			< 0.20					
Demeton-S		N	2820	mg/kg	0.20			< 0.20					
Disulfoton		N	2820	mg/kg	0.20			< 0.20					
Fenthion		N	2820	mg/kg	0.20			< 0.20					
Trichloronate		N	2820	mg/kg	0.20			< 0.20					
Prothiofos		N	2820	mg/kg	0.20			< 0.20					
Fensulphothion		N	2820	mg/kg	0.20			< 0.20					
Sulprofos		N	2820	mg/kg	0.20			< 0.20					
Azinphos-Methyl		N	2820	mg/kg	0.20			< 0.20					
Coumaphos		N	2820	mg/kg	0.20			< 0.20					
Atraton		N	2830	mg/kg	0.20			< 0.20					
Prometon		N	2830	mg/kg	0.20			< 0.20					
Simazine		N	2830	mg/kg	0.20			< 0.20					
Atrazine		N	2830	mg/kg	0.20			< 0.20					
Propazine		N	2830	mg/kg	0.20			< 0.20					
Terbuthylazine		N	2830	mg/kg	0.20			< 0.20					
Secbumeton		N	2830	mg/kg	0.20			< 0.20					
Simetryn		N	2830	mg/kg	0.20			< 0.20					
Ametryn		N	2830	mg/kg	0.20			< 0.20					
Prometryn		N	2830	mg/kg	0.20			< 0.20					

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162	24-27162
Quotation No.:				**Chemtest Sample ID.:**		1855656	1855657	1855658	1855659	1855660	1855661	1855662	1855663
				Sample Location:		SA201	SA202	SA205	SA206	WS101	WS103	WS104	WS105
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.10	0.20	0.10	0.05	0.20	0.05	0.10	0.40
				Bottom Depth (m):		0.20	0.30	0.20	0.10	0.30	0.15	0.20	0.50
				Date Sampled:		13-Aug-2024	13-Aug-2024	13-Aug-2024	13-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024	14-Aug-2024
				Asbestos Lab:		DURHAM							
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Terbutryn		N	2830	mg/kg	0.20			< 0.20					
Alpha-HCH		N	2840	mg/kg	0.20			< 0.20					
Gamma-HCH (Lindane)		N	2840	mg/kg	0.20			< 0.20					
Beta-HCH		N	2840	mg/kg	0.20			< 0.20					
Delta-HCH		N	2840	mg/kg	0.20			< 0.20					
Heptachlor		N	2840	mg/kg	0.20			< 0.20					
Aldrin		N	2840	mg/kg	0.20			< 0.20					
Heptachlor Epoxide		N	2840	mg/kg	0.20			< 0.20					
Gamma-Chlordane		N	2840	mg/kg	0.20			< 0.20					
Alpha-Chlordane		N	2840	mg/kg	0.20			< 0.20					
Endosulfan I		N	2840	mg/kg	0.20			< 0.20					
4,4-DDE		N	2840	mg/kg	0.20			< 0.20					
Dieldrin		N	2840	mg/kg	0.20			< 0.20					
Endrin		N	2840	mg/kg	0.20			< 0.20					
4,4-DDD		N	2840	mg/kg	0.20			< 0.20					
Endosulfan II		N	2840	mg/kg	0.20			< 0.20					
Endrin Aldehyde		N	2840	mg/kg	0.20			< 0.20					
4,4-DDT		N	2840	mg/kg	0.20			< 0.20					
Endosulfan Sulphate		N	2840	mg/kg	0.20			< 0.20					
Methoxychlor		N	2840	mg/kg	0.20			< 0.20					
Endrin Ketone		N	2840	mg/kg	0.20			< 0.20					
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-27162	24-27162	24-27162
Quotation No.:				**Chemtest Sample ID.:**		1855664	1855665	1855666
				Sample Location:		WS107	WS109	TP104
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.10	0.40	0.10
				Bottom Depth (m):		0.20	0.50	0.20
				Date Sampled:		14-Aug-2024	14-Aug-2024	14-Aug-2024
				Asbestos Lab:				
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A			
Asbestos Identification		U	2192		N/A			
Moisture		N	2030	%	0.020	47	23	17
Soil Colour		N	2040		N/A		Brown	
Other Material		N	2040		N/A		Roots	
Soil Texture		N	2040		N/A		Sand	
Chromatogram EPH	EH_2D_Total_#1	N			N/A	See Attached	See Attached	See Attached
Chromatogram (TPH)	EH_1D_Total	N			N/A	See Attached		See Attached
Chromatogram VPH	HS_2D_Total	N			N/A	See Attached	See Attached	See Attached
pH at 20C		M	2010		4.0	8.9	8.8	8.9
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	< 0.40	0.63
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.020	0.040	0.020
Cyanide (Total)		M	2300	mg/kg	0.50	I/S	0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.1	2.5	2.6
Sulphate (Total)		U	2430	mg/kg	100	2000	1100	470
Arsenic		M	2455	mg/kg	0.5	6.1	16	11
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	20	29	24
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	16	14	21
Mercury		M	2455	mg/kg	0.05	0.07	0.07	0.06
Nickel		M	2455	mg/kg	0.50	17	19	18
Lead		M	2455	mg/kg	0.50	32	27	30
Selenium		M	2455	mg/kg	0.25	0.27	0.83	0.42
Vanadium		U	2455	mg/kg	0.5	25	35	27
Zinc		M	2455	mg/kg	0.50	64	58	65
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	[C] < 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	[C] < 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	[C] < 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	[C] 2.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	[C] < 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	10	[C] < 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	[C] < 10	< 10

Results - Soil

Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited								
Quotation No.:					**Chemtest Job No.:**	24-27162	24-27162	24-27162
					Chemtest Sample ID.:	1855664	1855665	1855666
					Sample Location:	WS107	WS109	TP104
					Sample Type:	SOIL	SOIL	SOIL
					Top Depth (m):	0.10	0.40	0.10
					Bottom Depth (m):	0.20	0.50	0.20
					Date Sampled:	14-Aug-2024	14-Aug-2024	14-Aug-2024
					Asbestos Lab:			
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	12	[C] < 5.0	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	12	[C] < 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	[C] < 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	[C] < 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	[C] < 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	[C] < 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.8	[C] 3.8	4.4
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	33	[C] 3.0	2.8
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	9.3	[C] < 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	39	[C] 6.8	7.2
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	49	[C] < 10	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	[C] < 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	51	[C] 11	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	61	[C] 11	< 10
LOI		M	2610	%	0.10	13	6.8	4.0
Organic Matter		M	2625	%	0.40	10	3.1	2.6
Total Organic Carbon		M	2625	%	0.20	6.0		1.5
Aliphatic TPH >C5-C6	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C6-C8	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C8-C10	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C10-C12	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C12-C16	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C16-C21	EH_2D_AL_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C21-C35	EH_2D_AL_#1	N	2680	mg/kg	1.0	10		< 1.0
Aliphatic TPH >C35-C44	EH_2D_AL_#1	N	2680	mg/kg	1.0	12		3.9
Total Aliphatic Hydrocarbons	EH_2D_AL_#1	N	2680	mg/kg	5.0	22		< 5.0
Aromatic TPH >C5-C7	EH_2D_AR_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C7-C8	EH_2D_AR_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C8-C10	EH_2D_AR_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C10-C12	EH_2D_AR_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C12-C16	EH_2D_AR_#1	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C16-C21	EH_2D_AR_#1	N	2680	mg/kg	1.0	5.8		4.4
Aromatic TPH >C21-C35	EH_2D_AR_#1	N	2680	mg/kg	1.0	33		2.8
Aromatic TPH >C35-C44	EH_2D_AR_#1	N	2680	mg/kg	1.0	11		< 1.0
Total Aromatic Hydrocarbons	EH_2D_AR_#1	N	2680	mg/kg	5.0	51		7.1
Total Petroleum Hydrocarbons	EH_2D_Total_#1	N	2680	mg/kg	10.0	73		11
Benzene		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0

Results - Soil

Project: C4103 Coleg Gir Sar

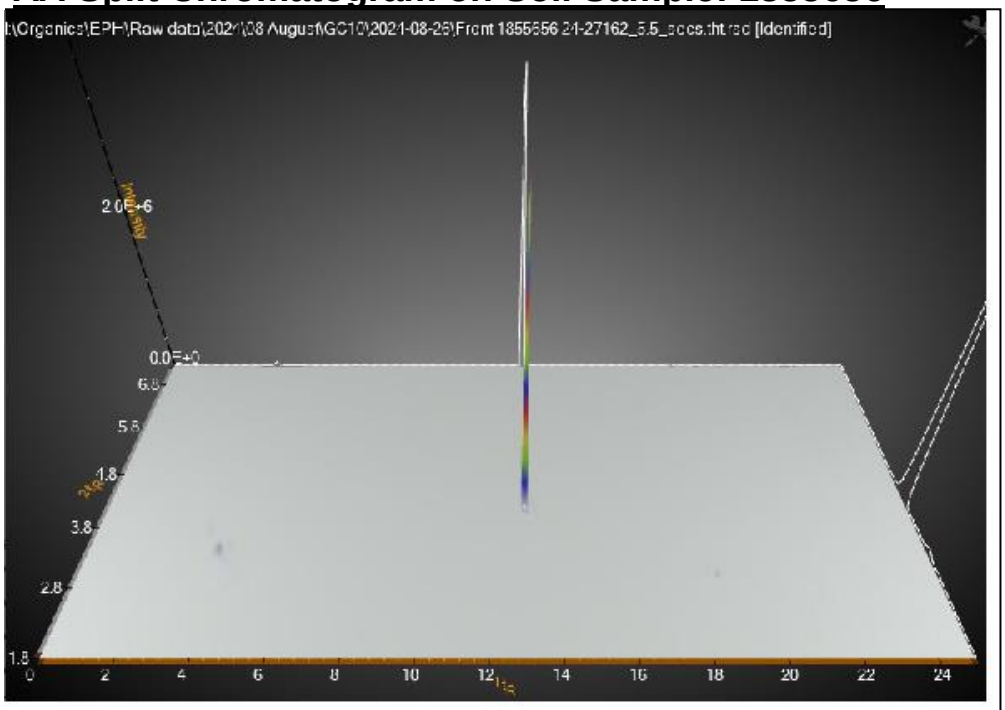
Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-27162	24-27162	24-27162
Quotation No.:				**Chemtest Sample ID.:**		1855664	1855665	1855666
				Sample Location:		WS107	WS109	TP104
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.10	0.40	0.10
				Bottom Depth (m):		0.20	0.50	0.20
				Date Sampled:		14-Aug-2024	14-Aug-2024	14-Aug-2024
				Asbestos Lab:				
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	[C] < 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	1.4	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	0.30	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	2.8	< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	0.77	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	5.2	< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	3.8	< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	2.3	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	2.3	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	2.6	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	1.1	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	2.0	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	1.2	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	1.2	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	27	< 2.0	< 2.0
Demeton-O		N	2820	mg/kg	0.20	< 0.20		< 0.20
Phorate		N	2820	mg/kg	0.20	< 0.20		< 0.20
Demeton-S		N	2820	mg/kg	0.20	< 0.20		< 0.20
Disulfoton		N	2820	mg/kg	0.20	< 0.20		< 0.20
Fenthion		N	2820	mg/kg	0.20	< 0.20		< 0.20
Trichloronate		N	2820	mg/kg	0.20	< 0.20		< 0.20
Prothiofos		N	2820	mg/kg	0.20	< 0.20		< 0.20
Fensulphothion		N	2820	mg/kg	0.20	< 0.20		< 0.20
Sulprofos		N	2820	mg/kg	0.20	< 0.20		< 0.20
Azinphos-Methyl		N	2820	mg/kg	0.20	< 0.20		< 0.20
Coumaphos		N	2820	mg/kg	0.20	< 0.20		< 0.20
Atraton		N	2830	mg/kg	0.20	< 0.20		< 0.20
Prometon		N	2830	mg/kg	0.20	< 0.20		< 0.20
Simazine		N	2830	mg/kg	0.20	< 0.20		< 0.20
Atrazine		N	2830	mg/kg	0.20	< 0.20		< 0.20
Propazine		N	2830	mg/kg	0.20	< 0.20		< 0.20
Terbuthylazine		N	2830	mg/kg	0.20	< 0.20		< 0.20
Secbumeton		N	2830	mg/kg	0.20	< 0.20		< 0.20
Simetryn		N	2830	mg/kg	0.20	< 0.20		< 0.20
Ametryn		N	2830	mg/kg	0.20	< 0.20		< 0.20
Prometryn		N	2830	mg/kg	0.20	< 0.20		< 0.20

Results - Soil

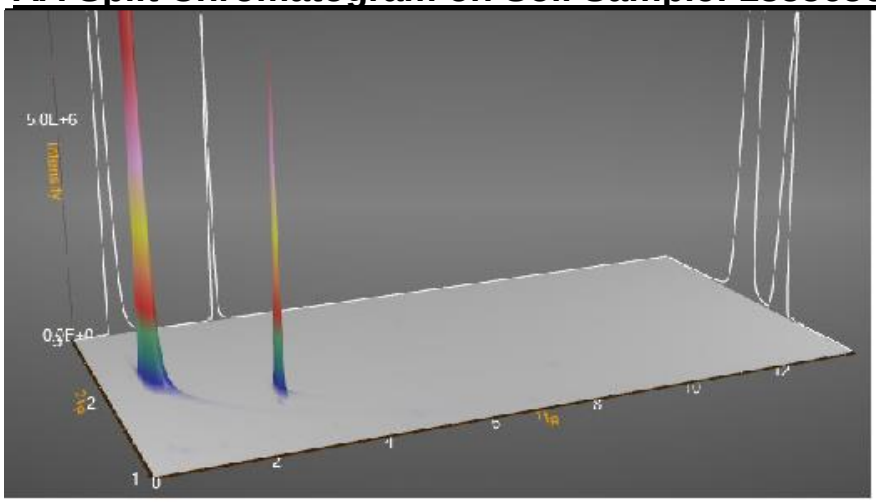
Project: C4103 Coleg Gir Sar

Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-27162	24-27162	24-27162
Quotation No.:				**Chemtest Sample ID.:**		1855664	1855665	1855666
				Sample Location:		WS107	WS109	TP104
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.10	0.40	0.10
				Bottom Depth (m):		0.20	0.50	0.20
				Date Sampled:		14-Aug-2024	14-Aug-2024	14-Aug-2024
				Asbestos Lab:				
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Terbutryn		N	2830	mg/kg	0.20	< 0.20		< 0.20
Alpha-HCH		N	2840	mg/kg	0.20	< 0.20		< 0.20
Gamma-HCH (Lindane)		N	2840	mg/kg	0.20	< 0.20		< 0.20
Beta-HCH		N	2840	mg/kg	0.20	< 0.20		< 0.20
Delta-HCH		N	2840	mg/kg	0.20	< 0.20		< 0.20
Heptachlor		N	2840	mg/kg	0.20	< 0.20		< 0.20
Aldrin		N	2840	mg/kg	0.20	< 0.20		< 0.20
Heptachlor Epoxide		N	2840	mg/kg	0.20	< 0.20		< 0.20
Gamma-Chlordane		N	2840	mg/kg	0.20	< 0.20		< 0.20
Alpha-Chlordane		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endosulfan I		N	2840	mg/kg	0.20	< 0.20		< 0.20
4,4-DDE		N	2840	mg/kg	0.20	< 0.20		< 0.20
Dieldrin		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endrin		N	2840	mg/kg	0.20	< 0.20		< 0.20
4,4-DDD		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endosulfan II		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endrin Aldehyde		N	2840	mg/kg	0.20	< 0.20		< 0.20
4,4-DDT		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endosulfan Sulphate		N	2840	mg/kg	0.20	< 0.20		< 0.20
Methoxychlor		N	2840	mg/kg	0.20	< 0.20		< 0.20
Endrin Ketone		N	2840	mg/kg	0.20	< 0.20		< 0.20
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

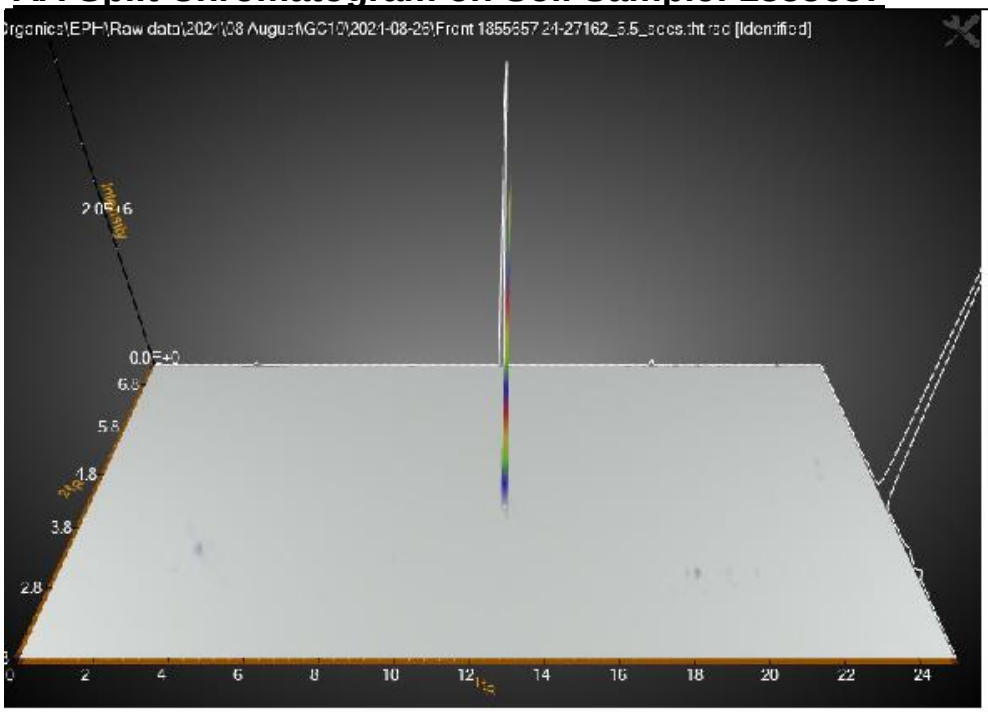
AA-Split Chromatogram on Soil Sample: 1855656



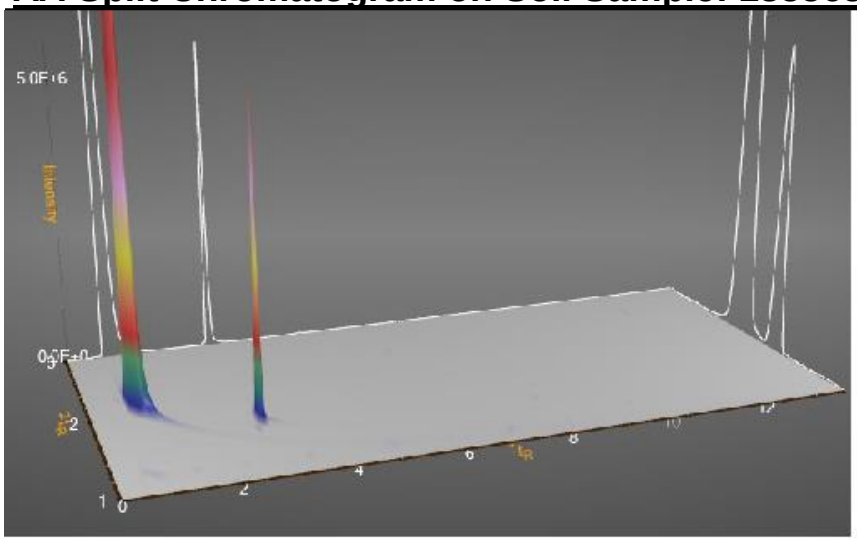
AA-Split Chromatogram on Soil Sample: 1855656



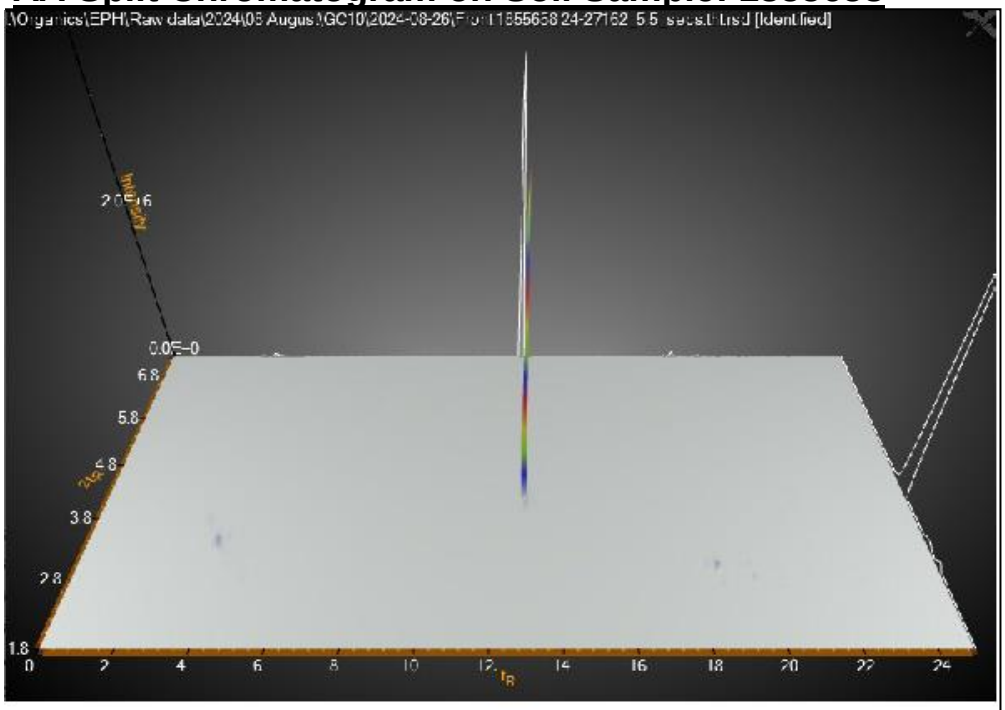
AA-Split Chromatogram on Soil Sample: 1855657



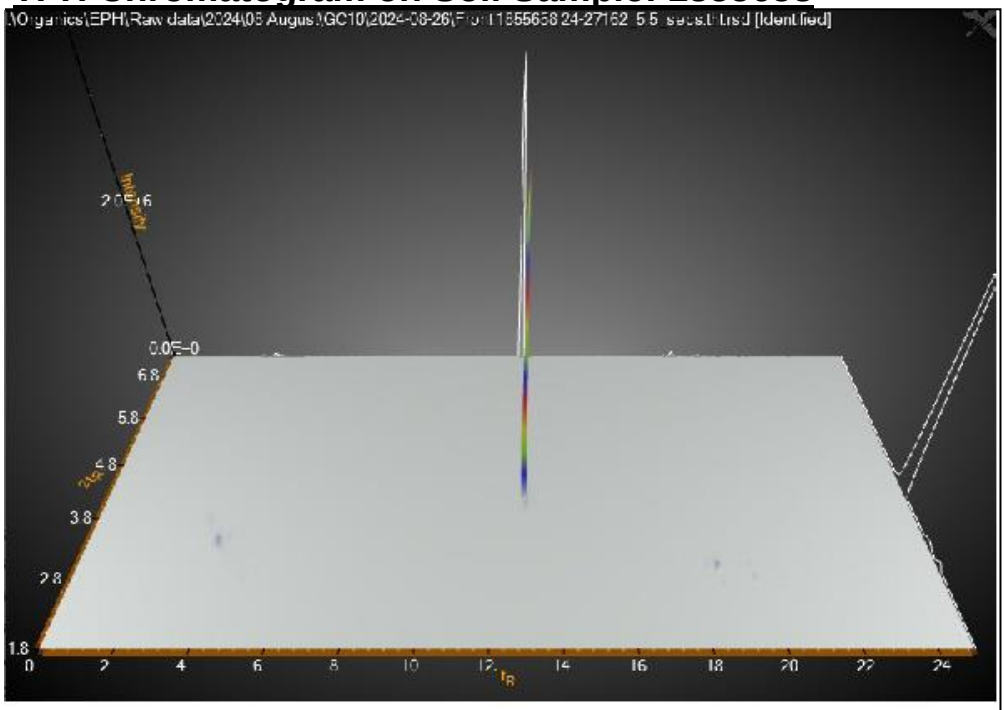
AA-Split Chromatogram on Soil Sample: 1855657



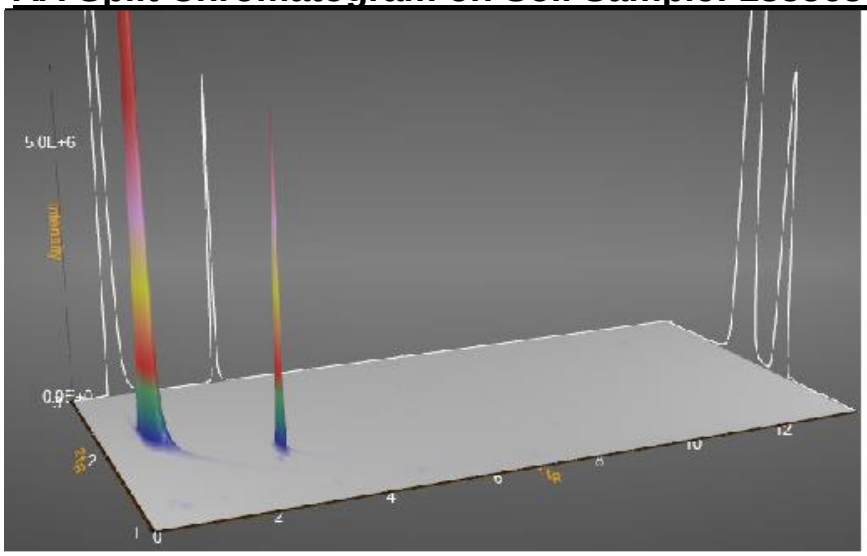
AA-Split Chromatogram on Soil Sample: 1855658



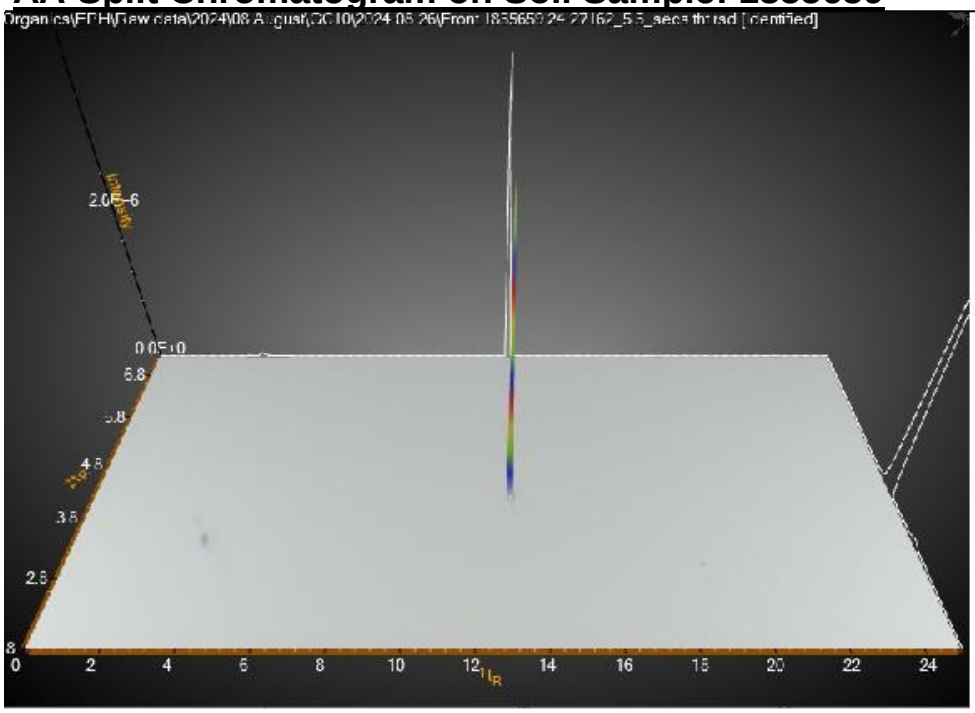
TPH Chromatogram on Soil Sample: 1855658



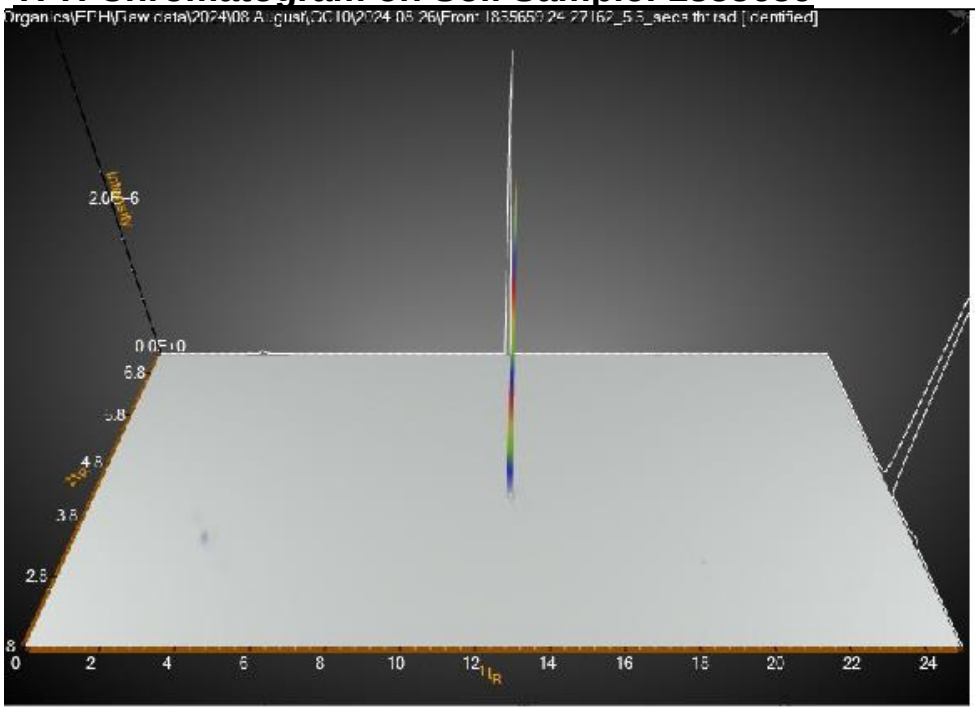
AA-Split Chromatogram on Soil Sample: 1855658



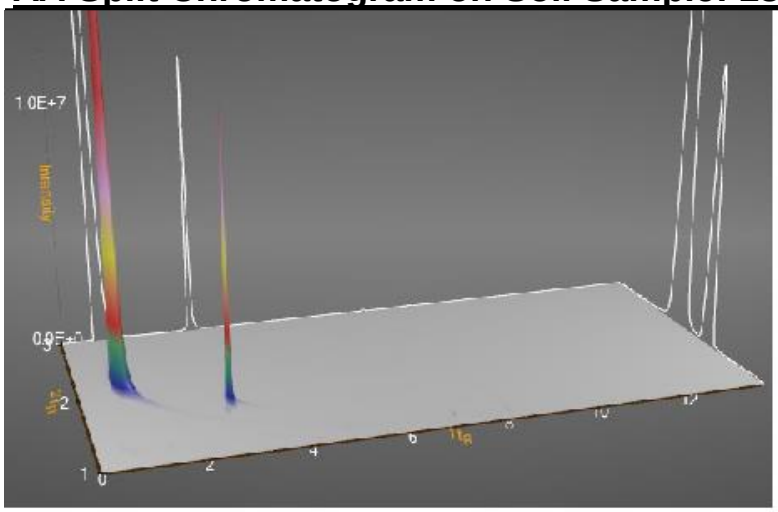
AA-Split Chromatogram on Soil Sample: 1855659



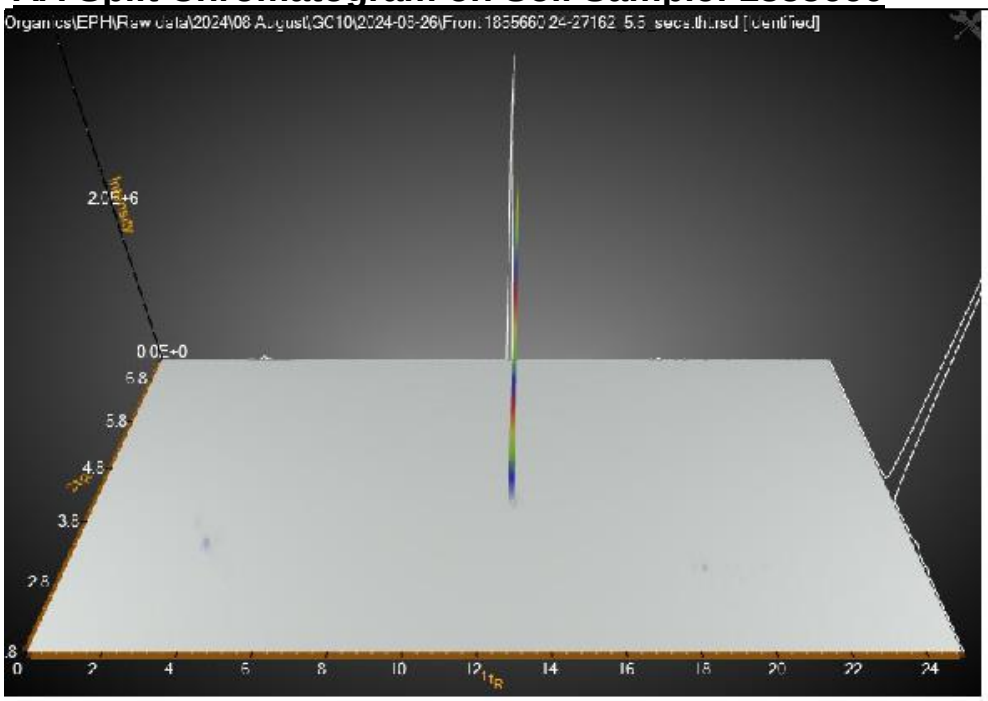
TPH Chromatogram on Soil Sample: 1855659



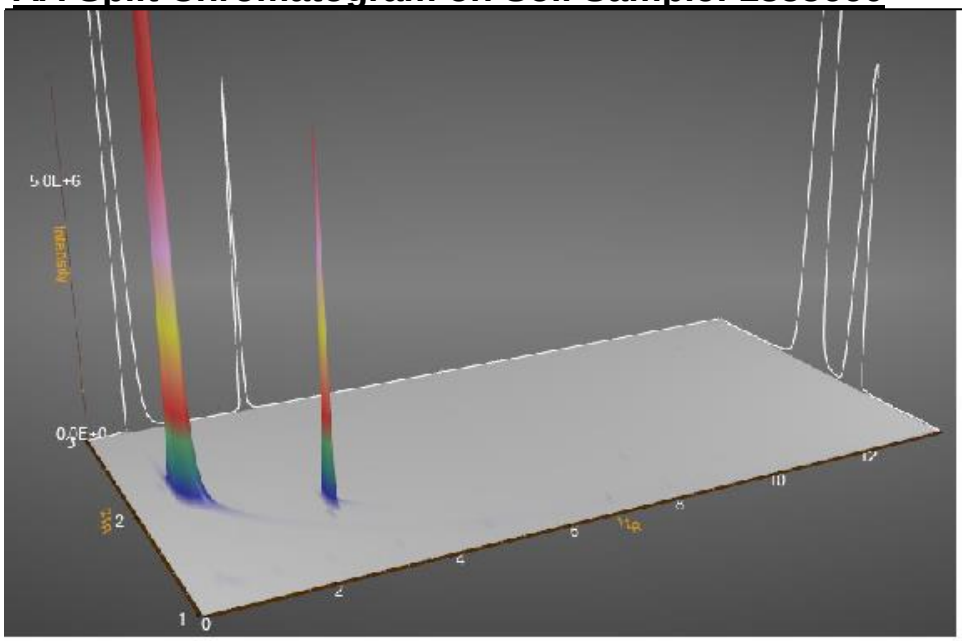
AA-Split Chromatogram on Soil Sample: 1855659



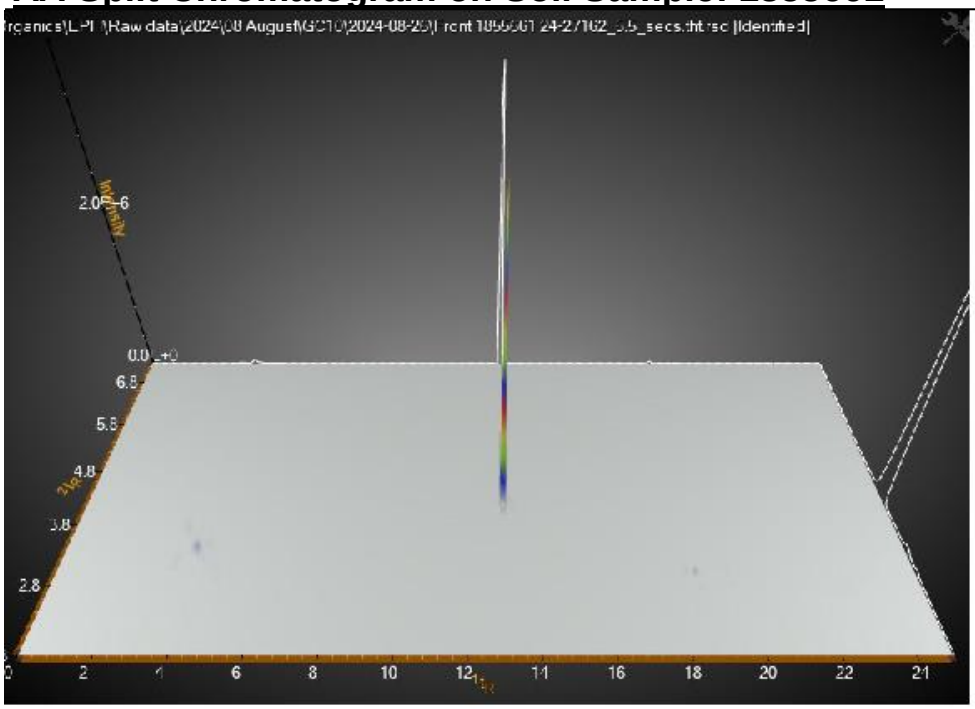
AA-Split Chromatogram on Soil Sample: 1855660



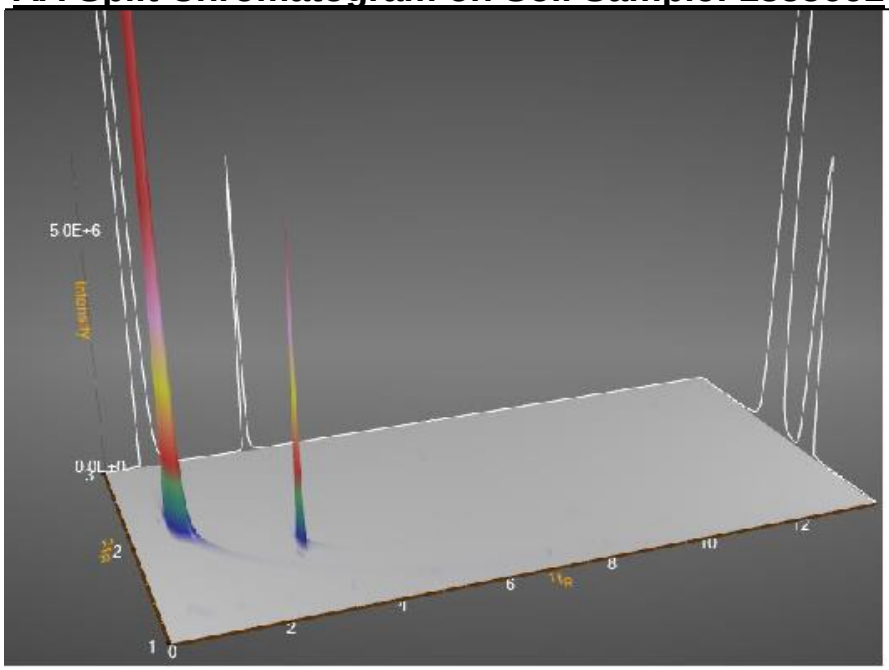
AA-Split Chromatogram on Soil Sample: 1855660



AA-Split Chromatogram on Soil Sample: 1855661



AA-Split Chromatogram on Soil Sample: 1855661



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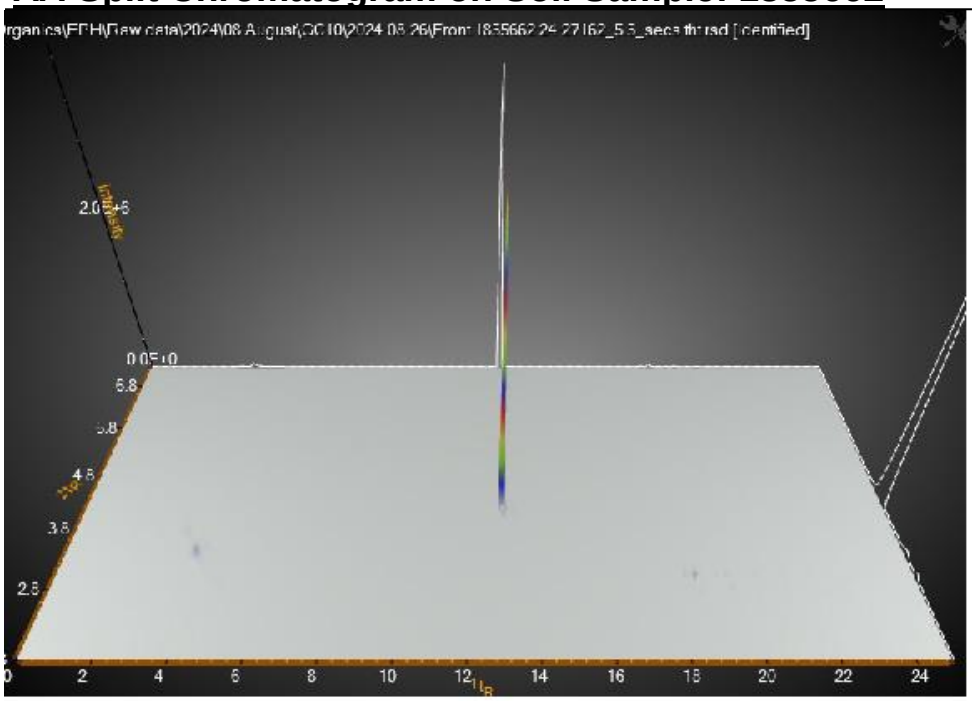

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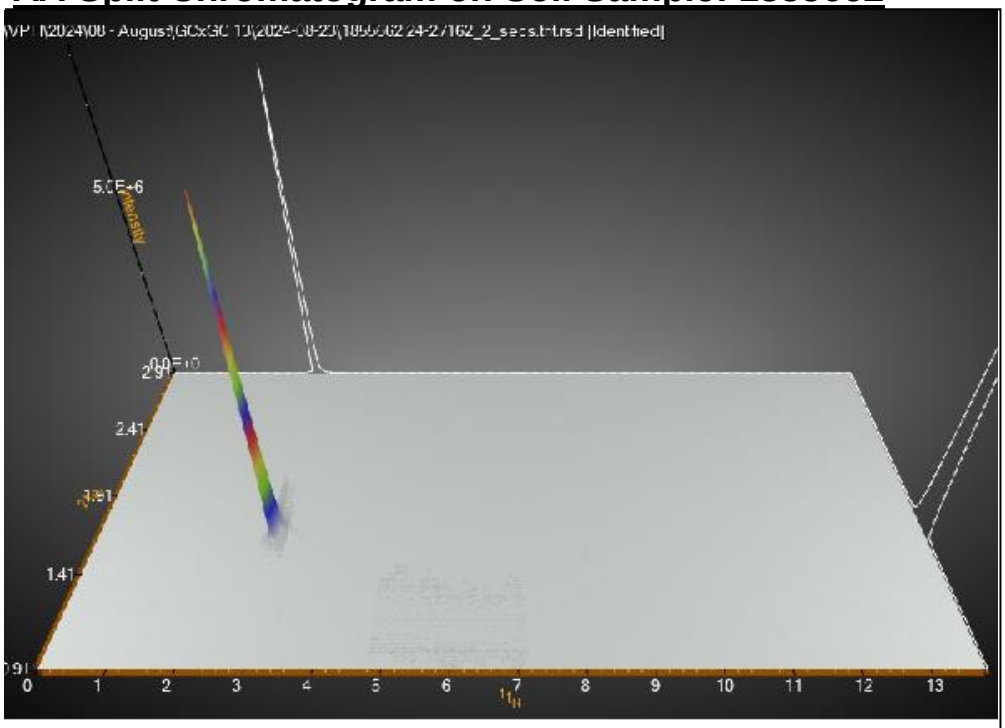
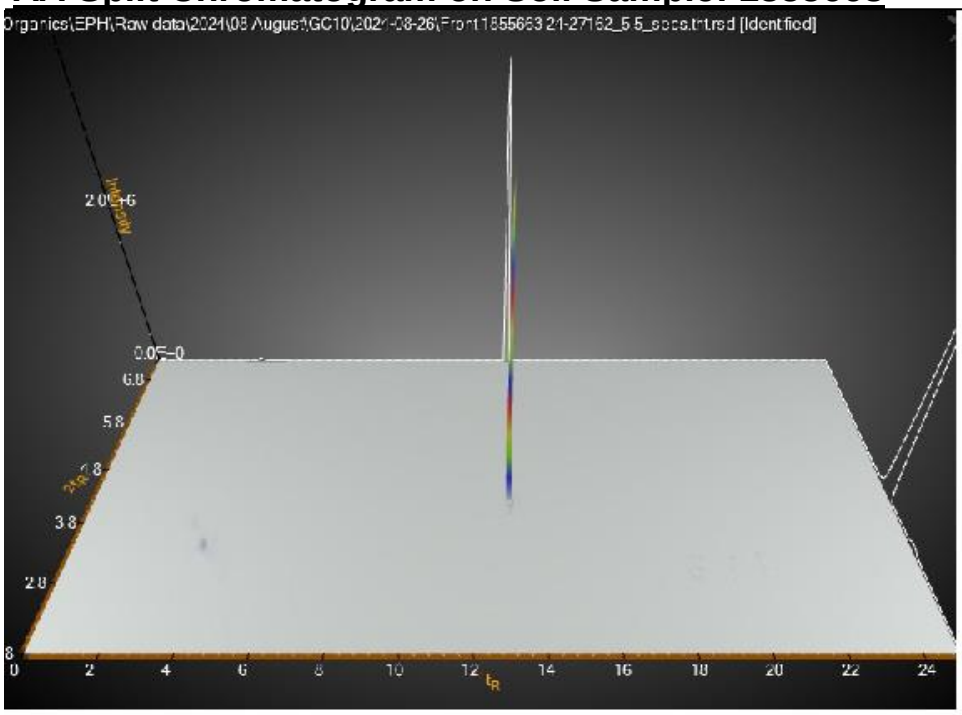
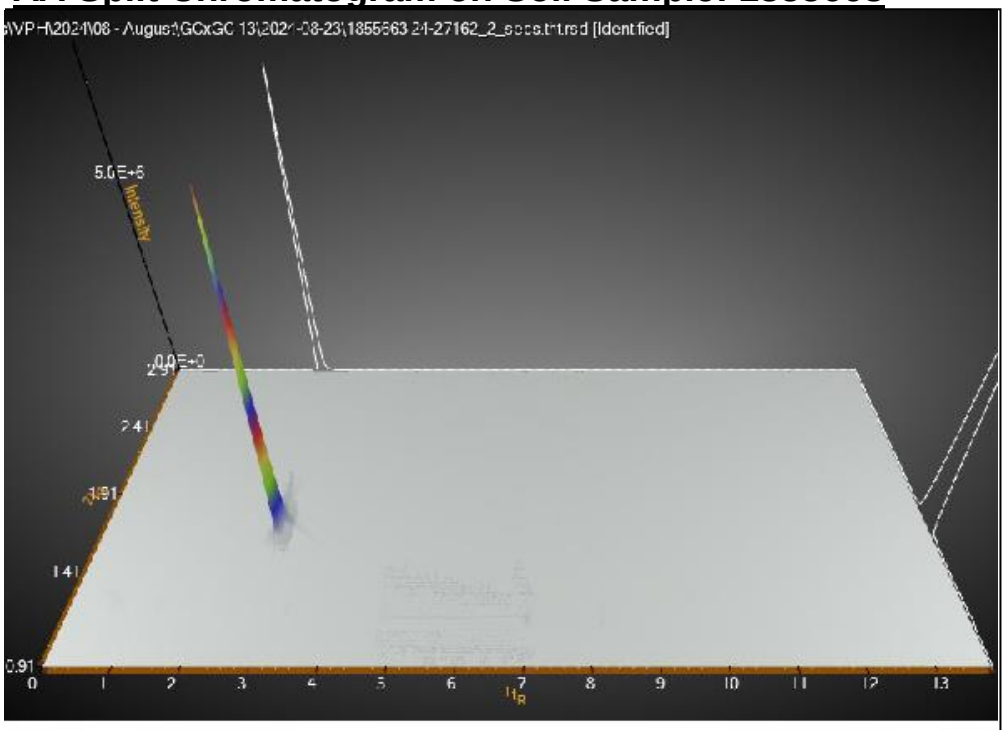


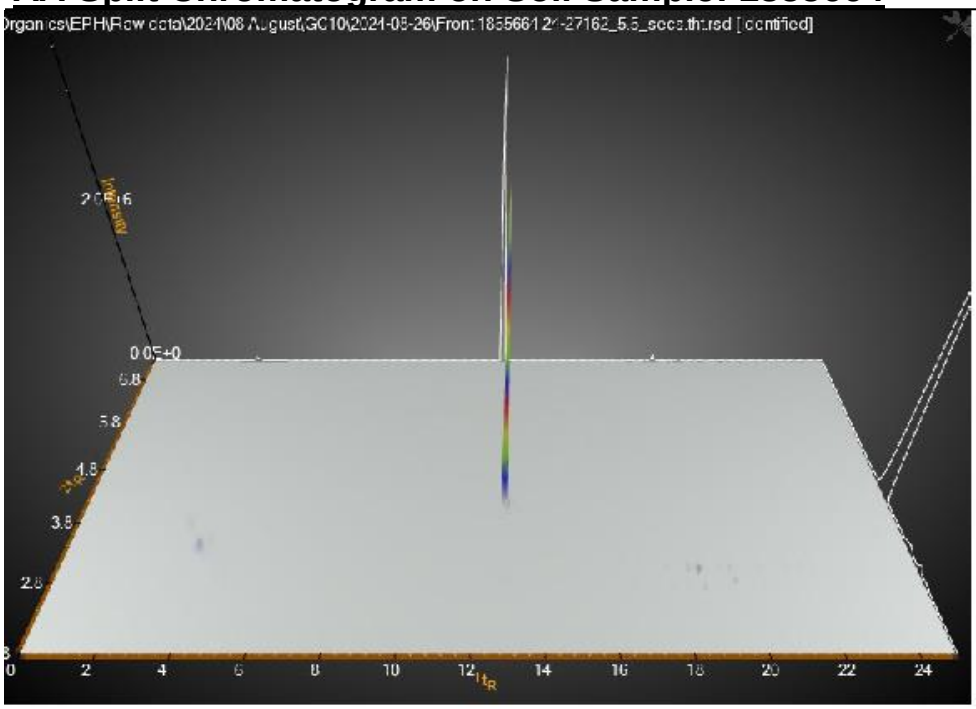
AA-Split Chromatogram on Soil Sample: 1855663



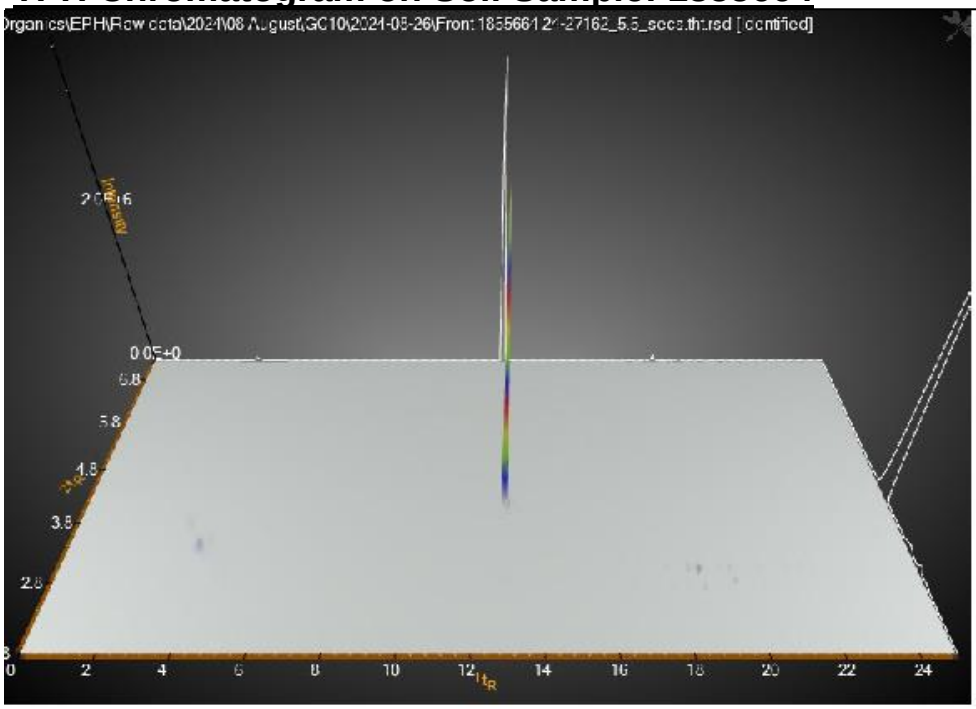
AA-Split Chromatogram on Soil Sample: 1855663



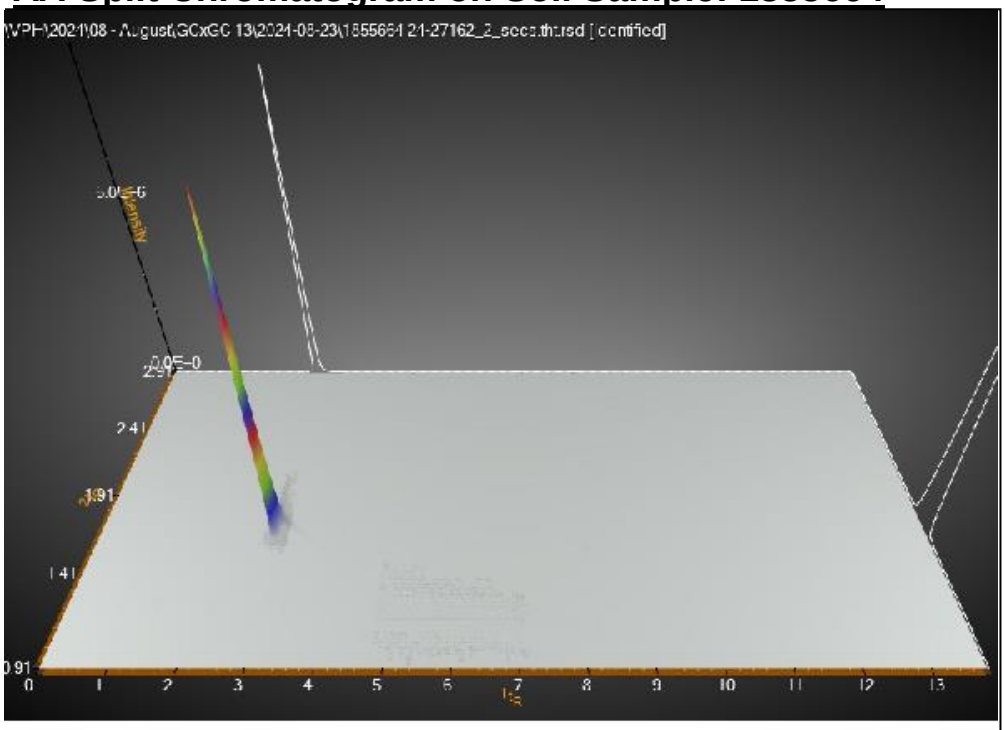
AA-Split Chromatogram on Soil Sample: 1855664



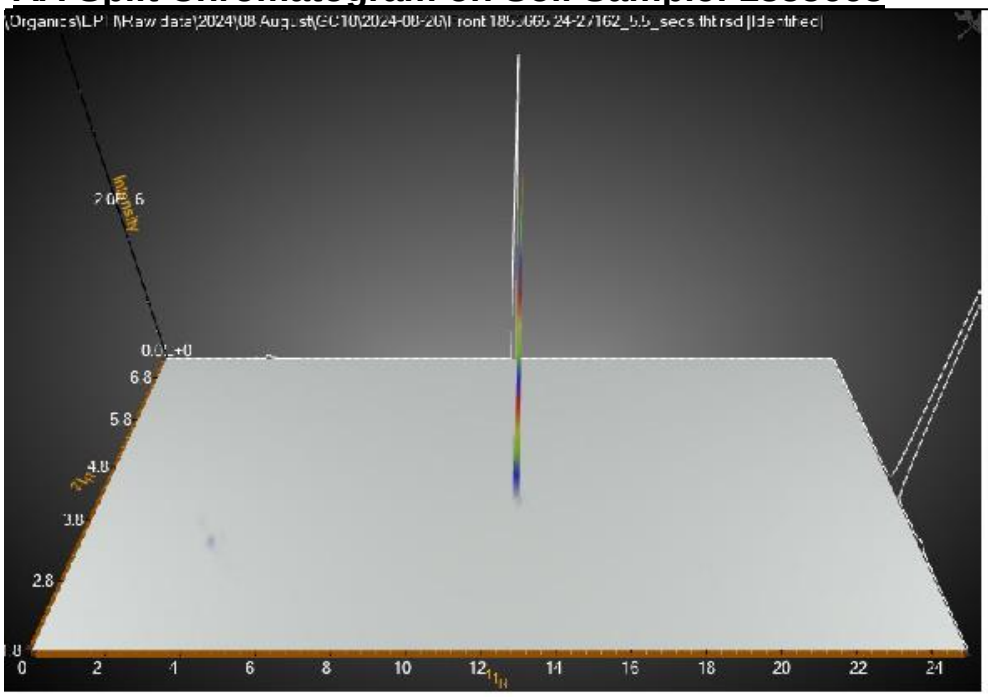
TPH Chromatogram on Soil Sample: 1855664



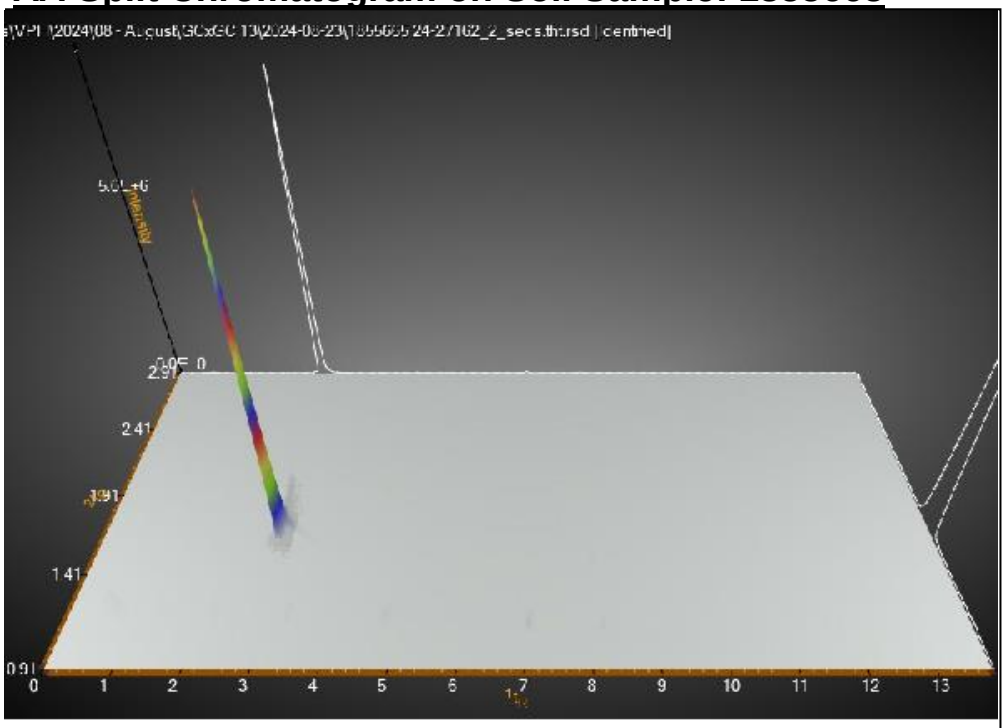
AA-Split Chromatogram on Soil Sample: 1855664



AA-Split Chromatogram on Soil Sample: 1855665



AA-Split Chromatogram on Soil Sample: 1855665



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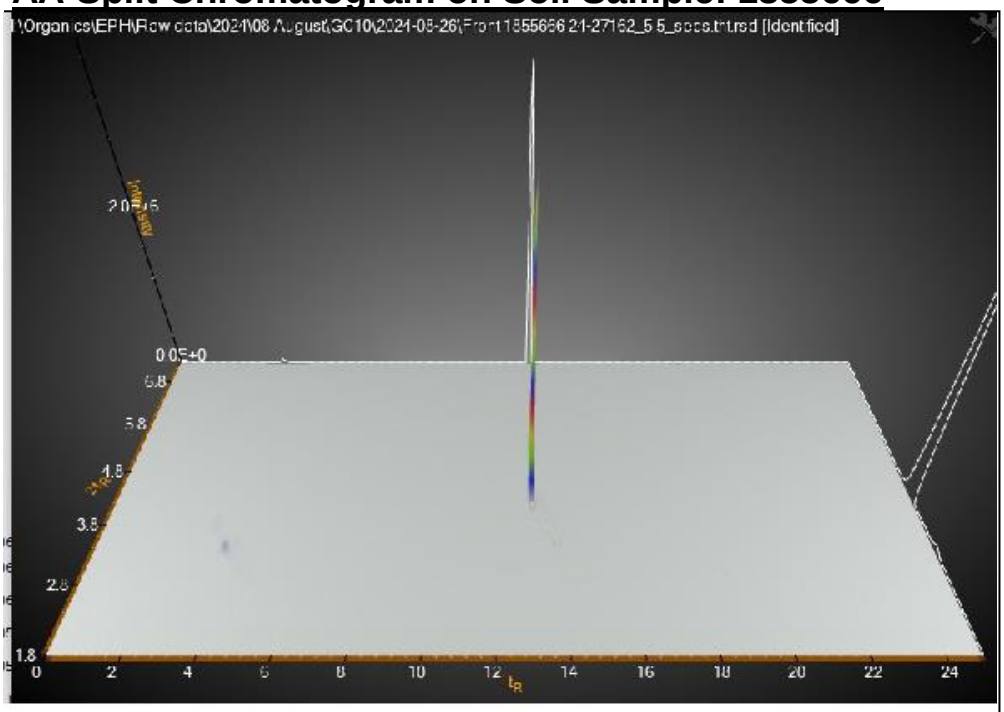
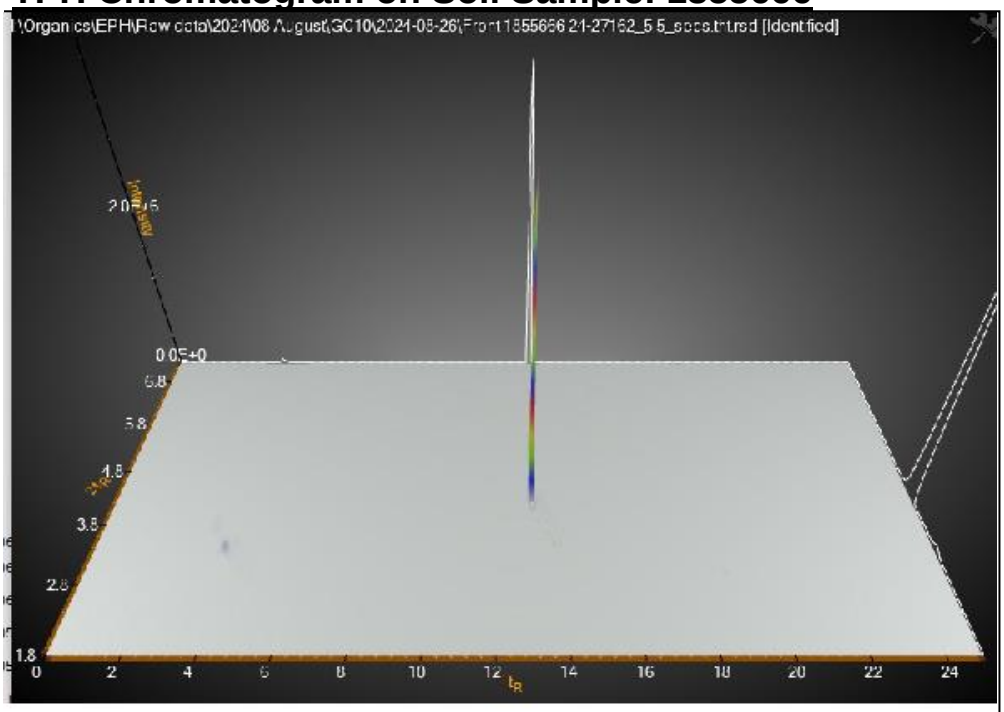
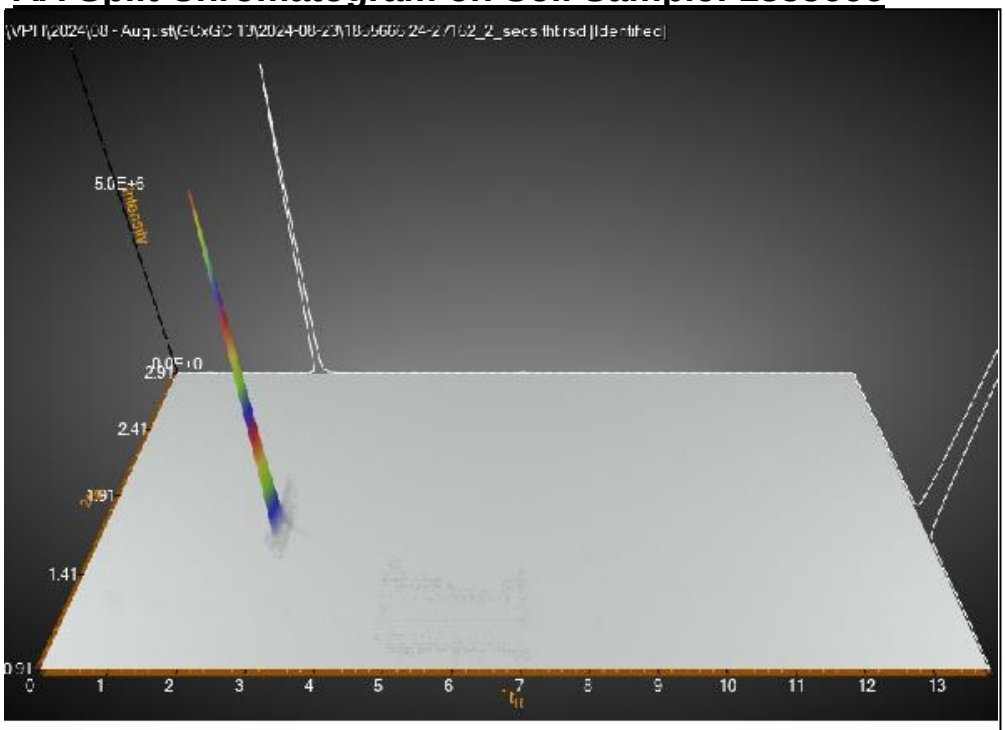


TPH Chromatogram on Soil Sample: 1855666



AA-Split Chromatogram on Soil Sample: 1855666



Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 24-27162
Chemtest Sample ID.: 1855664
Client Sample Ref.:
Sample Location: WS107
Client Sample ID.:
Top Depth (m): 0.10
Bottom Depth (m): 0.20
Date Sampled: 14-Aug-2024
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content (Sub Contracted)	%				15				
Silt content (Sub Contracted)	%				47				
Sand content (Sub Contracted)	%				38				
Soil texture class		See Attached Chart			Sandy Silt Loam	YES			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			9.4	YES	YES	YES	YES
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm (Sub Contracted)		0-30			6.4	YES			
>20mm (Sub Contracted)		0-10			< 100	YES			
>50mm (Sub Contracted)		0			< 100	YES			
Soil pH value		5.5-8.5			8.9	NO	NO	YES	YES
Carbonate (Calcareous only)	%				1.8				YES
Electrical Conductivity	µS/cm	If >3300 do ESP			I/S	NO			
Available Nutrient Content									
Nitrogen %		>0.15			0.47	YES	YES		YES
Extractable phosphorus	mg/l	16-140			I/S	NO	NO	NO	NO
Extractable potassium	mg/l	121-1500			I/S	NO	NO		NO
Extractable magnesium	mg/l	51-600			I/S	NO	NO		NO
Carbon : Nitrogen Ratio		<20:1			11.7/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			I/S				
Available Calcium	mg/l				I/S				
Available Sodium	mg/l				I/S				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	60	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	18	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	16	YES			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

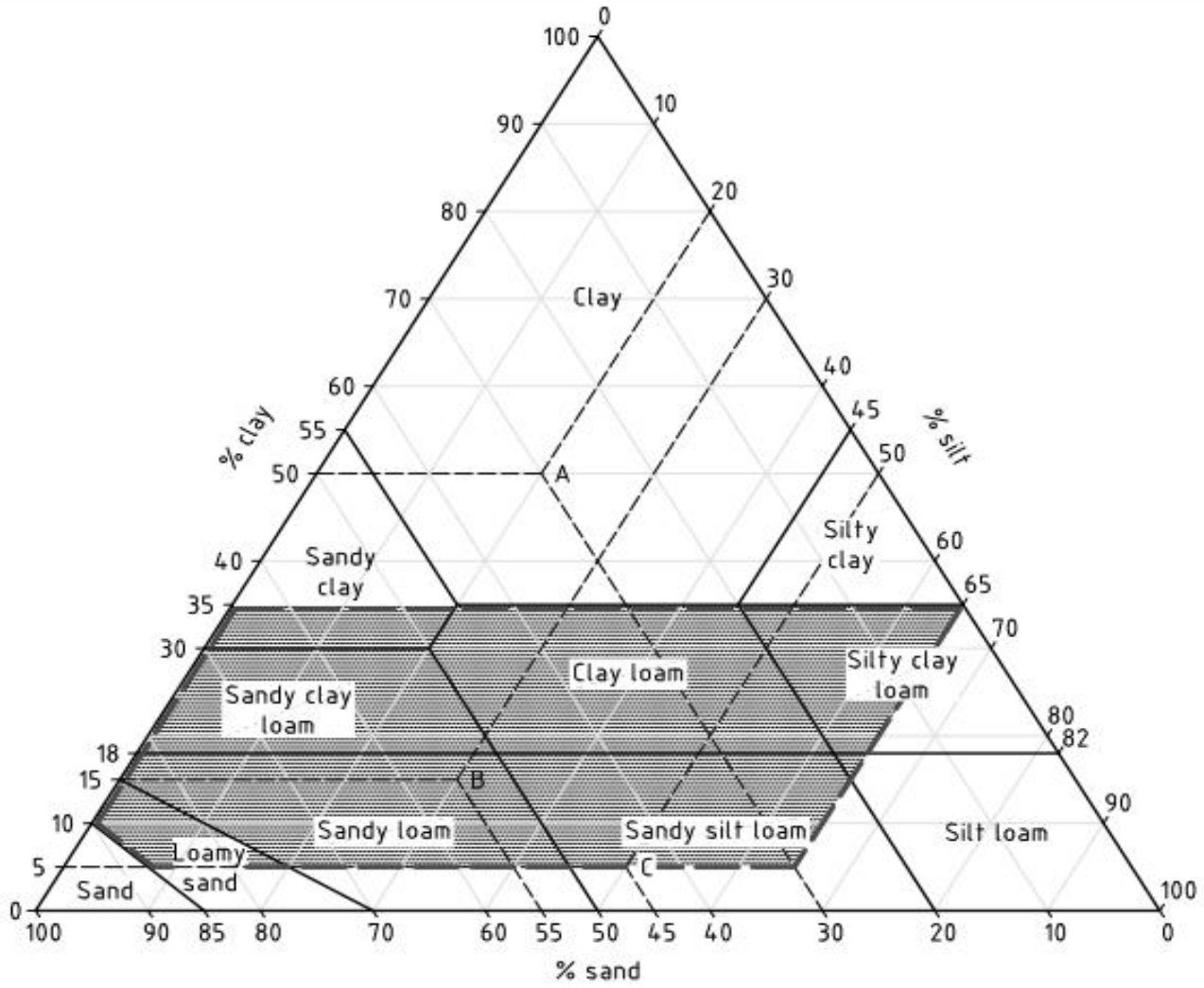
Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 24-27162
Chemtest Sample ID.: 1855666
Client Sample Ref.:
Sample Location: TP104
Client Sample ID.:
Top Depth (m): 0.10
Bottom Depth (m): 0.20
Date Sampled: 14-Aug-2024
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content (Sub Contracted)	%				23				
Silt content (Sub Contracted)	%				52				
Sand content (Sub Contracted)	%				26				
Soil texture class		See Attached Chart			Clay Loam	YES			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			4.4	NO	NO	YES	NO
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm (Sub Contracted)		0-30			15	YES			
>20mm (Sub Contracted)		0-10			8.9	YES			
>50mm (Sub Contracted)		0			< 0.10	YES			
Soil pH value		5.5-8.5			8.9	NO	NO	YES	YES
Carbonate (Calcareous only)	%				2.4				YES
Electrical Conductivity	µS/cm	If >3300 do ESP			4600	NO			
Available Nutrient Content									
Nitrogen %		>0.15			0.14	NO	NO		NO
Extractable phosphorus	mg/l	16-140			12	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			23	NO	NO		NO
Extractable magnesium	mg/l	51-600			75	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			18.4/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			2.1				
Available Calcium	mg/l				400				
Available Sodium	mg/l				52				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	40	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	12	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	15	YES			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

Topsoil:
Texture Classification Chart



Key

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- *Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.*
- *Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.*
- *Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.*

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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:
1855661			WS103	14-Aug-2024	C	Plastic Tub 500g
1855665			WS109	14-Aug-2024	C	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1830	Organonitrogen (O-N) Pesticides in Waters by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Solvent extraction / GCMS detection	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
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 <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2260	Carbonate	Carbonate	Titration	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2400	Cations	Cations	ICP-MS	
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS	
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS	
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water

GW - Ground Water

LE - Land Leachate

Report Information

NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	24-30803-2		
Initial Date of Issue:	04-Oct-2024	**Date of Re-Issue:**	04-Oct-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-30803-1 in its entirety		
Client	HSP Consulting Engineers Limited		
Client Address:	Lawrence House Meadowbank Way Eastwood Nottinghamshire NG16 3SB		
Contact(s):	Harry Evans Matthew Kent		
Project	C4103 Coleg Sir Gar		
Quotation No.:		**Date Received:**	24-Sep-2024
Order No.:		**Date Instructed:**	24-Sep-2024
No. of Samples:	1		
Turnaround (Wkdays):	9	**Results Due:**	04-Oct-2024
Date Approved:	01-Oct-2024	**Subcon Results Due:**	04-Oct-2024

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: C4103 Coleg Sir Gar

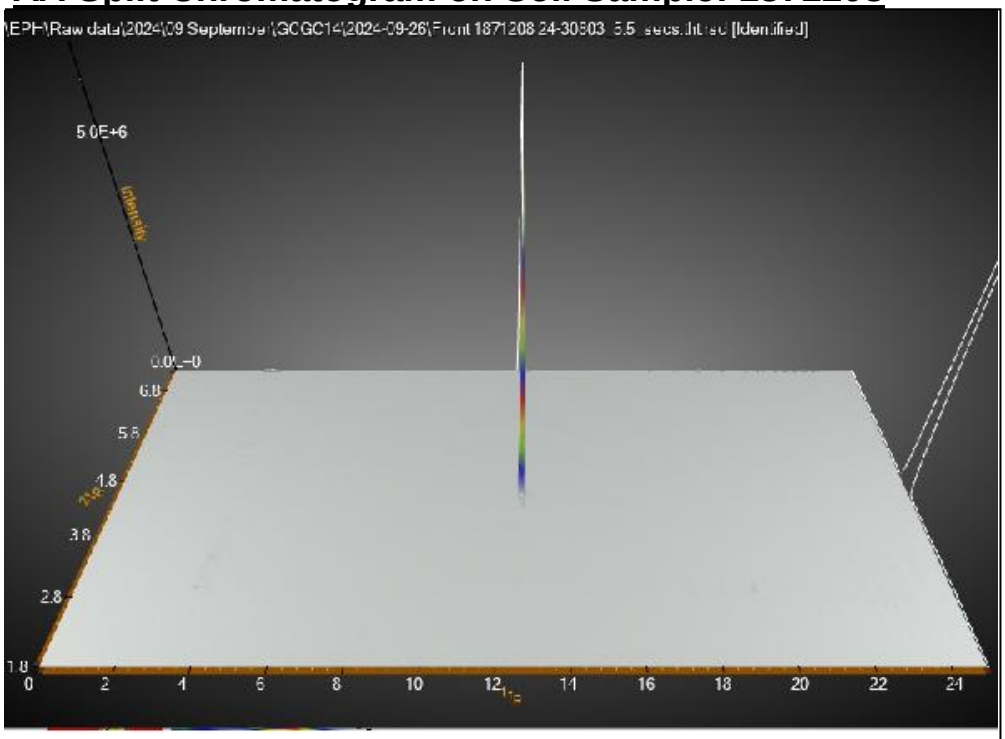
Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-30803
Quotation No.:				**Chemtest Sample ID.:**		1871208
				Sample Location:		HDP2
				Sample Type:		SOIL
				Top Depth (m):		0.10
				Bottom Depth (m):		0.20
				Date Sampled:		23-Sep-2024
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture		N	2030	%	0.020	30
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones, Roots and leafs
Soil Texture		N	2040		N/A	Loam
Chromatogram EPH	EH_2D_Total_#1	N			N/A	See Attached
Chromatogram VPH	HS_2D_Total	N			N/A	See Attached
pH at 20C		M	2010		4.0	6.0
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.40
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.080
Cyanide (Total)		M	2300	mg/kg	0.50	0.60
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.2
Sulphate (Total)		U	2430	mg/kg	100	3000
Arsenic		M	2455	mg/kg	0.5	13
Cadmium		M	2455	mg/kg	0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	23
Antimony		N	2455	mg/kg	2.0	< 2.0
Copper		M	2455	mg/kg	0.50	13
Mercury		M	2455	mg/kg	0.05	0.11
Nickel		M	2455	mg/kg	0.50	15
Lead		M	2455	mg/kg	0.50	41
Selenium		M	2455	mg/kg	0.25	0.87
Vanadium		U	2455	mg/kg	0.5	33
Zinc		M	2455	mg/kg	0.50	70
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.4
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	27
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	14
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	30
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	44
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05

Results - Soil

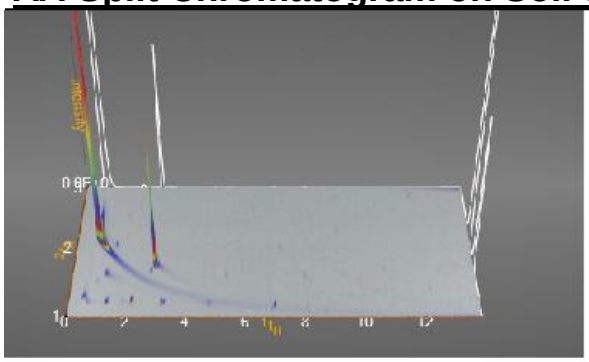
Project: C4103 Coleg Sir Gar

Client: HSP Consulting Engineers Limited				**Chemtest Job No.:**		24-30803
Quotation No.:				**Chemtest Sample ID.:**		1871208
				Sample Location:		HDP2
				Sample Type:		SOIL
				Top Depth (m):		0.10
				Bottom Depth (m):		0.20
				Date Sampled:		23-Sep-2024
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	7.1
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	21
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	9.8
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	31
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	40
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	75
LOI		M	2610	%	0.10	11
Organic Matter		M	2625	%	0.40	6.0
Benzene		M	2760	µg/kg	1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10

AA-Split Chromatogram on Soil Sample: 1871208



AA-Split Chromatogram on Soil Sample: 1871208



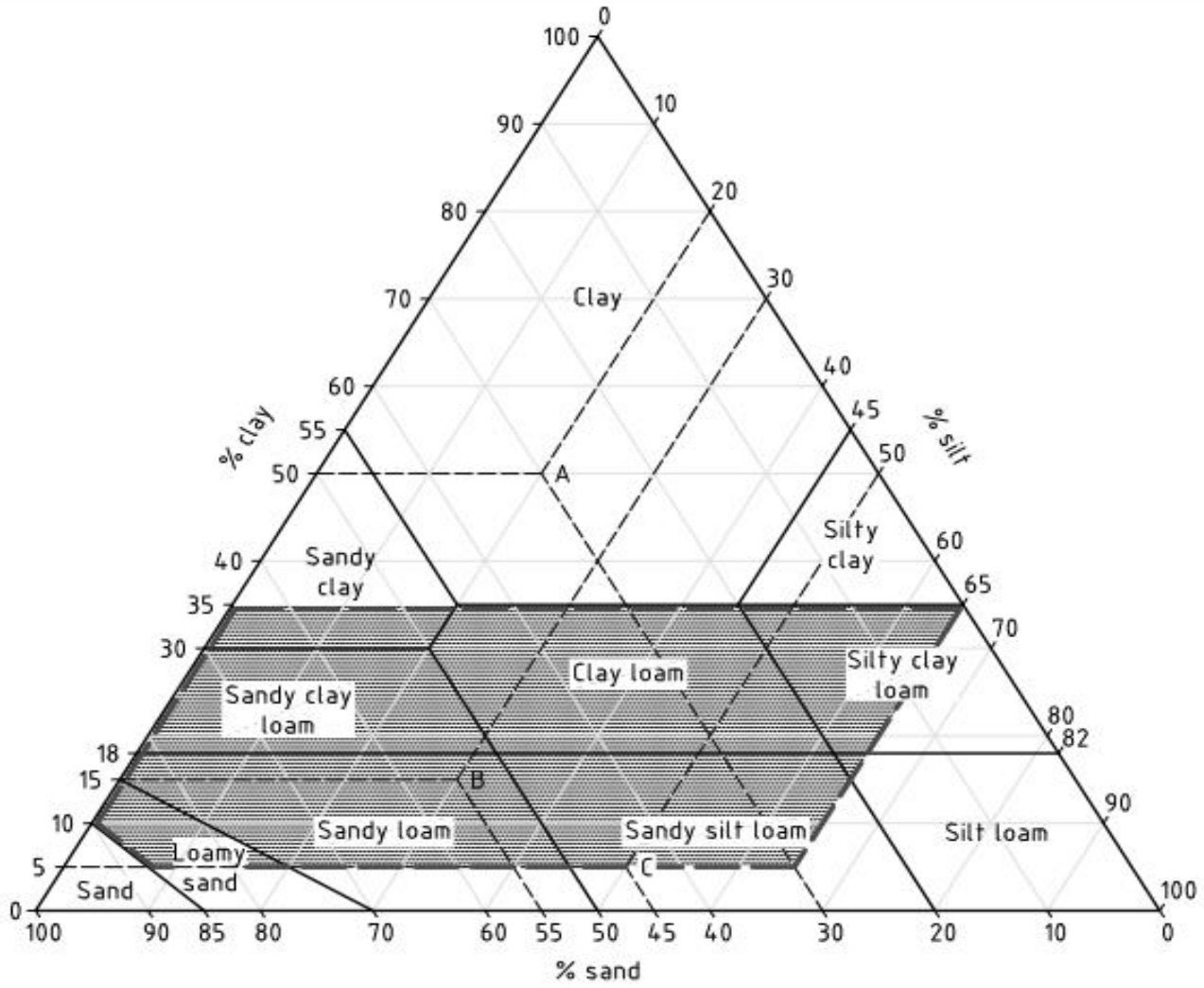
Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 24-30803
Chemtest Sample ID.: 1871208
Client Sample Ref.:
Sample Location: HDP2
Client Sample ID.:
Top Depth (m): 0.10
Bottom Depth (m): 0.20
Date Sampled: 23-Sep-2024
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content (Sub Contracted)	%				17				
Silt content (Sub Contracted)	%				53				
Sand content (Sub Contracted)	%				31				
Soil texture class		See Attached Chart			Sandy Silt Loam	YES			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			6.1	YES	YES	YES	YES
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm (Sub Contracted)		0-30			16	YES			
>20mm (Sub Contracted)		0-10			< 0.10	YES			
>50mm (Sub Contracted)		0			< 0.10	YES			
Soil pH value		5.5-8.5			6.0	YES	NO	YES	NO
Carbonate (Calcareous only)	%				0.60				NO
Electrical Conductivity	µS/cm	If >3300 do ESP			1900	YES			
Available Nutrient Content									
Nitrogen %		>0.15			0.62	YES	YES		YES
Extractable phosphorus	mg/l	16-140			3.7	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			74	NO	NO		NO
Extractable magnesium	mg/l	51-600			64	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			5.7/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			0.62				
Available Calcium	mg/l				1900				
Available Sodium	mg/l				15				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	180	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	13	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	13	YES			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

Topsoil:
Texture Classification Chart



Key

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- *Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.*
- *Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.*
- *Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.*

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
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 <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2260	Carbonate	Carbonate	Titration	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2400	Cations	Cations	ICP-MS	
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water

GW - Ground Water

LE - Land Leachate

Report Information

NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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

Appendix V

GEOLABS Limited
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HSP Consulting
Lawrence House
6 Meadowbank Way
Eastwood
Nottingham
NG16 3SB

18 September 2024
Report No : GEO/41089/01

For the attention of Mr M Kent

		Date samples received	21/08/2024
Our ref	**GEO / 41089**	Date written instructions received	21/08/2024
Your ref	**C4103**	Date testing commenced	22/08/2024
		Date of sample disposal	**16/10/2024**

Project **COLEG SIR GAR**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	22	Water Content
~	20	Liquid & Plastic Limits
2	4	Particle Density
3	~	Geochemical Test Summary
~	13	BRE SD1 Suite D - Brownfield + pyrite
4	17	Particle Size Distribution
5	12	Water Content / Dry Density Relationship
6	12	California Bearing Ratio
7	36	Shear Strength by Hand Vane

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

S Burke
Senior Technician

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BS EN ISO 17892-12 : 2018+A2:2022

SUMMARY OF LIQUID AND PLASTIC LIMIT TESTS

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 +A1:2022 %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Percentage Passing 425µm %	Atterberg Classification	Test Type	Sample Condition
SA201	0.80-1.10		LB	Brown slightly sandy gravelly clayey SILT with rare cobbles and roots.	13.5	39	28	11	59	MI	2	3
SA202	0.50-0.90		LB	Yellowish brown sandy gravelly silty CLAY with rare rootlets and cobbles.	10.6	35	20	15	69	CL	2	3
SA203	0.70-1.00		LB	Dark grey slightly sandy slightly gravelly silty CLAY.	20.1	33	19	14	92	CL	2	1
SA204	0.60-1.00		LB	Grey mottled brown slightly sandy silty CLAY.	18.6	28	16	12	96	CL	2	3
SA205	0.40-0.60		LB	Dark brown sandy silty clayey GRAVEL with occasional cobbles and rare roots.	11.1	43	25	18	20	CI	2	3
SA206	0.40-0.70		LB	Light brown mottled grey fine sandy gravelly silty CLAY.	21.5	49	27	22	35	CI	2	3
SA206	0.90-1.20		LB	Dark grey clayey silty sandy GRAVEL with some cobbles and bitumen pieces.	8.9	39	22	17	21	CI	2	3
SA207	1.00		LB	Dark brown slightly sandy slightly clayey silty GRAVEL and COBBLES.	5.5	46	26	20	12	CI	2	3
TP104	1.00-1.50		LB	Dark brown sandy silty gravelly CLAY with rare cobbles.	12.4	44	23	21	44	CI	2	3
TP104	2.10-2.50		LB	Dark brown mottled yellow sandy gravelly silty CLAY.	15.3	34	20	14	30	CL	2	3
TP105	0.70-1.10		LB	Yellowish brown slightly sandy slightly gravelly silty CLAY.	20.2	44	25	19	88	CI	2	3
TP105	2.20-2.50		LB	Dark brown sandy silty gravelly CLAY with rare cobbles.	14.1	33	20	13	37	CL	2	3
TP106	0.70-1.00		LB	Dark brown mottled grey sandy gravelly silty CLAY.	15.6	49	23	26	67	CI	2	3
TP106	2.00-2.50		LB	Dark grey mottled brown gravelly slightly sandy silty CLAY.	11.8	43	23	20	51	CI	2	3
WS101	1.50-1.80		D	Brownish grey slightly gravelly sandy silty CLAY with rare roots.	15.6	24	15	9	99	CL	2	1

Test Type: 2 - 4 point 80g / 30° fall cone method.

Sample condition:
1 - As Received
2 - Air Dried
3 - Washed & Air Dried

Checked and Approved by:

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS®
UKAS TESTING 1982

BS EN ISO 17892-12 : 2018+A2:2022

SUMMARY OF LIQUID AND PLASTIC LIMIT TESTS

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 +A1:2022 %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Percentage Passing 425µm %	Atterberg Classification	Test Type	Sample Condition
WS102	2.40-2.70		D	Dark brown slightly clayey silty very sandy GRAVEL.	7.0	~	~	~	~	~	~	~
WS104	2.50-2.80		D	Dark brown slightly clayey silty sandy GRAVEL.	8.5	49	27	22	9	CI	2	3
WS105	1.00-1.50		D	Brownish grey slightly gravelly sandy silty CLAY.	14.3	31	21	10	76	CL	2	3
WS105	2.00-2.30		D	Brown slightly gravelly sandy silty CLAY.	18.2	26	18	8	88	CL	2	1
WS106	2.50-3.00		D	Dark grey sandy gravelly silty CLAY.	9.1	~	~	~	~	~	~	~
WS107	1.00-1.50		D	Greyish brown slightly gravelly slightly sandy silty CLAY with rare roots.	25.5	42	25	17	98	CI	2	1
WS108	1.30-1.60		D	Brownish grey slightly gravelly slightly sandy silty CLAY with rare roots.	15.6	29	18	11	98	CL	2	1

Test Type: 2 - 4 point 80g / 30° fall cone method.

Sample condition: 1 - As Received
2 - Air Dried
3 - Washed & Air Dried

Checked and Approved by:

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS®
UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Location	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
TP104	1.00-1.50		LB	Dark brown sandy silty gravelly CLAY with rare cobbles.	2.72	2
TP104	2.10-2.50		LB	Dark brown mottled yellow sandy gravelly silty CLAY.	2.73	2
TP106	0.70-1.00		LB	Dark brown mottled grey sandy gravelly silty CLAY.	2.66	2
TP106	2.00-2.50		LB	Dark grey mottled brown gravelly slightly sandy silty CLAY.	2.73	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO4 %	Water Soluble Sulphate as SO4 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
SA201	0.80-1.10		LB	7.8	0.031	< 0.010	0.010	< 0.010	< 0.010	< 0.010	-	-	-
SA202	0.50-0.90		LB	8.0	0.035	< 0.010	0.010	< 0.010	< 0.010	< 0.010	-	-	-
SA205	0.40-0.60		LB	6.9	0.039	< 0.010	0.020	< 0.010	< 0.010	< 0.010	-	-	-
SA206	0.90-1.20		LB	8.1	0.18	0.47	0.64	< 0.010	< 0.010	0.019	-	-	-
TP104	1.00-1.50		LB	7.7	0.012	< 0.010	0.010	< 0.010	< 0.010	< 0.010	-	-	-
TP104	2.10-2.50		LB	7.2	0.028	< 0.010	0.020	< 0.010	< 0.010	< 0.010	-	-	-
TP105	0.70-1.10		LB	7.2	< 0.010	< 0.010	0.010	< 0.010	< 0.010	< 0.010	-	-	-
TP105	2.20-2.50		LB	7.3	0.020	< 0.010	0.010	< 0.010	< 0.010	< 0.010	-	-	-
TP106	0.70-1.00		LB	7.1	0.10	0.21	0.040	0.014	< 0.010	0.018	-	-	-
TP106	2.00-2.50		LB	7.3	0.025	0.019	0.040	< 0.010	< 0.010	< 0.010	-	-	-
WS102	2.40-2.70		D	7.9	0.047	< 0.010	0.020	< 0.010	< 0.010	< 0.010	-	-	-
WS105	2.00-2.30		D	7.1	0.016	< 0.010	0.020	< 0.010	< 0.010	< 0.010	-	-	-
WS108	0.70-1.00		D	7.4	< 0.010	< 0.010	0.020	< 0.010	< 0.010	< 0.010	-	-	-

Tested by Eurofins Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/09/2024

Project Number:

GEO / 41089

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COLEG SIR GAR
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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

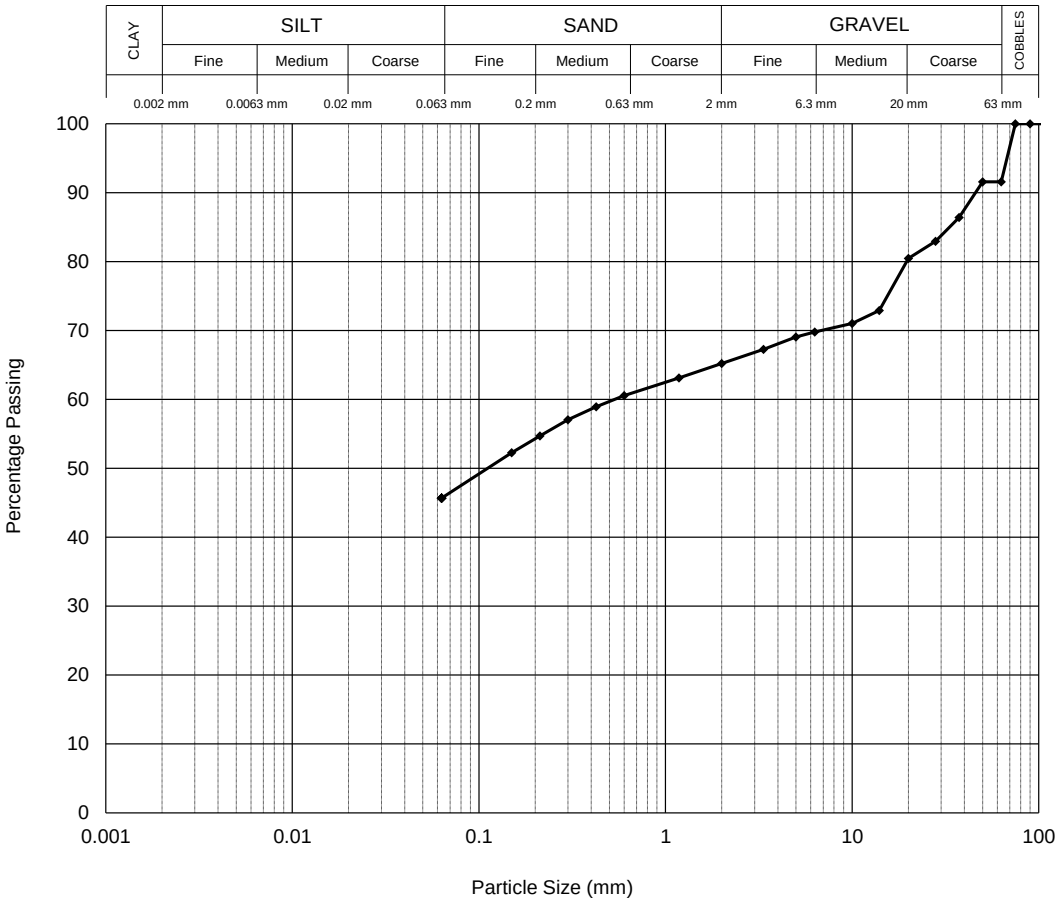
Location	SA201
Sample Depth	0.80-1.10 m
Sample Type	LB

Description

Brown slightly sandy gravelly clayey SILT with rare cobbles and roots.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	92
50.0 mm	92
37.5 mm	86
28.0 mm	83
20.0 mm	80
14.0 mm	73
10.0 mm	71
6.30 mm	70
5.00 mm	69
3.35 mm	67
2.00 mm	65
1.18 mm	63
600 µm	61
425 µm	59
300 µm	57
212 µm	55
150 µm	52
63 µm	46



Particle Proportions	
Cobbles	8.4
Gravel	26.4
Sand	19.5
Silt & Clay	45.7

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

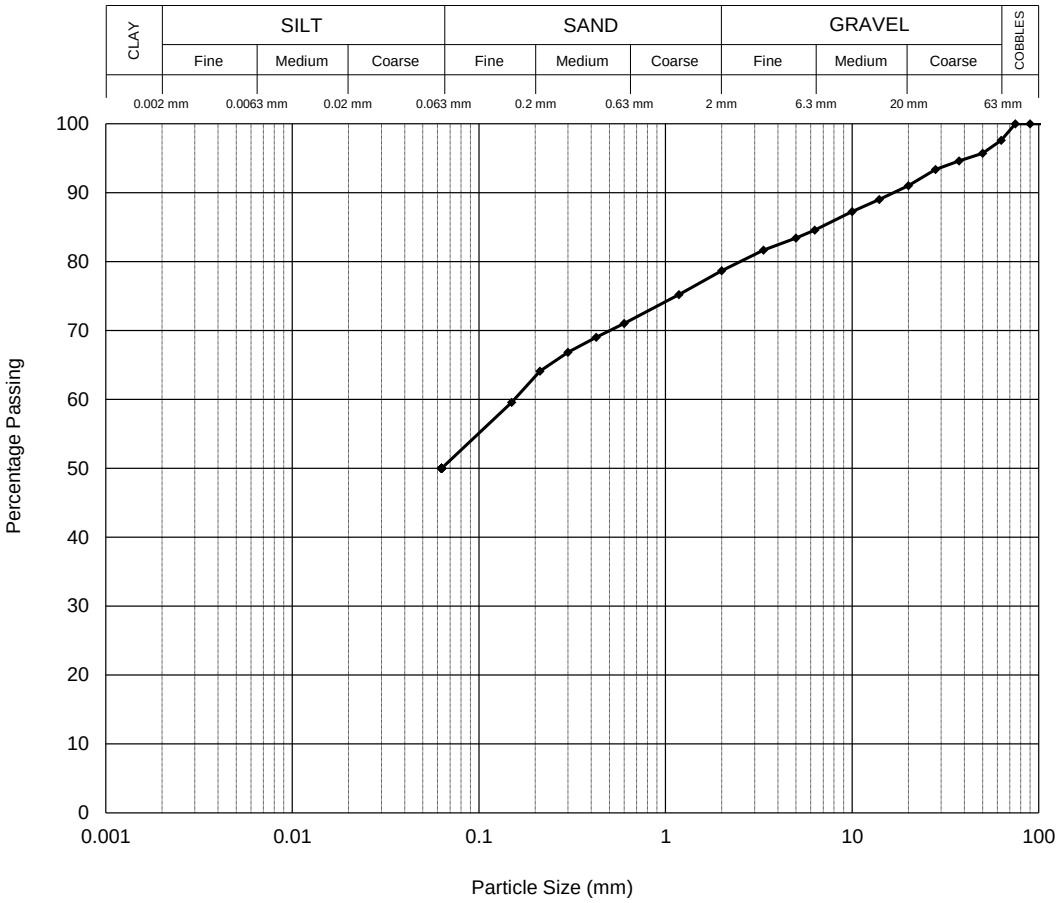
Location	SA202
Sample Depth	0.50-0.90 m
Sample Type	LB

Description

Yellowish brown sandy gravelly silty CLAY with rare rootlets and cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	98
50.0 mm	96
37.5 mm	95
28.0 mm	93
20.0 mm	91
14.0 mm	89
10.0 mm	87
6.30 mm	85
5.00 mm	83
3.35 mm	82
2.00 mm	79
1.18 mm	75
600 µm	71
425 µm	69
300 µm	67
212 µm	64
150 µm	60
63 µm	50



Particle Proportions	
Cobbles	2.4
Gravel	19.0
Sand	28.7
Silt & Clay	49.9

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

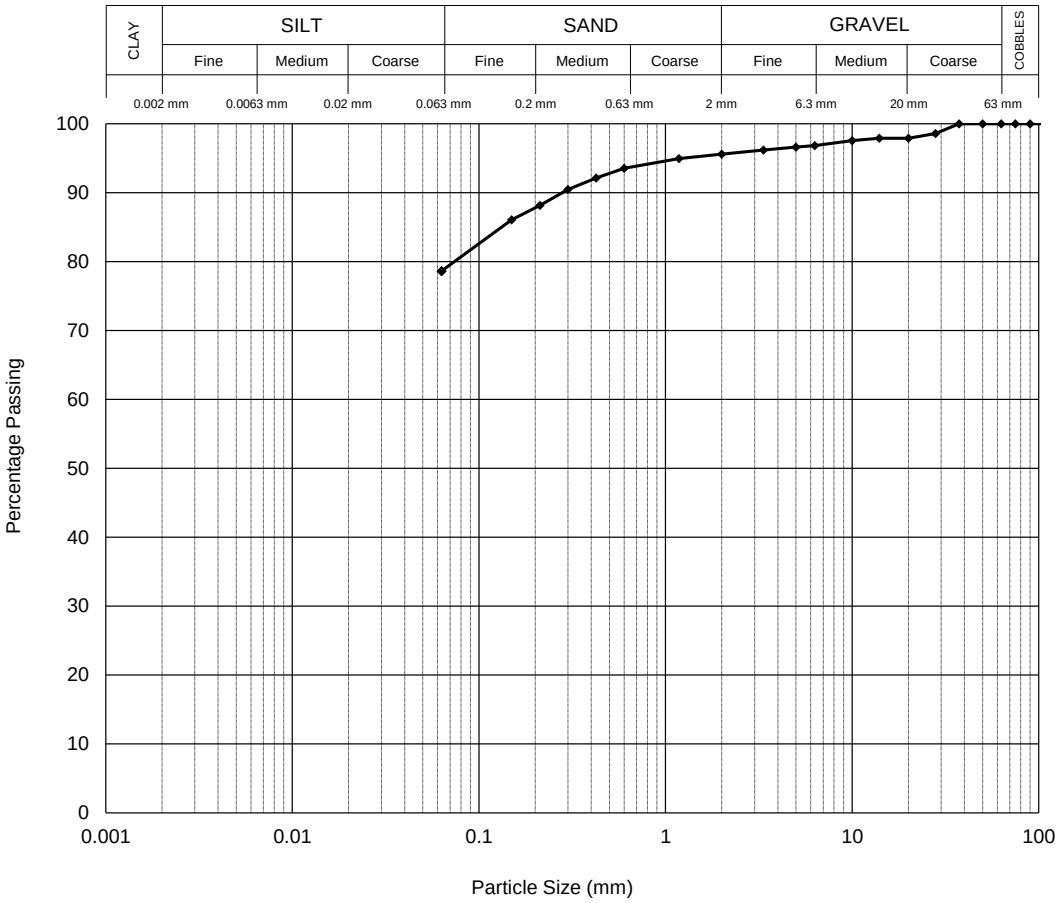
Location	SA203
Sample Depth	0.70-1.00 m
Sample Type	LB

Description

Dark grey slightly sandy slightly gravelly silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	99
20.0 mm	98
14.0 mm	98
10.0 mm	98
6.30 mm	97
5.00 mm	97
3.35 mm	96
2.00 mm	96
1.18 mm	95
600 µm	94
425 µm	92
300 µm	90
212 µm	88
150 µm	86
63 µm	79



Particle Proportions	
Cobbles	0.0
Gravel	4.4
Sand	16.9
Silt & Clay	78.7

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

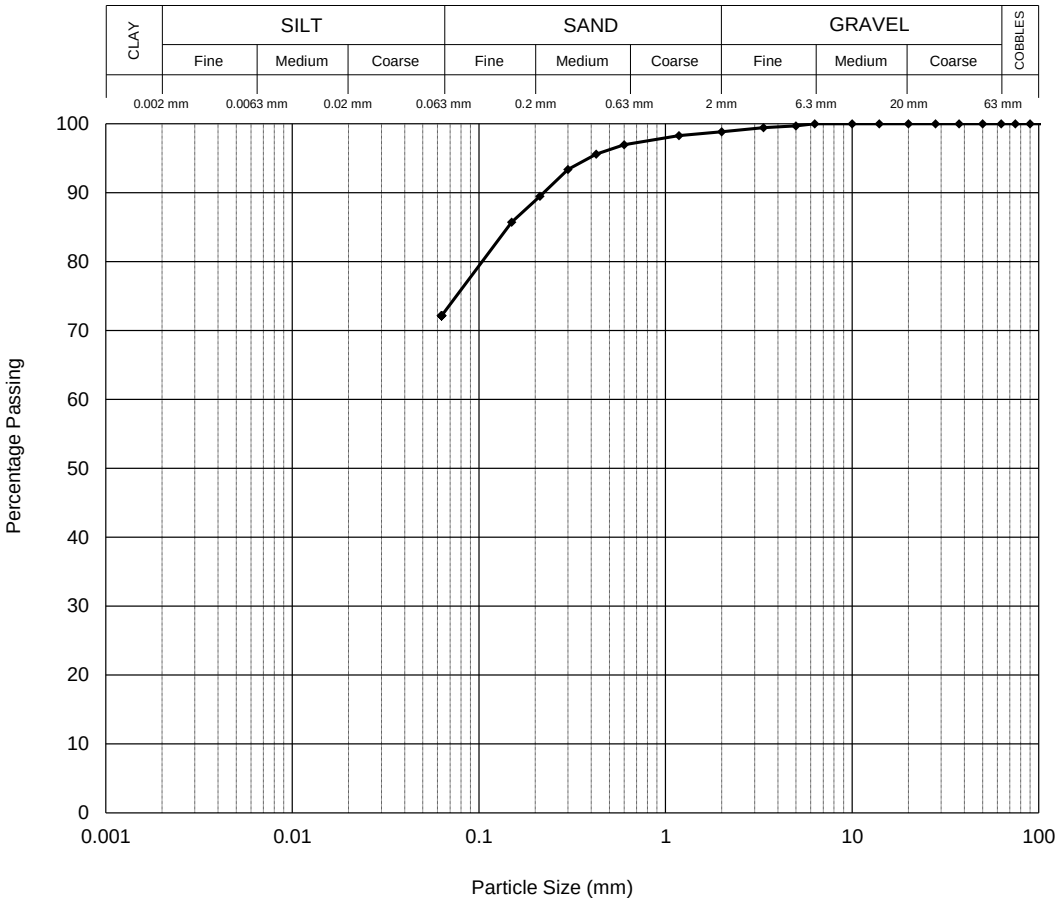
Location	SA204
Sample Depth	0.60-1.00 m
Sample Type	LB

Description

Grey mottled brown slightly sandy silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	97
425 µm	96
300 µm	93
212 µm	89
150 µm	86
63 µm	72



Particle Proportions	
Cobbles	0.0
Gravel	1.2
Sand	26.7
Silt & Clay	72.1

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

Location	SA205
Sample Depth	0.40-0.60 m
Sample Type	LB

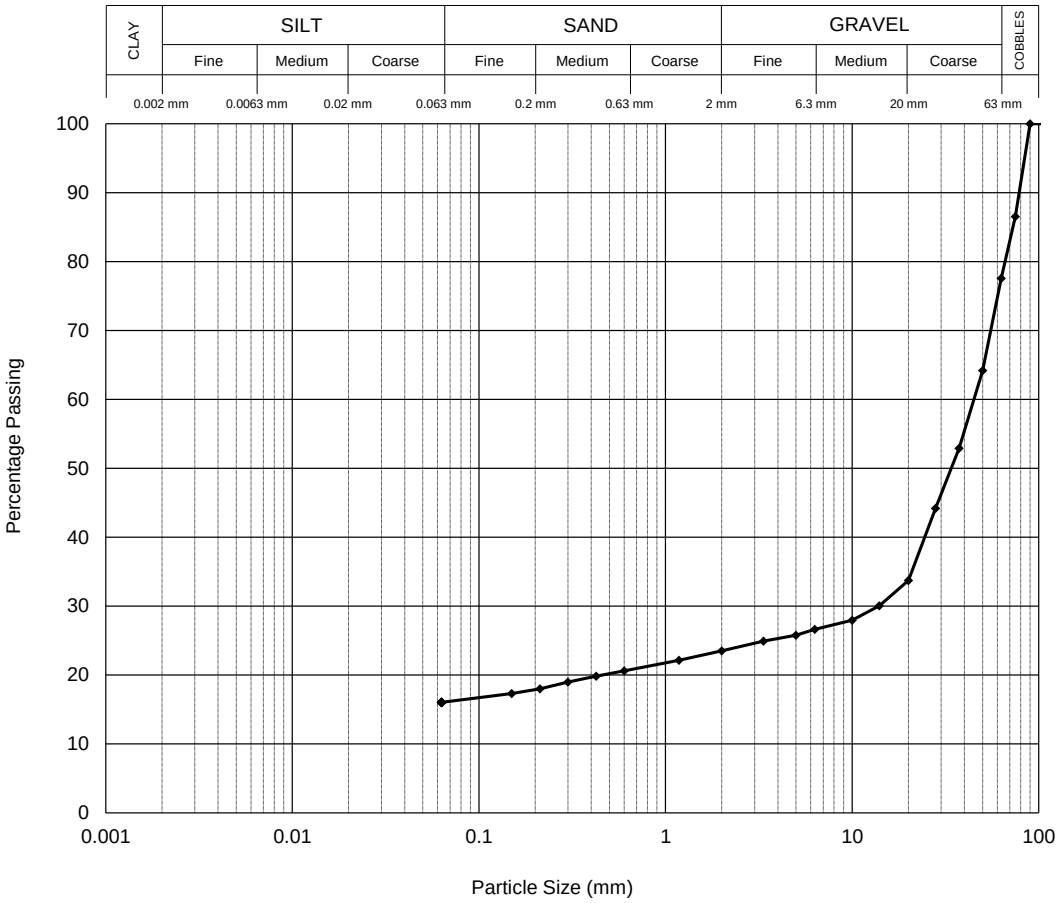
Description

Dark brown sandy silty clayey GRAVEL with occasional cobbles and rare roots.

Remarks: Insuffcient sample supplied to comply with BS EN ISO 17892-4 : 2016 minimum mass requirements

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	87
63.0 mm	78
50.0 mm	64
37.5 mm	53
28.0 mm	44
20.0 mm	34
14.0 mm	30
10.0 mm	28
6.30 mm	27
5.00 mm	26
3.35 mm	25
2.00 mm	24
1.18 mm	22
600 µm	21
425 µm	20
300 µm	19
212 µm	18
150 µm	17
63 µm	16



Particle Proportions	
Cobbles	22.4
Gravel	54.1
Sand	7.5
Silt & Clay	16.0

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

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COLEG SIR GAR
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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

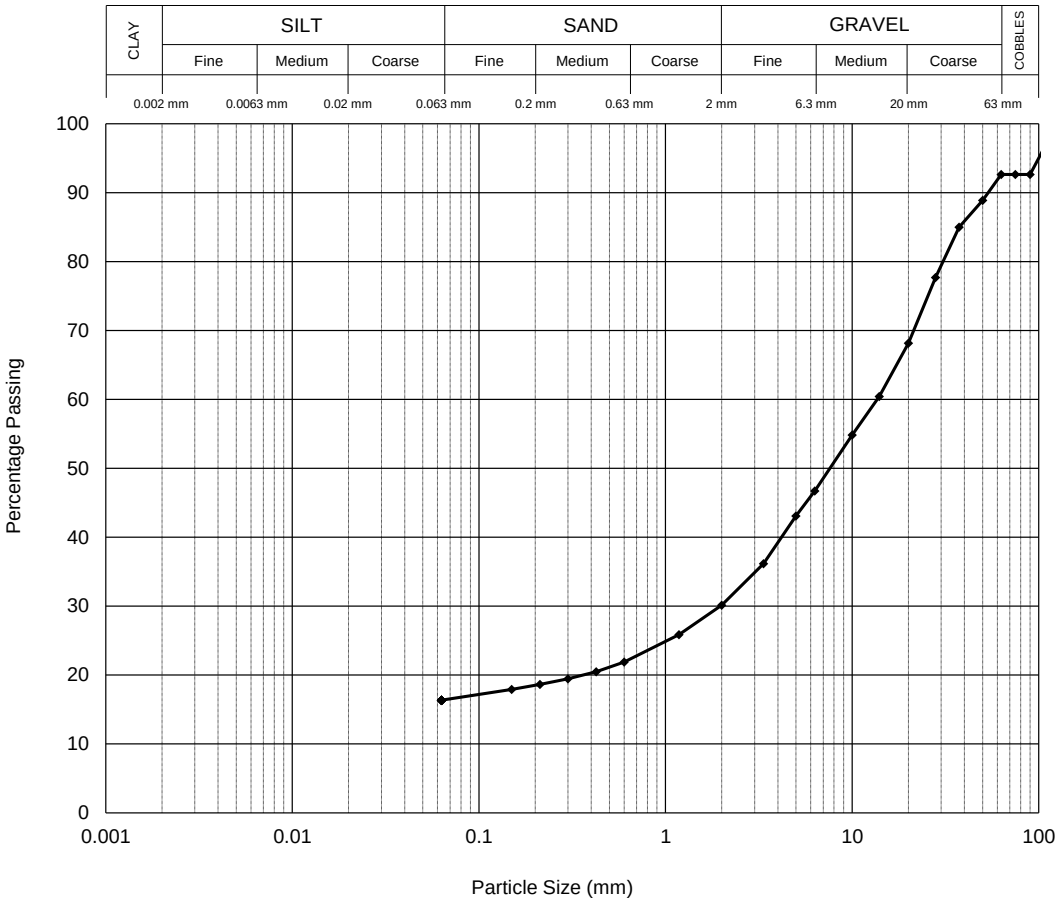
Location	SA206
Sample Depth	0.90-1.20 m
Sample Type	LB

Description

Dark grey clayey silty sandy GRAVEL with some cobbles and bitumen pieces.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	93
75.0 mm	93
63.0 mm	93
50.0 mm	89
37.5 mm	85
28.0 mm	78
20.0 mm	68
14.0 mm	60
10.0 mm	55
6.30 mm	47
5.00 mm	43
3.35 mm	36
2.00 mm	30
1.18 mm	26
600 µm	22
425 µm	20
300 µm	19
212 µm	19
150 µm	18
63 µm	16



Particle Proportions	
Cobbles	7.4
Gravel	62.5
Sand	13.8
Silt & Clay	16.3

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

Location	SA207
Sample Depth	1.00 m
Sample Type	LB

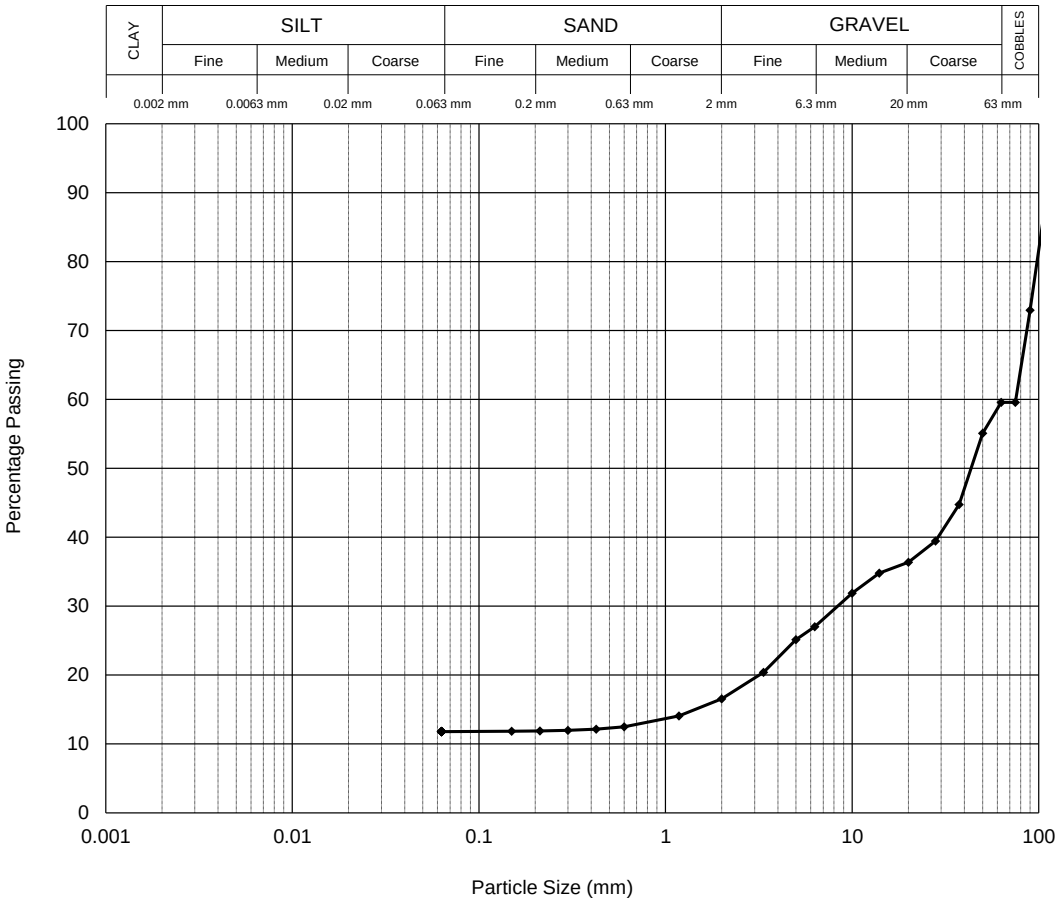
Description

Dark brown slightly sandy slightly clayey silty GRAVEL and COBBLES.

Remarks: Insuffcient sample supplied to comply with BS EN ISO 17892-4 : 2016 minimum mass requirements

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	73
75.0 mm	60
63.0 mm	60
50.0 mm	55
37.5 mm	45
28.0 mm	39
20.0 mm	36
14.0 mm	35
10.0 mm	32
6.30 mm	27
5.00 mm	25
3.35 mm	20
2.00 mm	17
1.18 mm	14
600 µm	12
425 µm	12
300 µm	12
212 µm	12
150 µm	12
63 µm	12



Particle Proportions	
Cobbles	40.4
Gravel	43.0
Sand	4.8
Silt & Clay	11.8

Tested by TH
Checked and Approved by

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

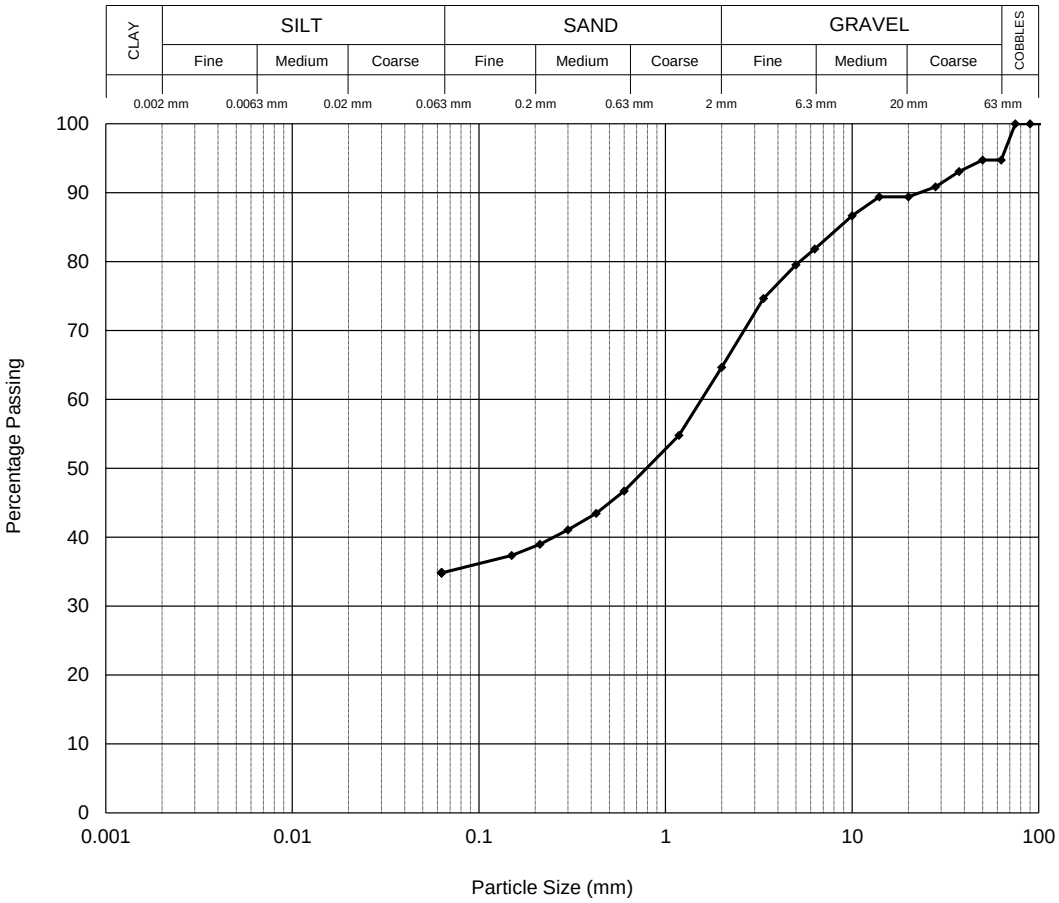
Location	TP104
Sample Depth	1.00-1.50 m
Sample Type	LB

Description

Dark brown sandy silty gravelly CLAY with rare cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	95
50.0 mm	95
37.5 mm	93
28.0 mm	91
20.0 mm	89
14.0 mm	89
10.0 mm	87
6.30 mm	82
5.00 mm	80
3.35 mm	75
2.00 mm	65
1.18 mm	55
600 µm	47
425 µm	43
300 µm	41
212 µm	39
150 µm	37
63 µm	35



Particle Proportions	
Cobbles	5.2
Gravel	30.1
Sand	29.8
Silt & Clay	34.9

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

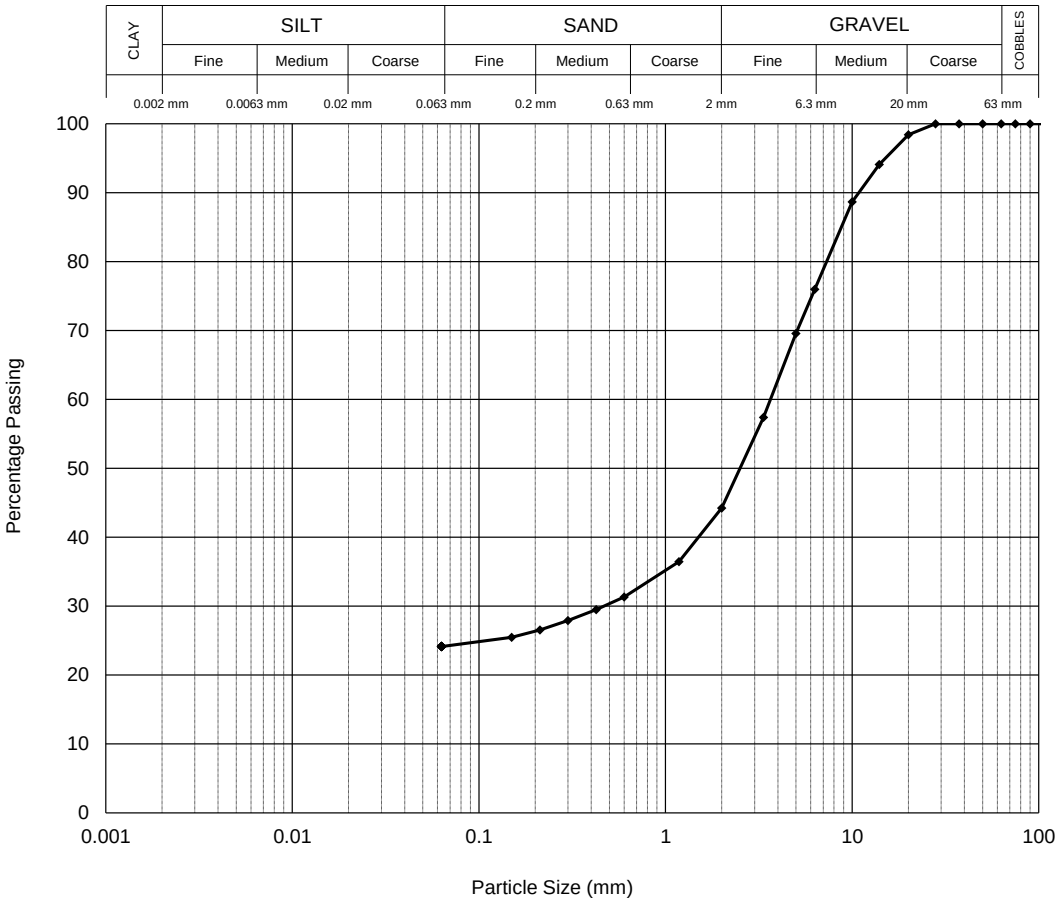
Location	TP104
Sample Depth	2.10-2.50 m
Sample Type	LB

Description

Dark brown mottled yellow sandy gravelly silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	98
14.0 mm	94
10.0 mm	89
6.30 mm	76
5.00 mm	70
3.35 mm	57
2.00 mm	44
1.18 mm	36
600 µm	31
425 µm	30
300 µm	28
212 µm	27
150 µm	25
63 µm	24



Particle Proportions	
Cobbles	0.0
Gravel	55.8
Sand	20.1
Silt & Clay	24.1

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

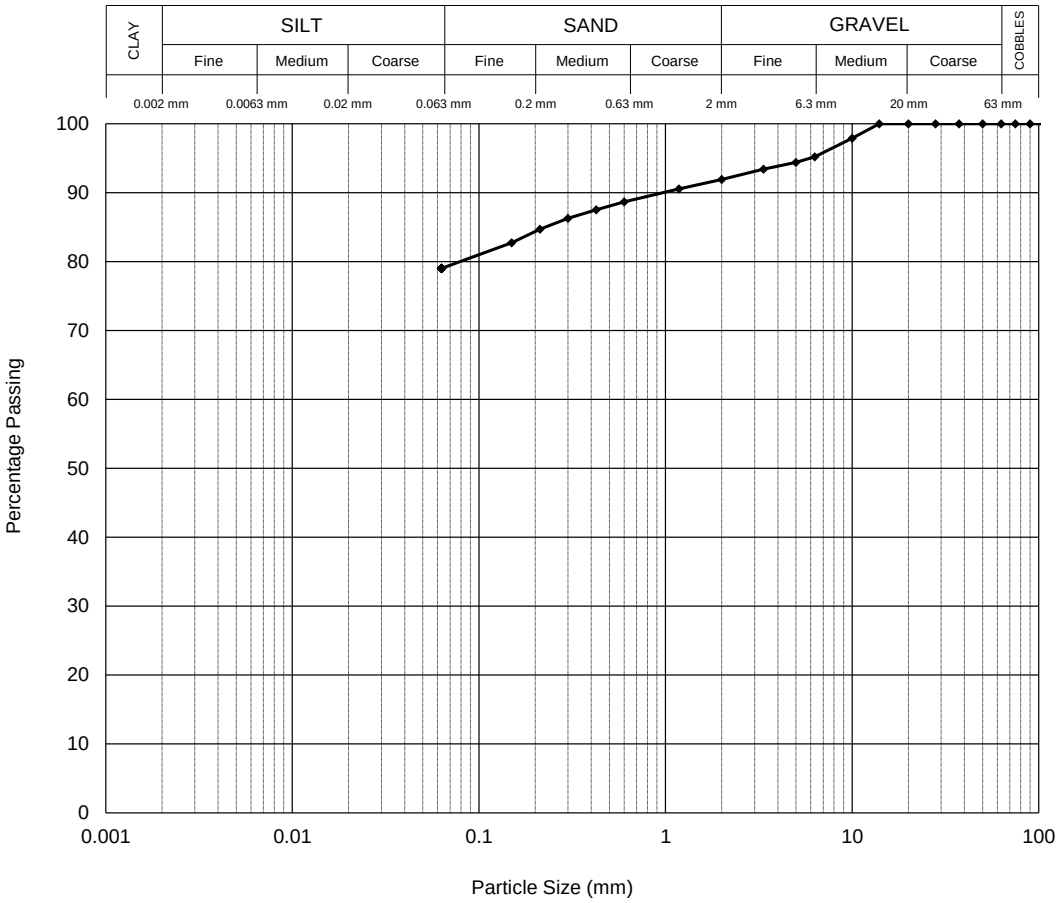
Location	TP105
Sample Depth	0.70-1.10 m
Sample Type	LB

Description

Yellowish brown slightly sandy slightly gravelly silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	95
5.00 mm	94
3.35 mm	93
2.00 mm	92
1.18 mm	91
600 µm	89
425 µm	88
300 µm	86
212 µm	85
150 µm	83
63 µm	79



Particle Proportions	
Cobbles	0.0
Gravel	8.1
Sand	12.9
Silt & Clay	79.0

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

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COLEG SIR GAR
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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

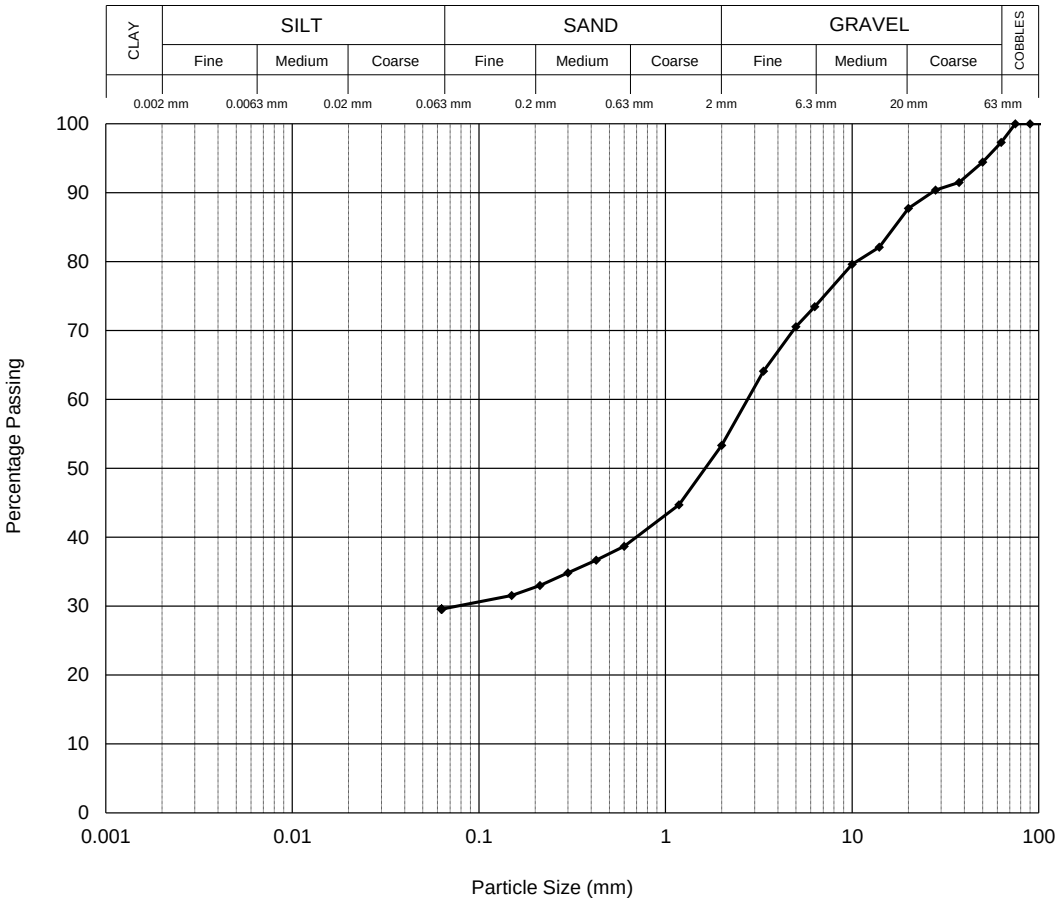
Location	TP105
Sample Depth	2.20-2.50 m
Sample Type	LB

Description

Dark brown sandy silty gravelly CLAY with rare cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	97
50.0 mm	94
37.5 mm	91
28.0 mm	90
20.0 mm	88
14.0 mm	82
10.0 mm	80
6.30 mm	73
5.00 mm	71
3.35 mm	64
2.00 mm	53
1.18 mm	45
600 µm	39
425 µm	37
300 µm	35
212 µm	33
150 µm	32
63 µm	30



Particle Proportions	
Cobbles	2.7
Gravel	43.9
Sand	23.8
Silt & Clay	29.6

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

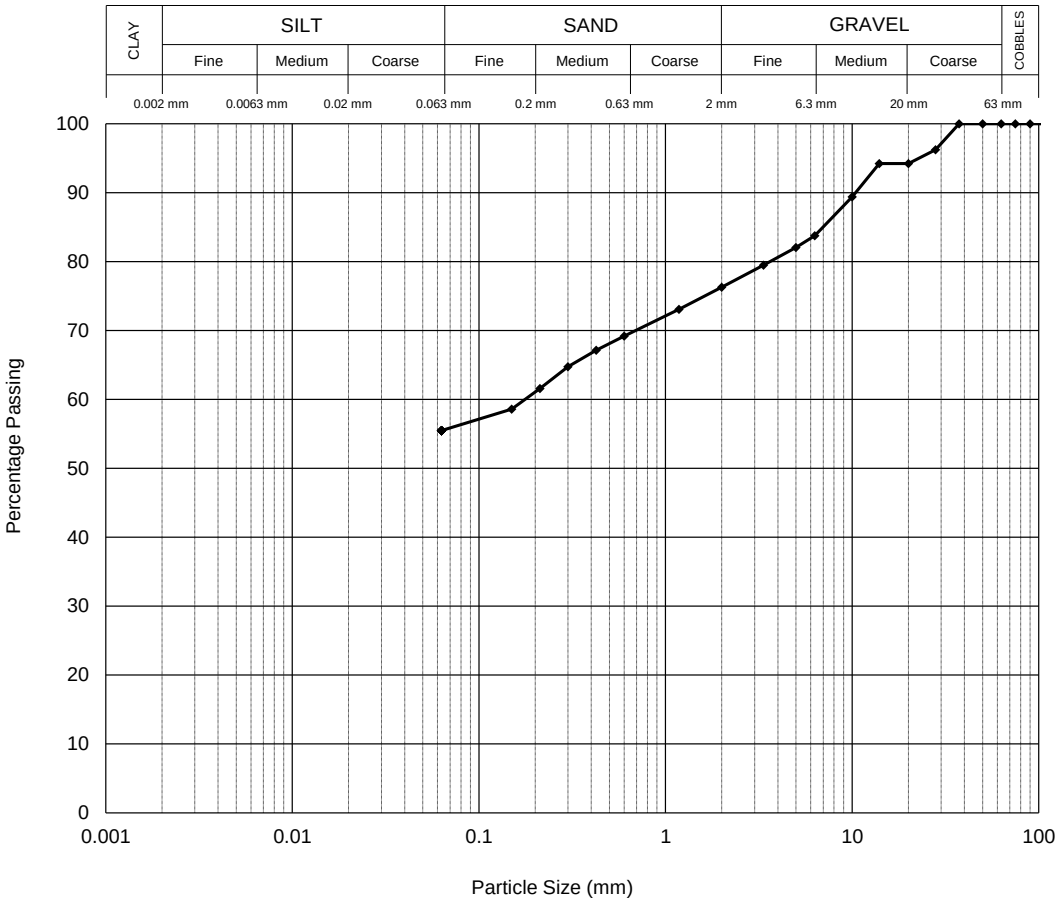
Location	TP106
Sample Depth	0.70-1.00 m
Sample Type	LB

Description

Dark brown mottled grey sandy gravelly silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	96
20.0 mm	94
14.0 mm	94
10.0 mm	89
6.30 mm	84
5.00 mm	82
3.35 mm	80
2.00 mm	76
1.18 mm	73
600 µm	69
425 µm	67
300 µm	65
212 µm	62
150 µm	59
63 µm	55



Particle Proportions	
Cobbles	0.0
Gravel	23.7
Sand	20.8
Silt & Clay	55.5

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

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Project Name:

COLEG SIR GAR
C4103

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

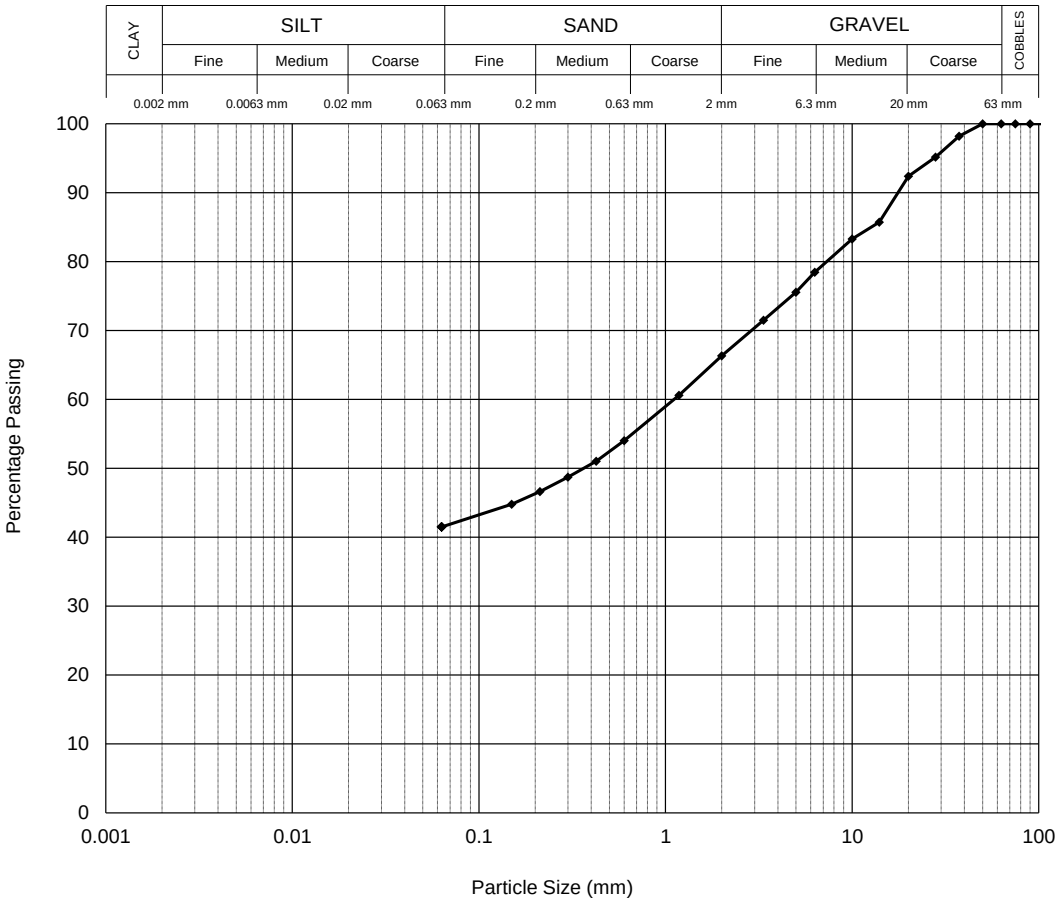
Location	TP106
Sample Depth	2.00-2.50 m
Sample Type	LB

Description

Dark grey mottled brown gravelly slightly sandy silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	98
28.0 mm	95
20.0 mm	92
14.0 mm	86
10.0 mm	83
6.30 mm	78
5.00 mm	76
3.35 mm	72
2.00 mm	66
1.18 mm	61
600 µm	54
425 µm	51
300 µm	49
212 µm	47
150 µm	45
63 µm	41



Particle Proportions	
Cobbles	0.0
Gravel	33.7
Sand	24.9
Silt & Clay	41.4

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS®
UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

Location	WS102
Sample Depth	2.40-2.70 m
Sample Type	D

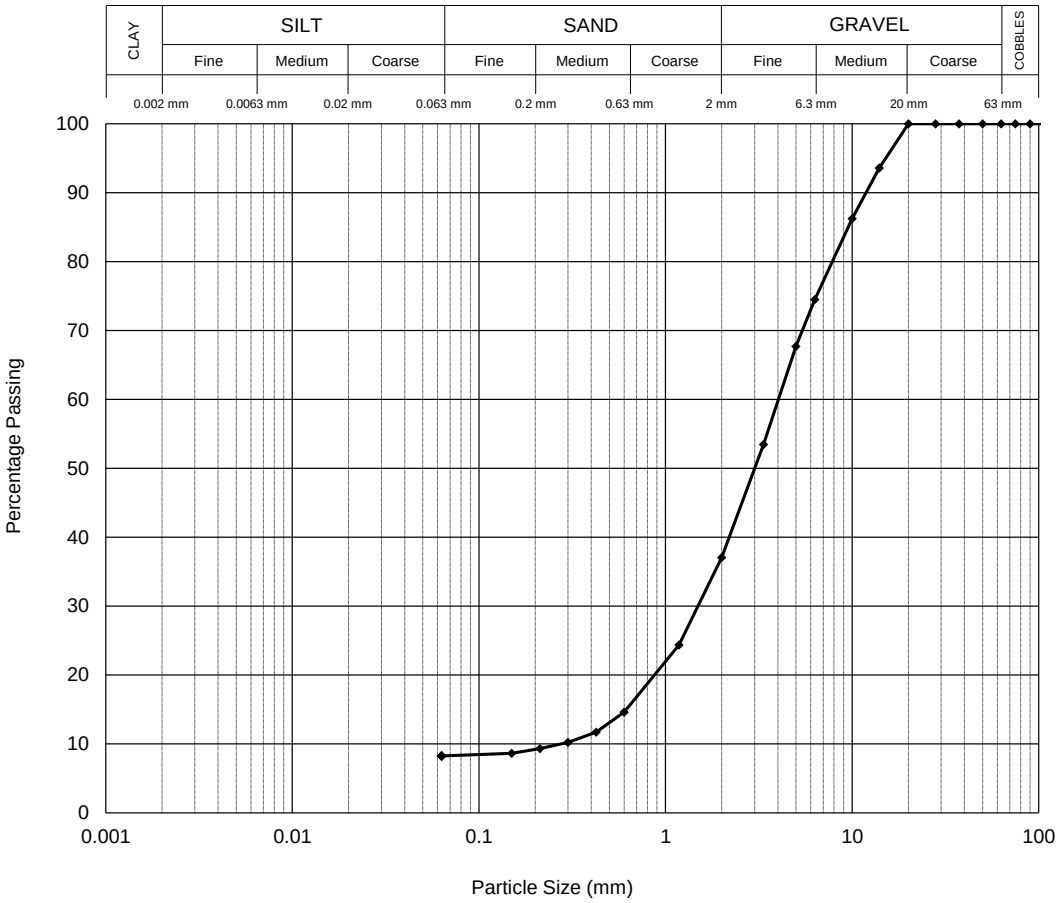
Description

Dark brown slightly clayey silty very sandy GRAVEL.

Remarks: Insuffcient sample supplied to comply with BS EN ISO 17892-4 : 2016 minimum mass requirements

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	94
10.0 mm	86
6.30 mm	74
5.00 mm	68
3.35 mm	53
2.00 mm	37
1.18 mm	24
600 µm	15
425 µm	12
300 µm	10
212 µm	9
150 µm	9
63 µm	8



Particle Proportions	
Cobbles	0.0
Gravel	62.9
Sand	28.8
Silt & Clay	8.3

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS®
UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

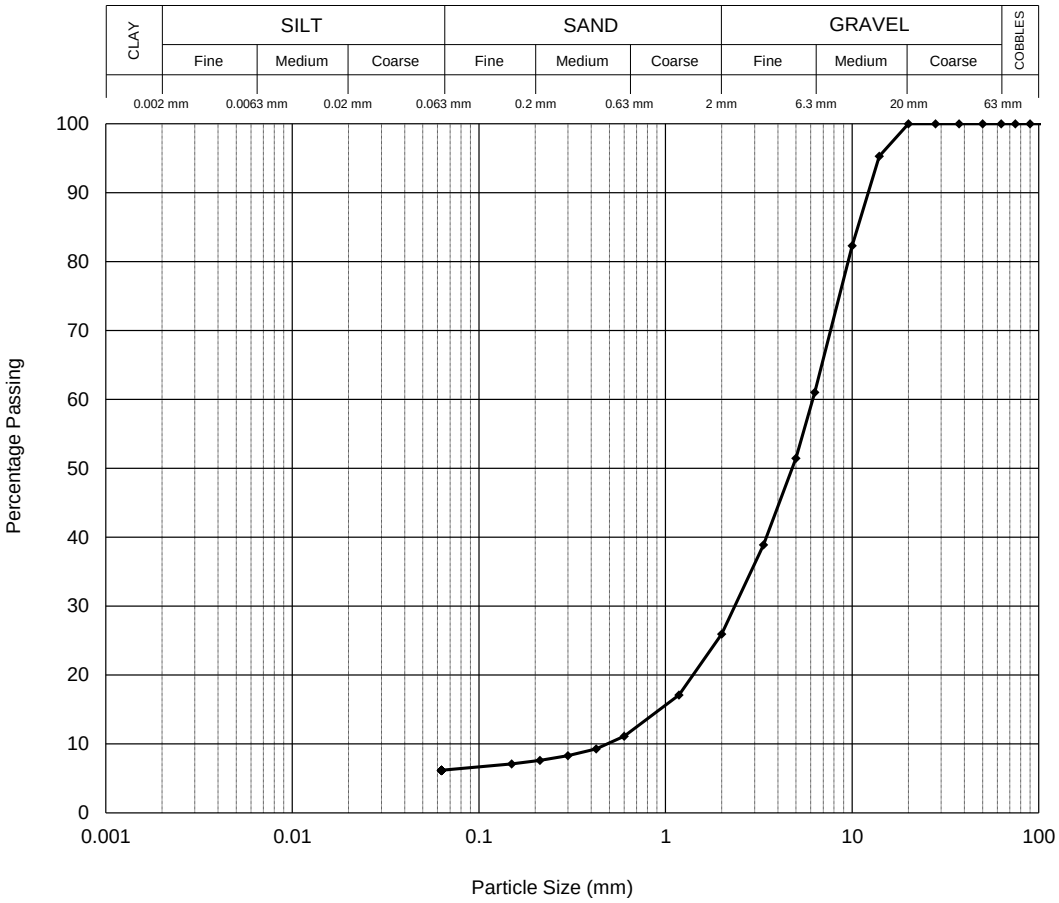
Location	WS104
Sample Depth	2.50-2.80 m
Sample Type	D

Description

Dark brown slightly clayey silty sandy GRAVEL.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	95
10.0 mm	82
6.30 mm	61
5.00 mm	51
3.35 mm	39
2.00 mm	26
1.18 mm	17
600 µm	11
425 µm	9
300 µm	8
212 µm	8
150 µm	7
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	74.0
Sand	19.8
Silt & Clay	6.2

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

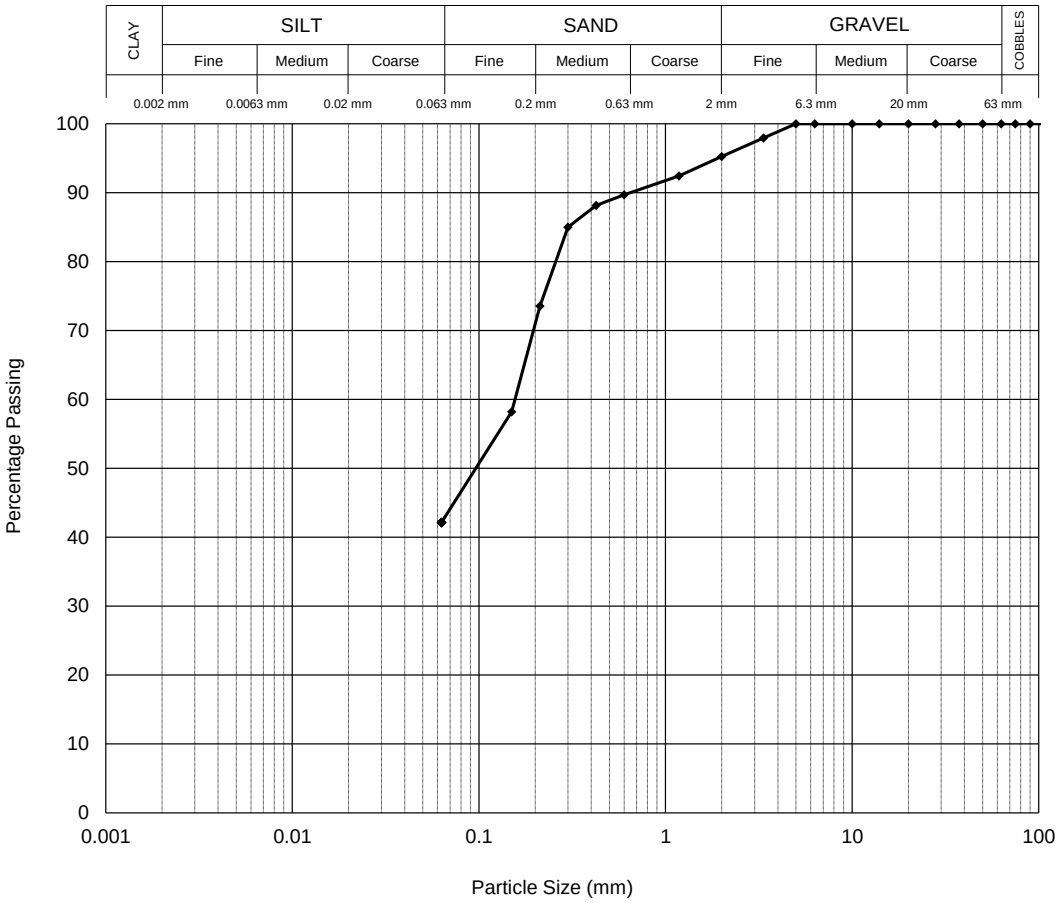
Location	WS105
Sample Depth	2.00-2.30 m
Sample Type	D

Description

Brown slightly gravelly sandy silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	98
2.00 mm	95
1.18 mm	92
600 µm	90
425 µm	88
300 µm	85
212 µm	74
150 µm	58
63 µm	42



Particle Proportions	
Cobbles	0.0
Gravel	4.8
Sand	53.1
Silt & Clay	42.1

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

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Project Name:

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

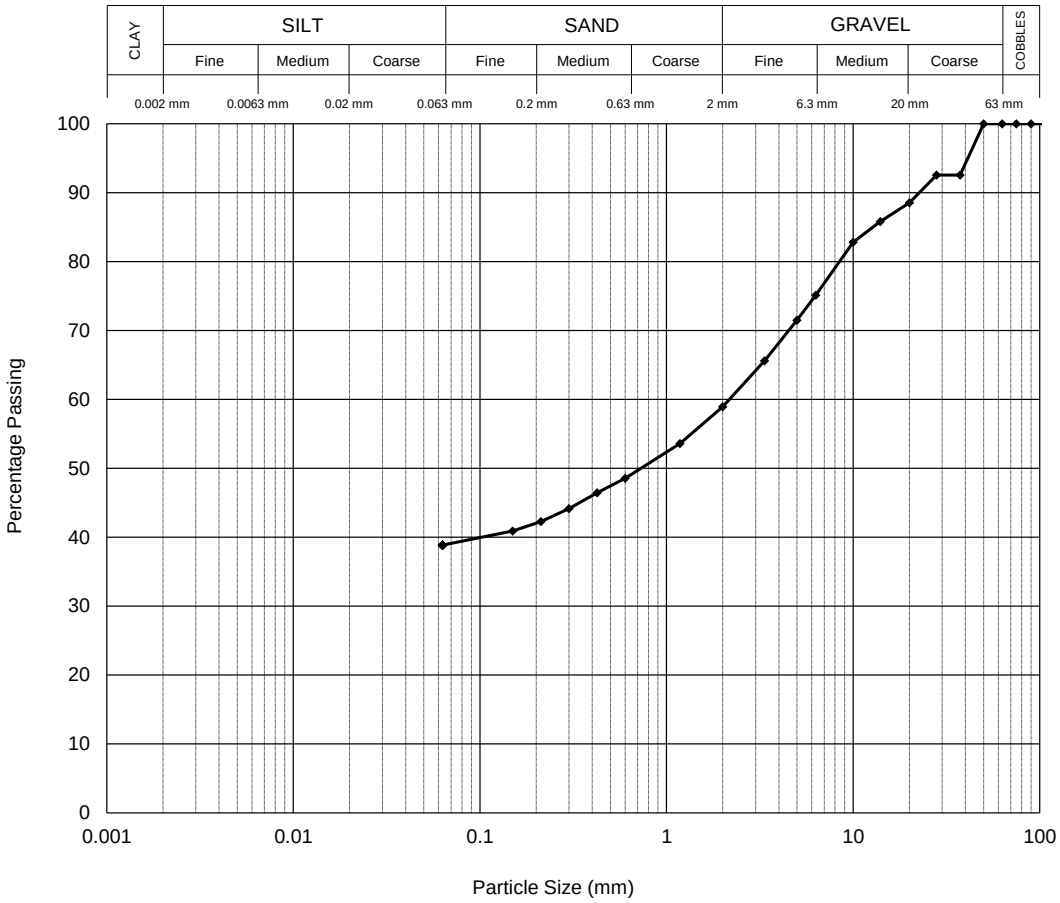
Location	WS106
Sample Depth	2.50-3.00 m
Sample Type	D

Description

Dark grey sandy gravelly silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	93
28.0 mm	93
20.0 mm	89
14.0 mm	86
10.0 mm	83
6.30 mm	75
5.00 mm	71
3.35 mm	66
2.00 mm	59
1.18 mm	54
600 µm	49
425 µm	46
300 µm	44
212 µm	42
150 µm	41
63 µm	39



Particle Proportions	
Cobbles	0.0
Gravel	41.1
Sand	20.1
Silt & Clay	38.8

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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WATER CONTENT / DRY DENSITY RELATIONSHIP

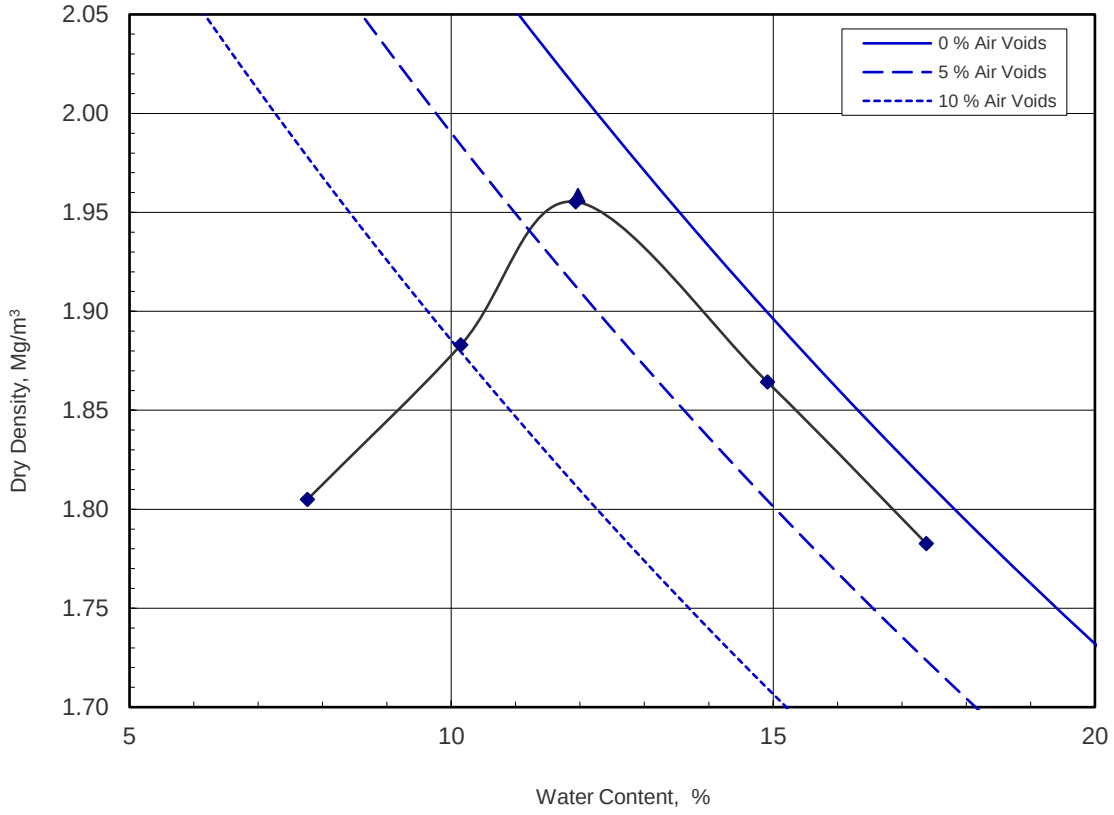
Location	SA201
Sample Depth	0.80-1.10 m
Sample Type	LB

Description:

Brown slightly sandy gravelly clayey SILT with rare cobbles and roots.

Zone X non - standard test

Preparation		Oven dried
Test Method		4.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	14
Mass Retained on 20.0 mm Sieve	%	6
Grading Zone		X
Particle Density - Assumed	Mg/m³	2.65
Maximum Dry Density	Mg/m³	1.96
Optimum Water Content	%	12.0



Determination		1	2	3	4	5
Water Content	%	7.8	10.1	11.9	14.9	17.4
Dry Density	Mg/m³	1.81	1.88	1.96	1.86	1.78

Tested by LH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.6

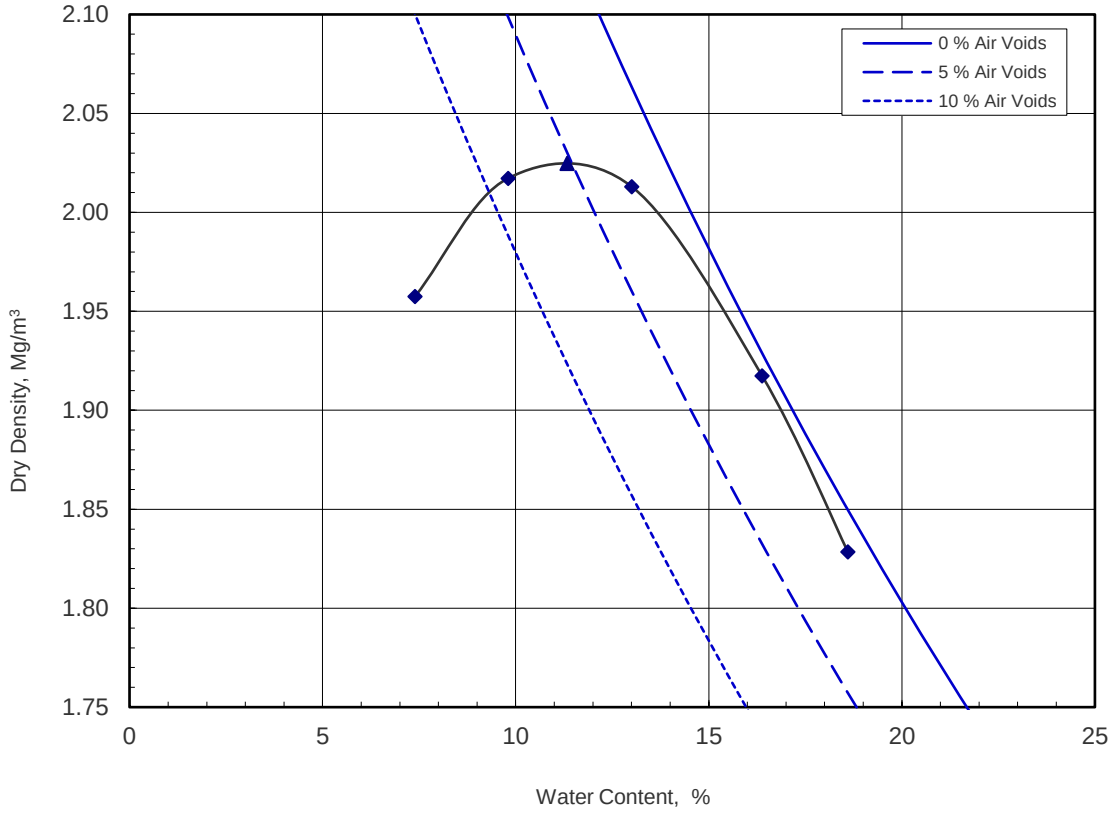
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	SA202
Sample Depth	0.50-0.90 m
Sample Type	LB

Description:

Yellowish brown sandy gravelly silty CLAY with rare rootlets and cobbles.

Preparation		Oven dried
Test Method		4.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	5
Mass Retained on 20.0 mm Sieve	%	4
Grading Zone		5
Particle Density - Assumed	Mg/m³	2.82
Maximum Dry Density	Mg/m³	2.02
Optimum Water Content	%	11.3



Determination		1	2	3	4	5
Water Content	%	7.4	9.8	13.0	16.4	18.6
Dry Density	Mg/m³	1.96	2.02	2.01	1.92	1.83
Hand Vane	kPa	>150	>150	>150	106	74

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
16/10/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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BS 1377-2 : 2022 Clause 11.3

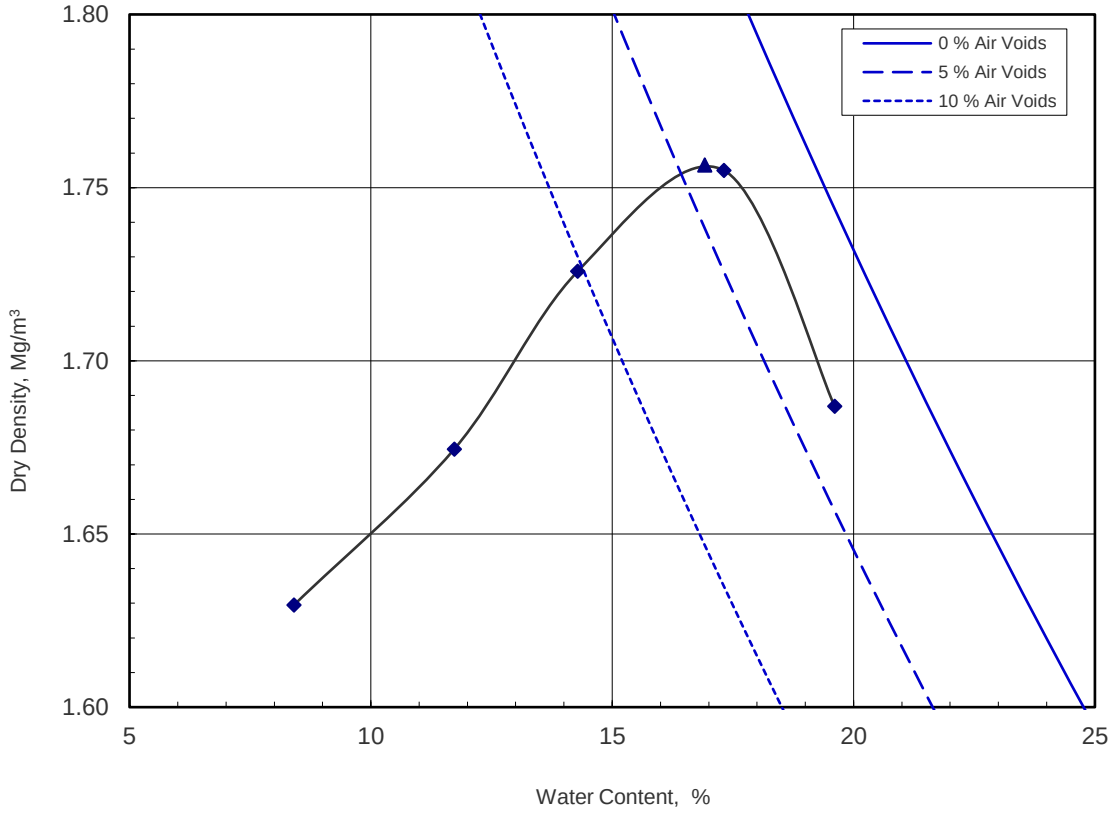
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	SA203
Sample Depth	0.70-1.00 m
Sample Type	LB

Description:

Dark grey slightly sandy slightly gravelly silty CLAY.

Preparation		Oven dried
Test Method		2.5 kg Rammer 1L mould for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	2
Grading Zone		2
Particle Density - Assumed	Mg/m³	2.65
Maximum Dry Density	Mg/m³	1.76
Optimum Water Content	%	16.9



Determination		1	2	3	4	5
Water Content	%	8.4	11.7	14.3	17.3	19.6
Dry Density	Mg/m³	1.63	1.67	1.73	1.75	1.69

Tested by LH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.5

WATER CONTENT / DRY DENSITY RELATIONSHIP

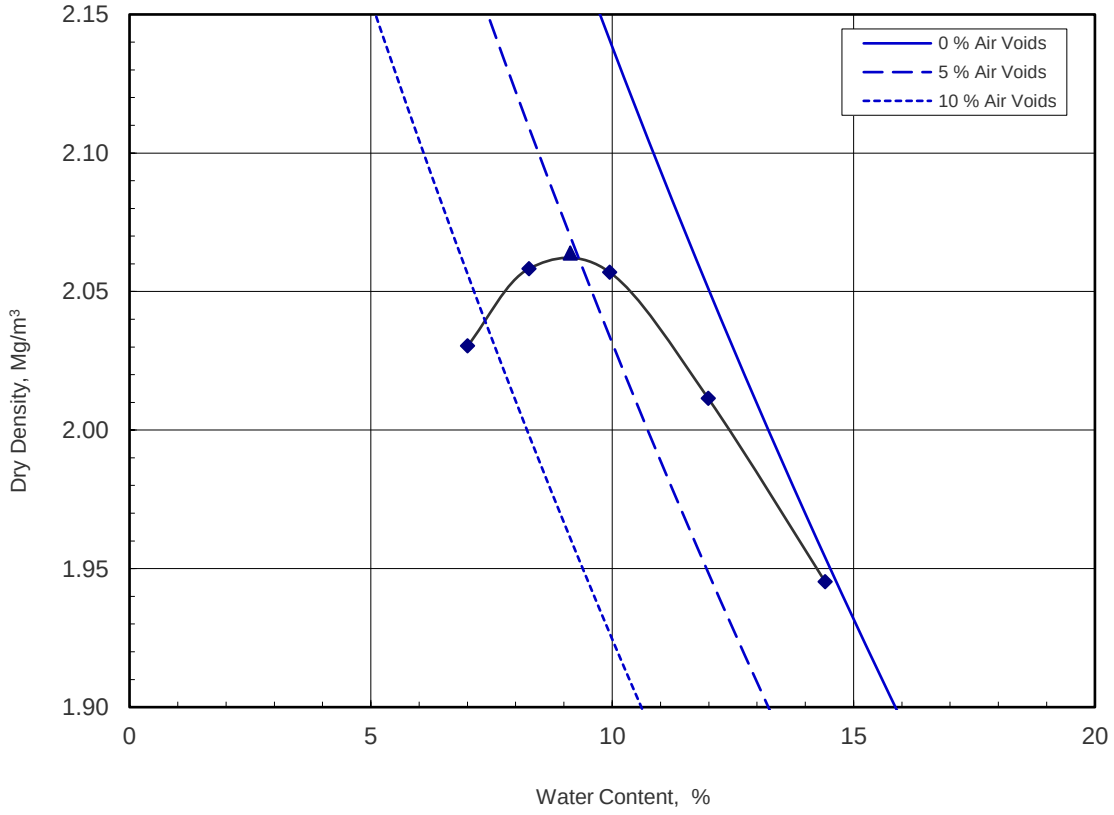
Location	SA204
Sample Depth	0.60-1.00 m
Sample Type	LB

Description:

Grey mottled brown slightly sandy silty CLAY.

HSV AT NMC- 38+36+38= 37.3

Preparation		Oven dried
Test Method		4.5 kg Rammer 1L mould for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Grading Zone		0
Particle Density - Assumed	Mg/m³	2.72
Maximum Dry Density	Mg/m³	2.06
Optimum Water Content	%	9.1



Determination		1	2	3	4	5
Water Content	%	7.0	8.3	9.9	12.0	14.4
Dry Density	Mg/m³	2.03	2.06	2.06	2.01	1.95

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
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GEOLABS

UKAS TESTING 1982

WATER CONTENT / DRY DENSITY RELATIONSHIP

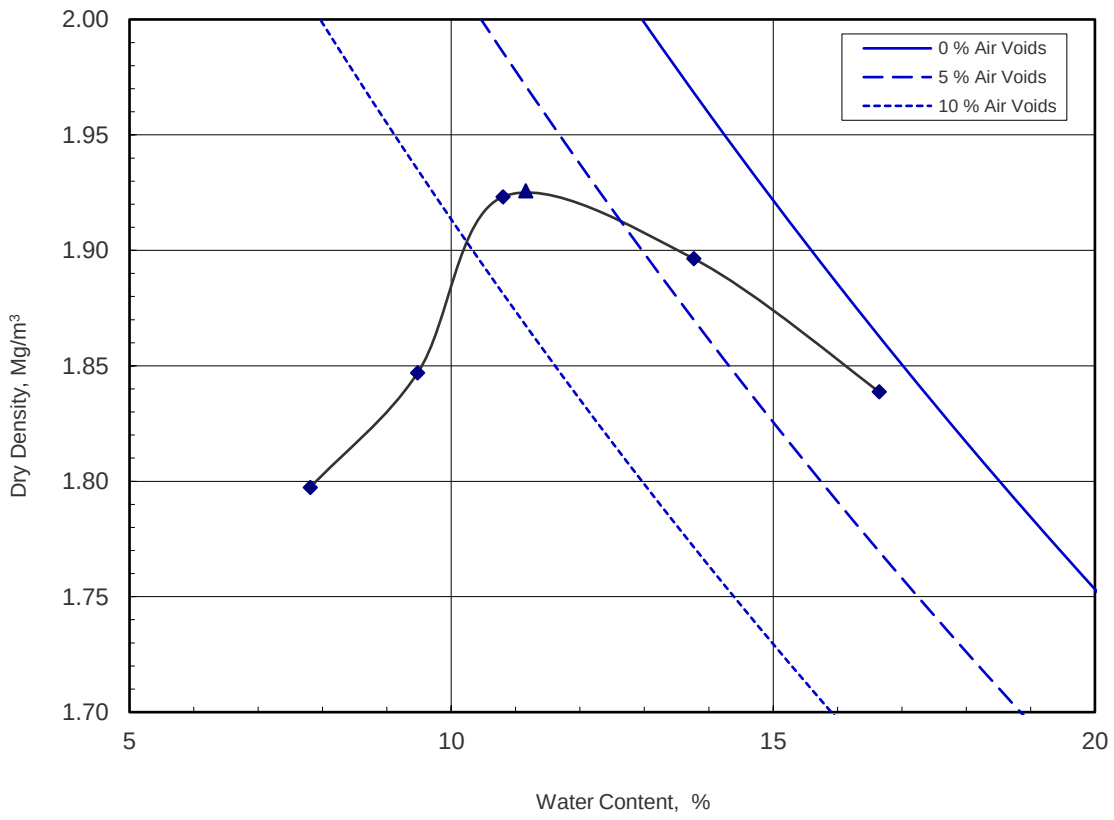
Location	SA205
Sample Depth	0.40-0.60 m
Sample Type	LB

Description:

Dark brown sandy silty clayey GRAVEL with occasional cobbles and rare roots.

Non Standard test zone x

Preparation		Oven dried
Test Method		4.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	47
Mass Retained on 20.0 mm Sieve	%	19
Grading Zone		X
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.93
Optimum Water Content	%	11.2



Determination		1	2	3	4	5
Water Content	%	7.8	9.5	10.8	13.8	16.6
Dry Density	Mg/m³	1.80	1.85	1.92	1.90	1.84

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.4

WATER CONTENT / DRY DENSITY RELATIONSHIP

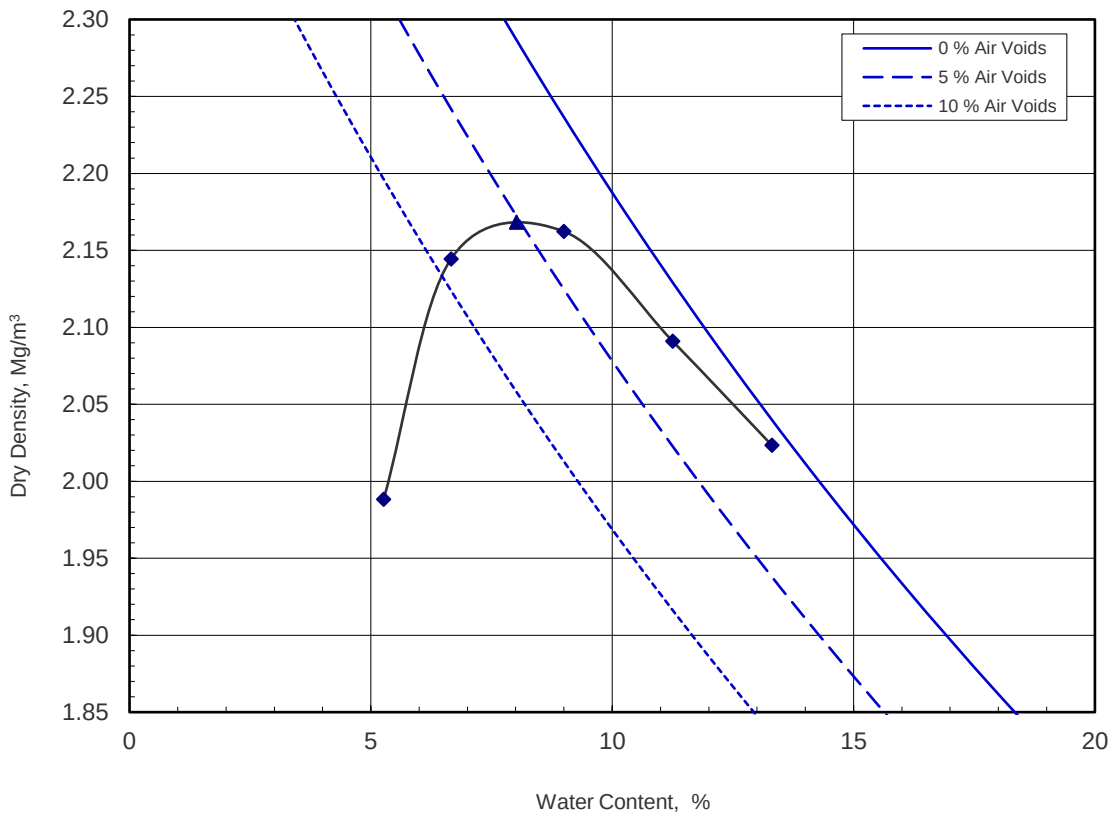
Location	SA206
Sample Depth	0.90-1.20 m
Sample Type	LB

Description:

Dark grey sandy silty clayey GRAVEL with bitumen pieces.

Non Standard zone X

Preparation		Oven dried
Test Method		2.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	15
Mass Retained on 20.0 mm Sieve	%	17
Grading Zone		X
Particle Density - Assumed	Mg/m³	2.80
Maximum Dry Density	Mg/m³	2.17
Optimum Water Content	%	8.0



Determination		1	2	3	4	5
Water Content	%	5.3	6.7	9.0	11.3	13.3
Dry Density	Mg/m³	1.99	2.14	2.16	2.09	2.02
Hand Vane	kPa	>150	>150	53.3	24	10.7

Tested by LH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.4

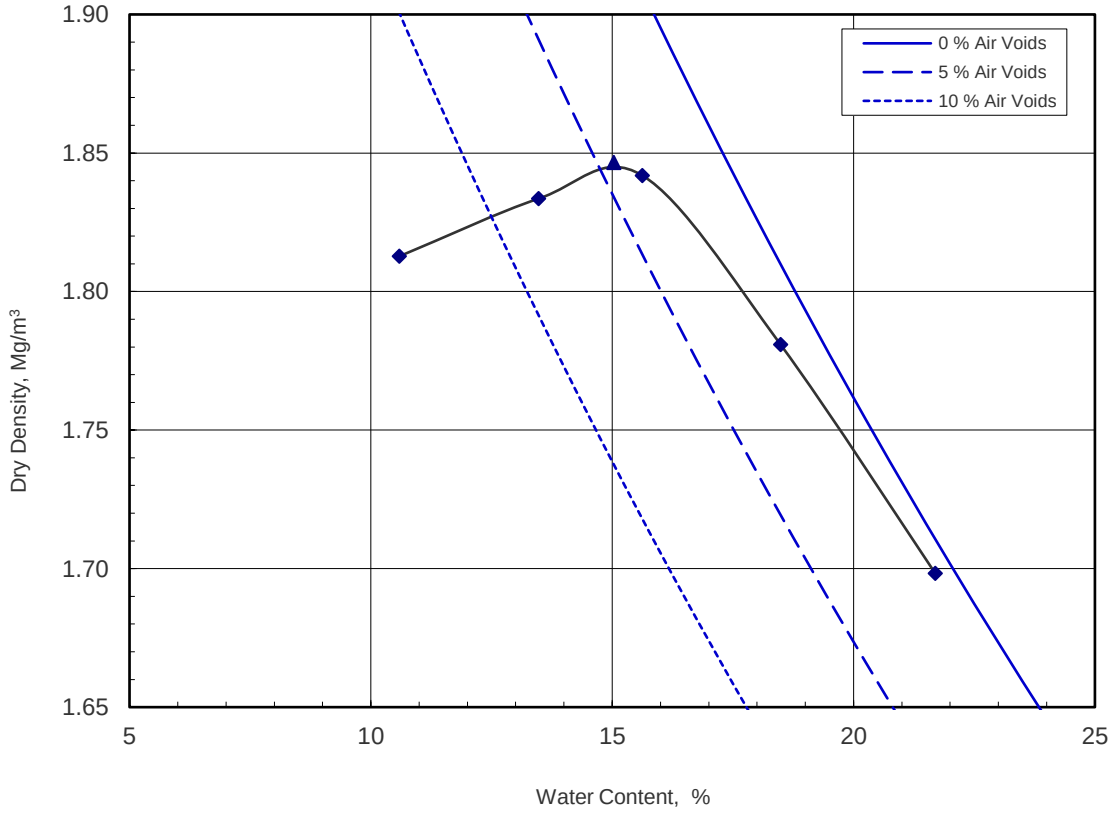
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	TP104
Sample Depth	1.00-1.50 m
Sample Type	LB

Description:

Dark brown sandy silty gravelly CLAY with rare cobbles.

Preparation		Oven dried
Test Method		2.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	7
Mass Retained on 20.0 mm Sieve	%	4
Grading Zone		5
Particle Density - Measured	Mg/m³	2.72
Maximum Dry Density	Mg/m³	1.85
Optimum Water Content	%	15.0



Determination		1	2	3	4	5
Water Content	%	10.6	13.5	15.6	18.5	21.7
Dry Density	Mg/m³	1.81	1.83	1.84	1.78	1.70
Hand Vane	kPa	>150	120.6	48.3	17.6	6.6

Tested by LH
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.5

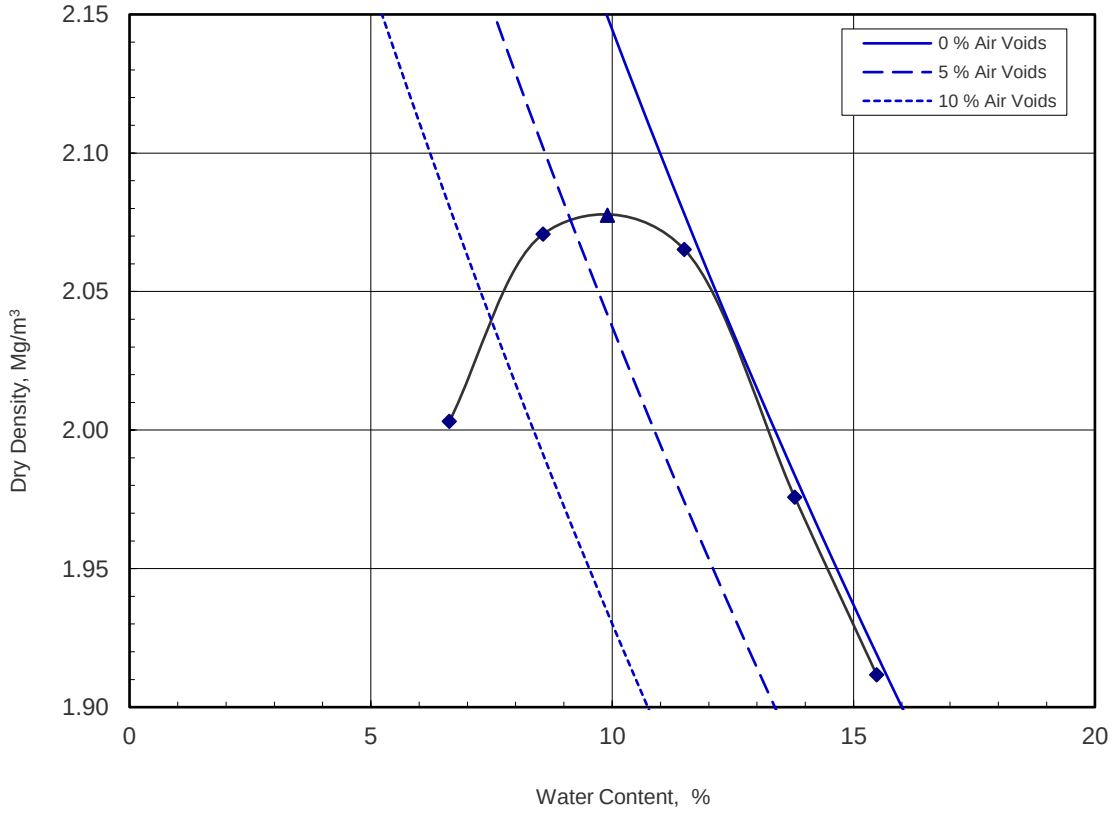
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	TP104
Sample Depth	2.10-2.50 m
Sample Type	LB

Description:

Dark brown mottled yellow sandy gravelly silty CLAY.

Preparation		Oven dried
Test Method		4.5 kg Rammer 1L mould for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	2
Grading Zone		2
Particle Density - Measured	Mg/m³	2.73
Maximum Dry Density	Mg/m³	2.08
Optimum Water Content	%	9.9



Determination		1	2	3	4	5
Water Content	%	6.6	8.6	11.5	13.8	15.5
Dry Density	Mg/m³	2.00	2.07	2.07	1.98	1.91
Hand Vane	kPa	>150	>150	140.3	99.3	43.3

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.3

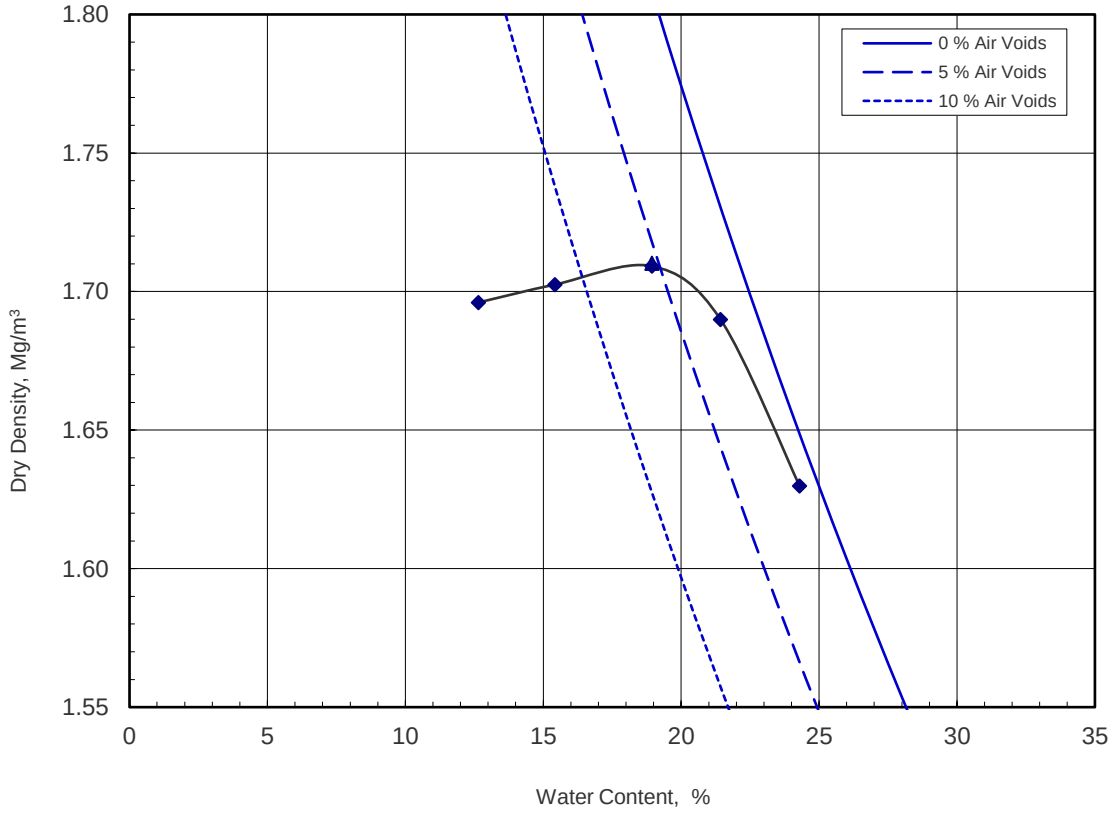
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	TP105
Sample Depth	0.70-1.10 m
Sample Type	LB

Description:

Yellowish brown slightly sandy slightly gravelly silty CLAY.

Preparation		Oven dried
Test Method		2.5 kg Rammer 1L mould for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Grading Zone		1
Particle Density - Assumed	Mg/m³	2.75
Maximum Dry Density	Mg/m³	1.71
Optimum Water Content	%	18.9



Determination		1	2	3	4	5
Water Content	%	12.6	15.4	18.9	21.4	24.3
Dry Density	Mg/m³	1.70	1.70	1.71	1.69	1.63

Tested by AK
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.6

WATER CONTENT / DRY DENSITY RELATIONSHIP

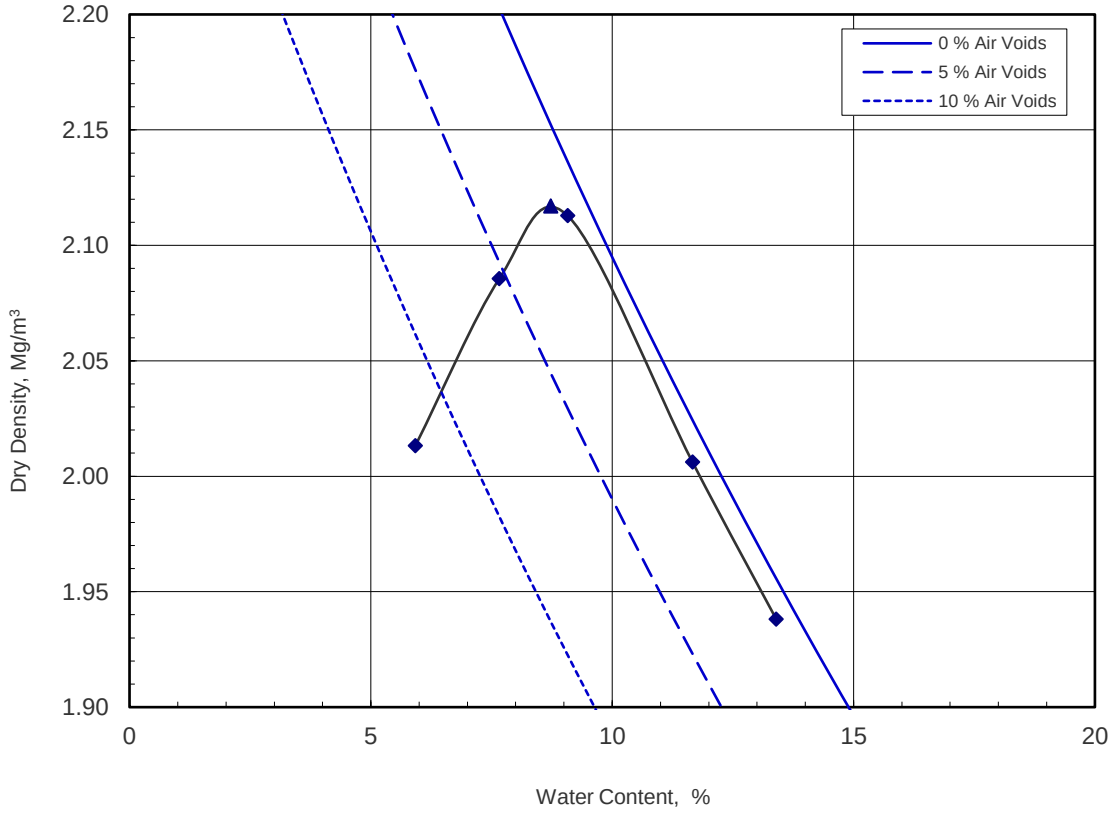
Location	TP105
Sample Depth	2.20-2.50 m
Sample Type	LB

Description:

Dark brown sandy silty gravelly CLAY with rare cobbles.

HSV AT NMC = 78+90+106=91.3

Preparation		Oven dried
Test Method		4.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	9
Mass Retained on 20.0 mm Sieve	%	4
Grading Zone		5
Particle Density - Assumed	Mg/m³	2.65
Maximum Dry Density	Mg/m³	2.12
Optimum Water Content	%	8.7



Determination		1	2	3	4	5
Water Content	%	5.9	7.7	9.1	11.7	13.4
Dry Density	Mg/m³	2.01	2.09	2.11	2.01	1.94

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.6

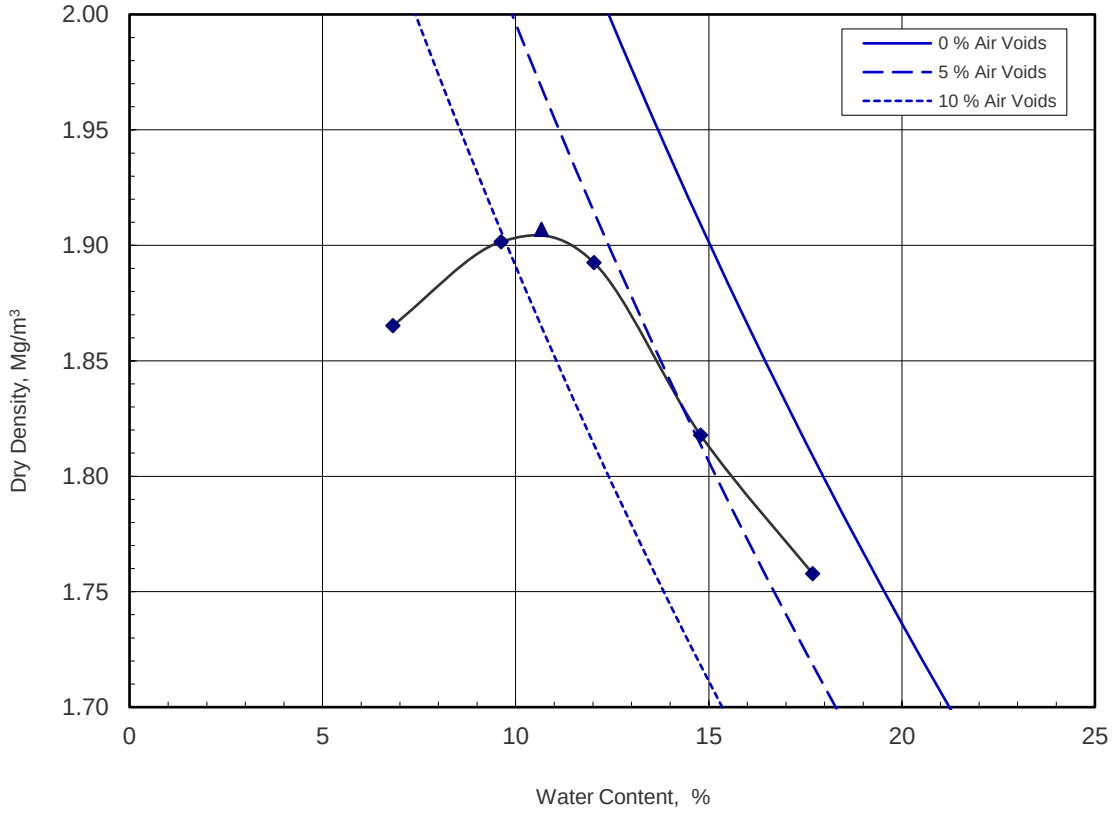
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	TP106
Sample Depth	0.70-1.00 m
Sample Type	LB

Description:

Dark brown mottled grey sandy gravelly silty CLAY.

Preparation		Oven dried
Test Method		4.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	6
Grading Zone		3
Particle Density - Measured	Mg/m³	2.66
Maximum Dry Density	Mg/m³	1.91
Optimum Water Content	%	10.7



Determination		1	2	3	4	5
Water Content	%	6.8	9.6	12.0	14.8	17.7
Dry Density	Mg/m³	1.87	1.90	1.89	1.82	1.76
Hand Vane	kPa	>150	>150	>150	>150	84

Tested by LN
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 Clause 11.4

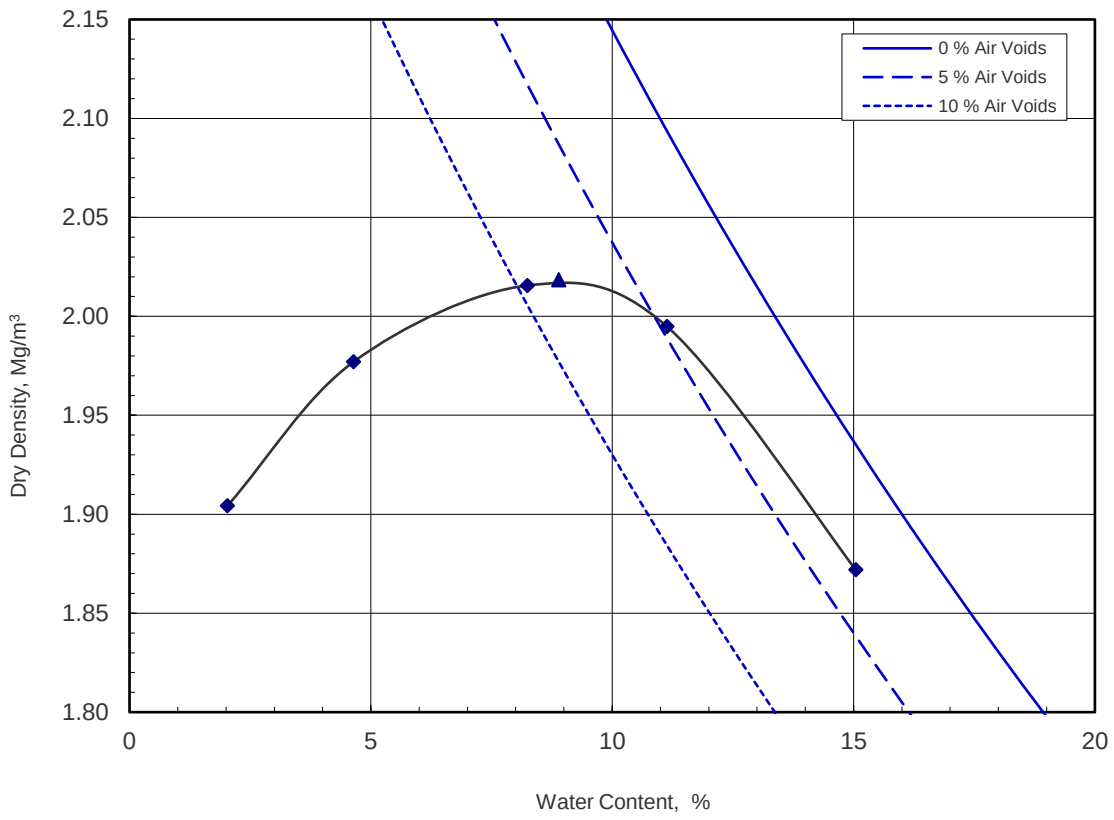
WATER CONTENT / DRY DENSITY RELATIONSHIP

Location	TP106
Sample Depth	2.00-2.50 m
Sample Type	LB

Description:

Dark grey mottled brown gravelly slightly sandy silty CLAY.

Preparation		Oven dried
Test Method		2.5 kg Rammer CBR mould for soils with some coarse gravel-size particles
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	2
Mass Retained on 20.0 mm Sieve	%	6
Grading Zone		4
Particle Density - Measured	Mg/m³	2.73
Maximum Dry Density	Mg/m³	2.02
Optimum Water Content	%	8.9



Determination		1	2	3	4	5
Water Content	%	2.0	4.6	8.2	11.1	15.0
Dry Density	Mg/m³	1.90	1.98	2.02	1.99	1.87
Hand Vane	kPa	>150	>150	>150	142.6	46.6

Tested by AK
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

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UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA201
Sample Depth	0.80-1.10 m
Sample Type	LB

Description:

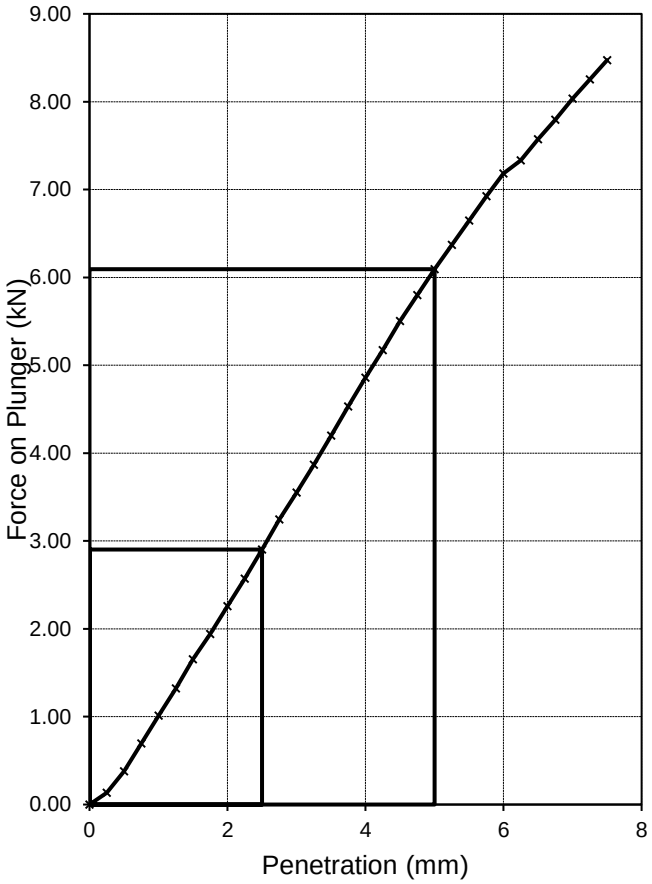
Brown slightly sandy gravelly clayey SILT with rare cobbles and roots.

PREPARATION DETAILS

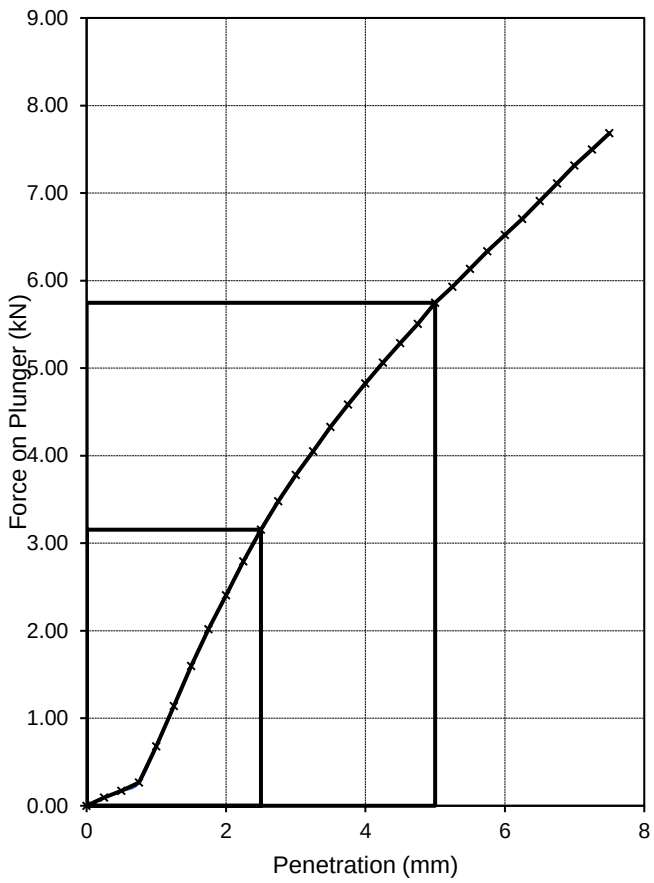
The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.17 Mg/m³
Prepared dry density 1.91 Mg/m³
19.5 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	50 N	50 N
Water content	13 %	14 %
CBR Value	30 %	29 %

Top of Specimen



Base of Specimen



Tested by AK
Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA202
Sample Depth	0.50-0.90 m
Sample Type	LB

Description:

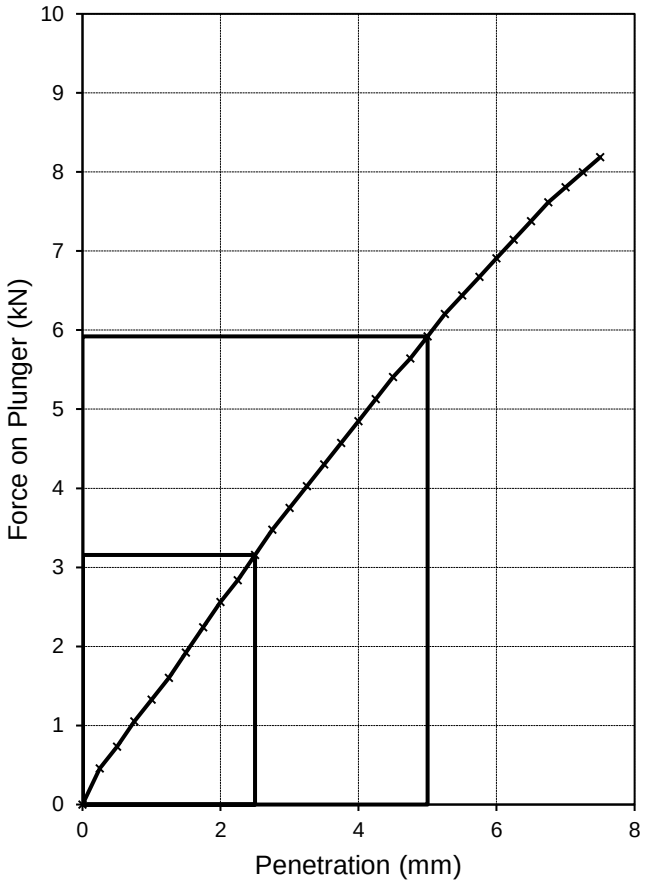
Yellowish brown sandy gravelly silty CLAY with rare rootlets and cobbles.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.22 Mg/m³
Prepared dry density 1.97 Mg/m³
9.0 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	250 N
Water content	13 %	13 %
CBR Value	30 %	35 %

Top of Specimen



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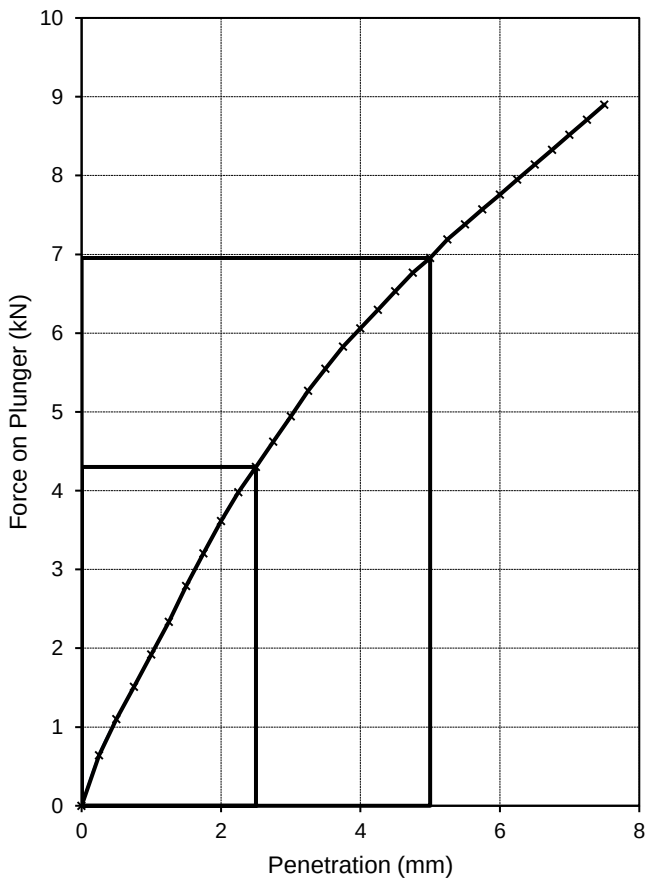

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18/09/2024

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Project Name:

COLEG SIR GAR
C4103

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA203
Sample Depth	0.70-1.00 m
Sample Type	LB

Description:

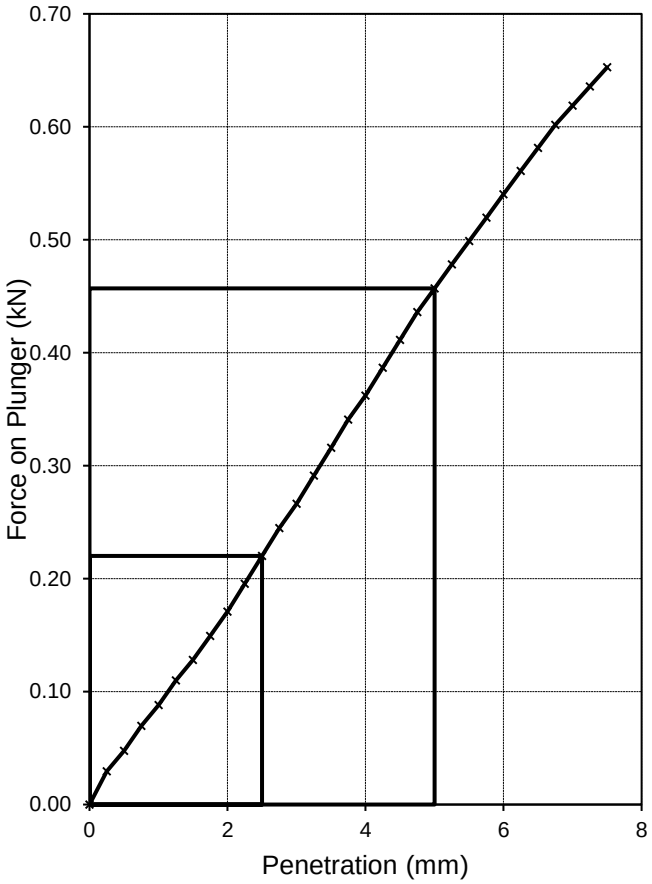
Dark grey slightly sandy slightly gravelly silty CLAY.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.04 Mg/m³
Prepared dry density 1.74 Mg/m³
2.1 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	10 N	10 N
Water content	17 %	17 %
CBR Value	2.3 %	2.1 %

Top of Specimen



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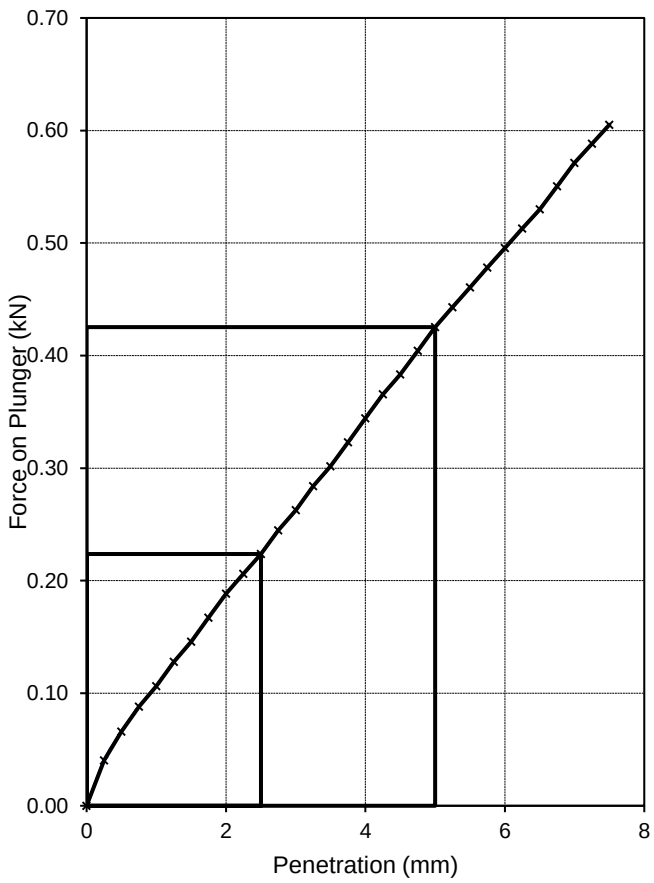

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S Burke

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18/09/2024

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COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA204
Sample Depth	0.60-1.00 m
Sample Type	LB

Description:

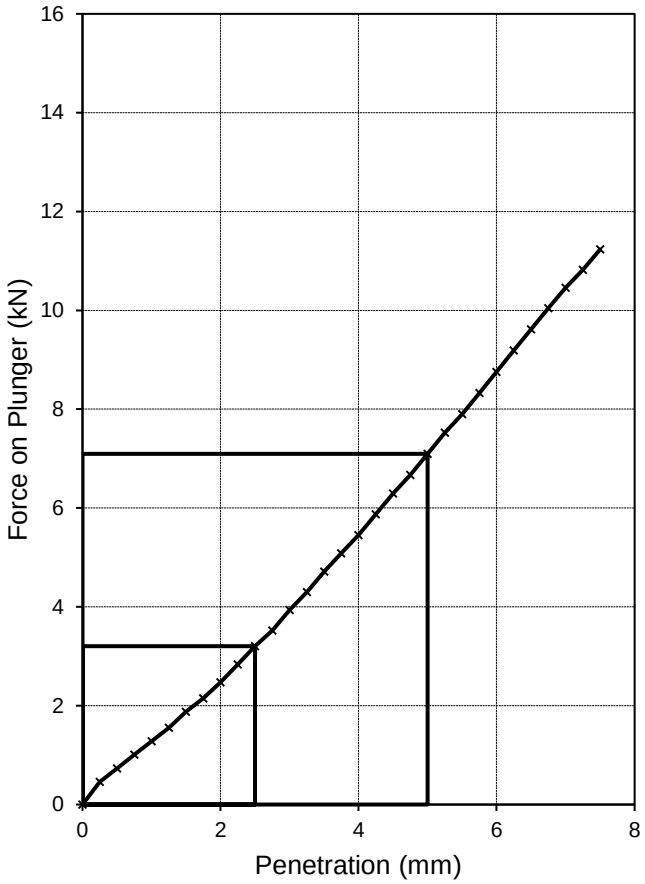
Grey mottled brown slightly sandy silty CLAY.

PREPARATION DETAILS

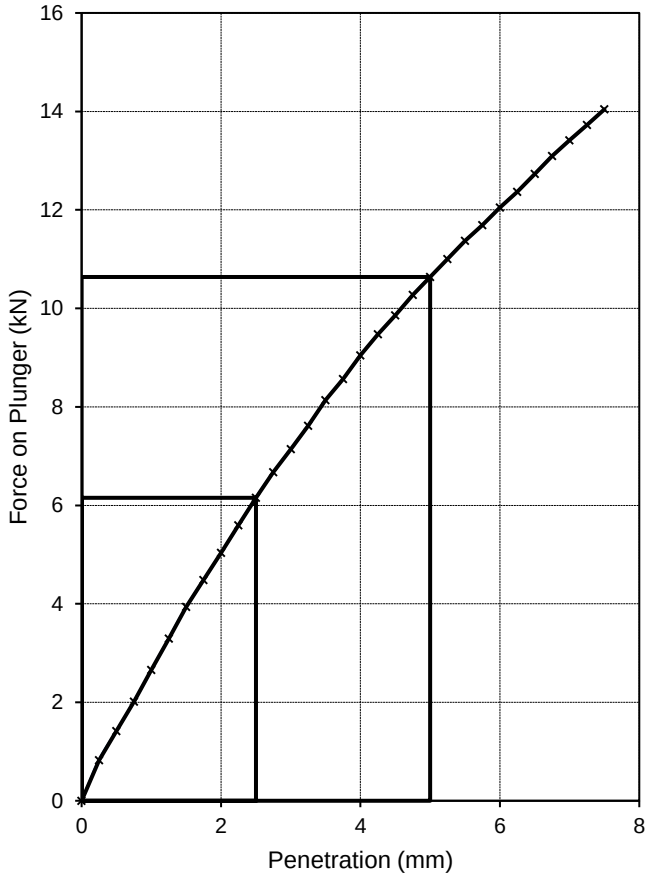
The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.26 Mg/m³
Prepared dry density 2.07 Mg/m³
0.0 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	250 N
Water content	8.8 %	9.1 %
CBR Value	35 %	53 %

Top of Specimen



Base of Specimen



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Checked and Approved by

S Burke

S Burke - Senior Technician
18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA205
Sample Depth	0.40-0.60 m
Sample Type	LB

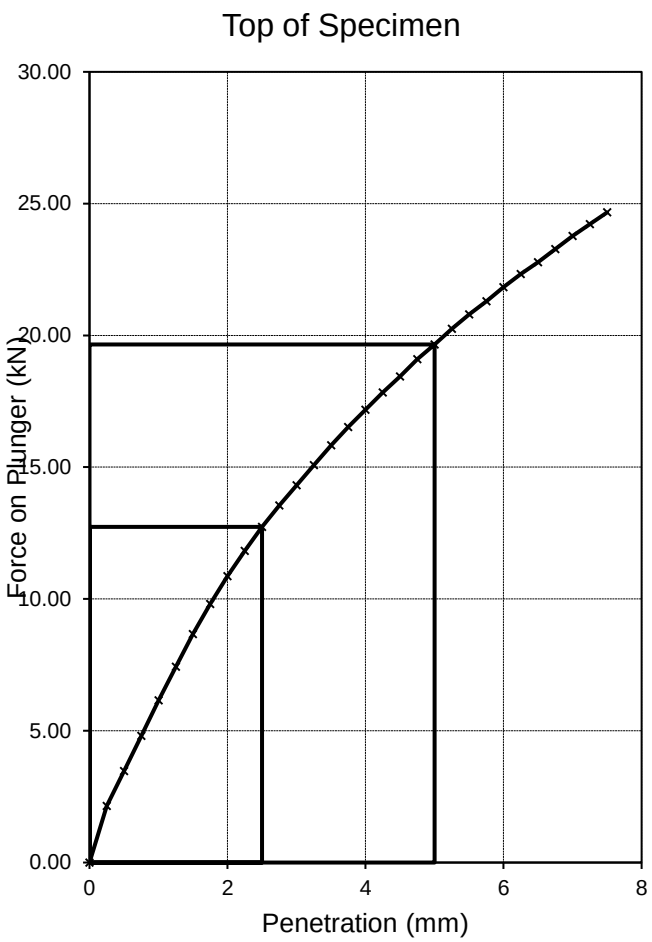
Description:

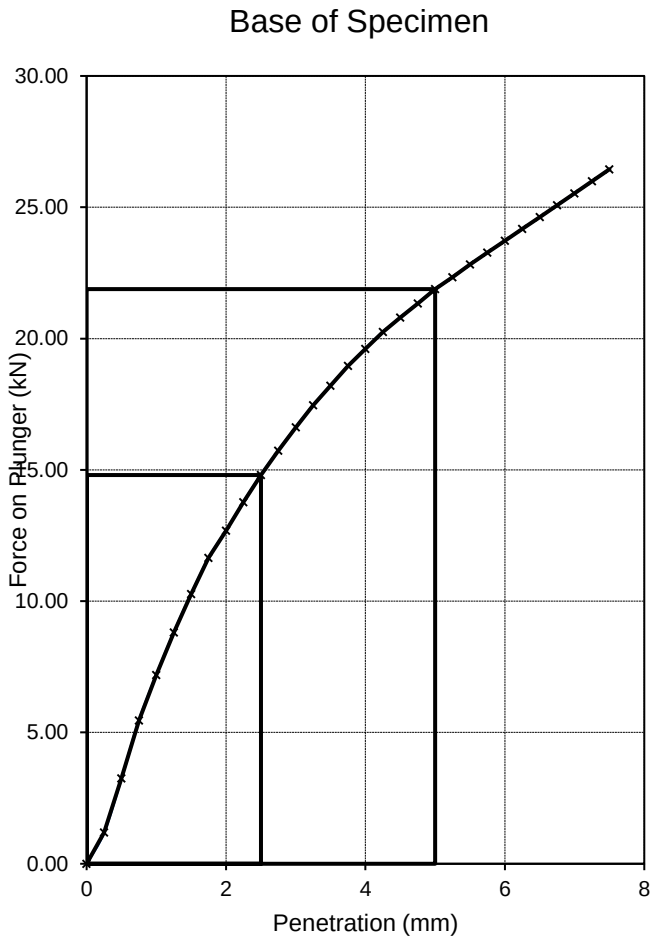
Dark brown sandy silty clayey GRAVEL with occasional cobbles and rare roots.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.16 Mg/m³
Prepared dry density 1.92 Mg/m³
66.3 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	250 N
Water content	12 %	13 %
CBR Value	98 %	112 %





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COLEG SIR GAR
C4103

GEOLABS
UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	SA206
Sample Depth	0.90-1.20 m
Sample Type	LB

Description:

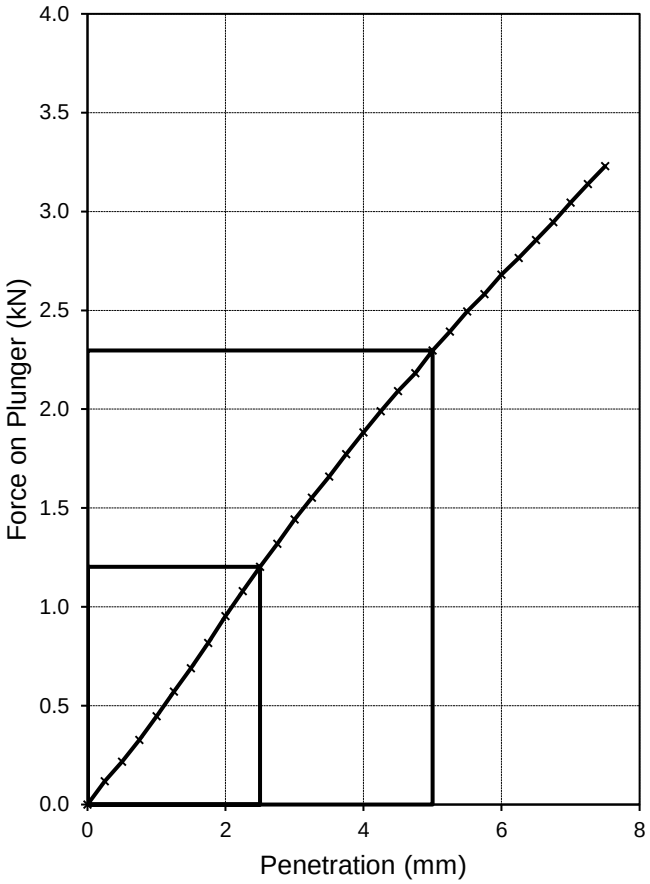
Dark grey clayey silty sandy GRAVEL with some cobbles and bitumen pieces.

PREPARATION DETAILS

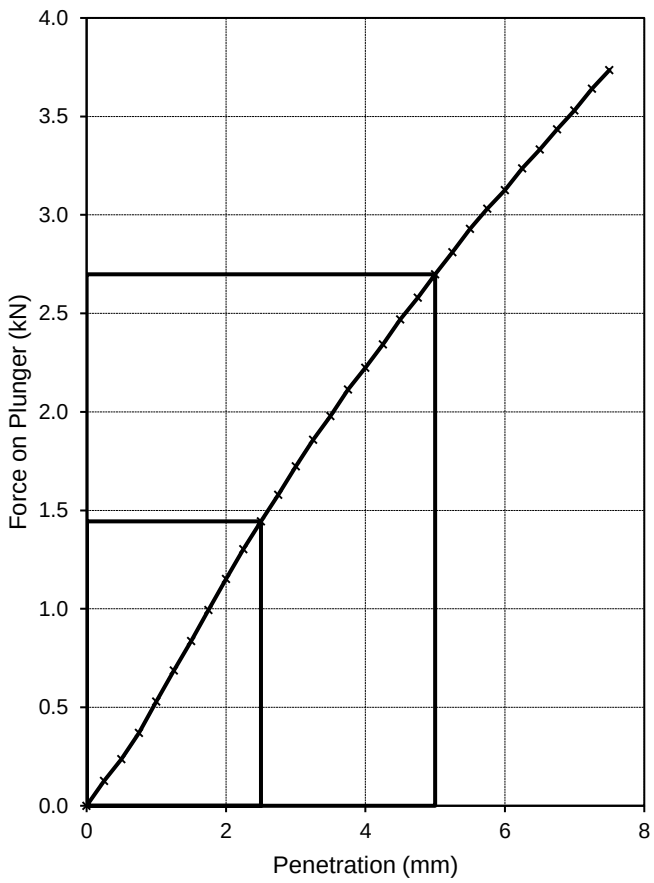
The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.32 Mg/m³
Prepared dry density 2.11 Mg/m³
31.8 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	50 N	50 N
Water content	9.4 %	10 %
CBR Value	11 %	13 %

Top of Specimen



Base of Specimen



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18/09/2024

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COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP104
Sample Depth	1.00-1.50 m
Sample Type	LB

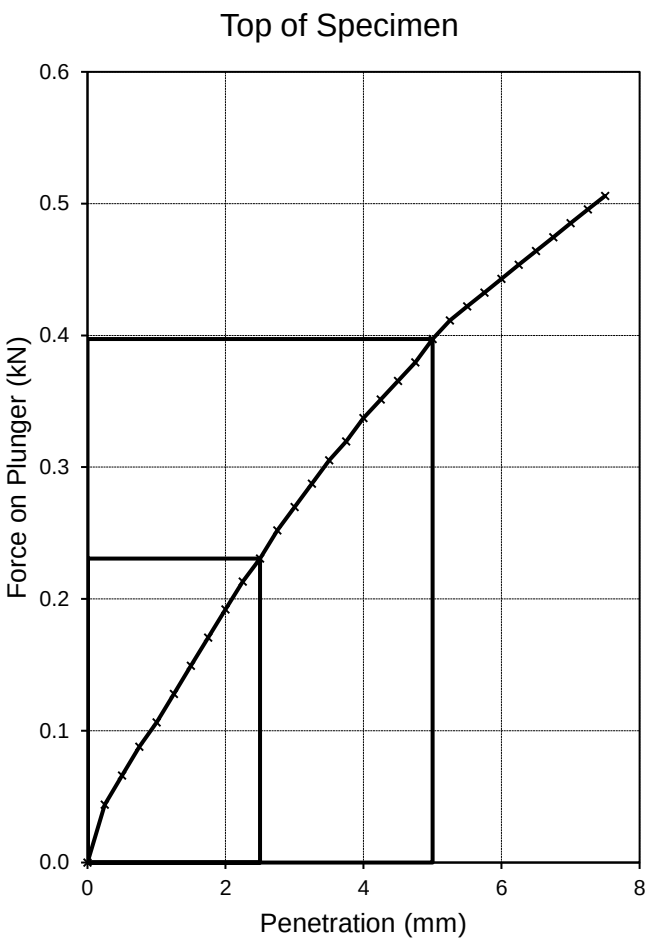
Description:

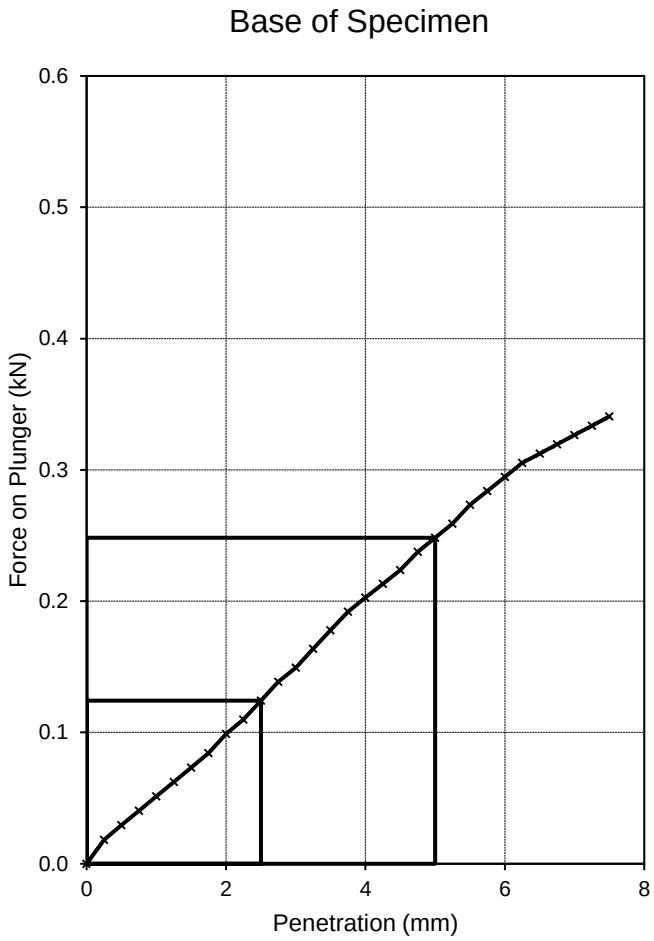
Dark brown sandy silty gravelly CLAY with rare cobbles.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.13 Mg/m³
Prepared dry density 1.85 Mg/m³
10.6 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	10 N	10 N
Water content	15 %	16 %
CBR Value	2.0 %	1.2 %





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COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP104
Sample Depth	2.10-2.50 m
Sample Type	LB

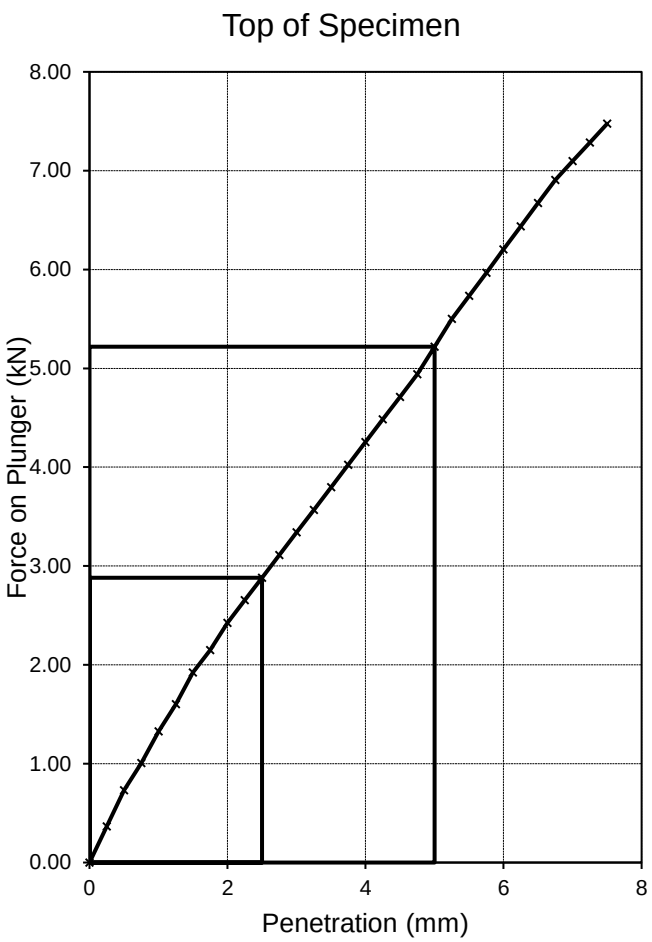
Description:

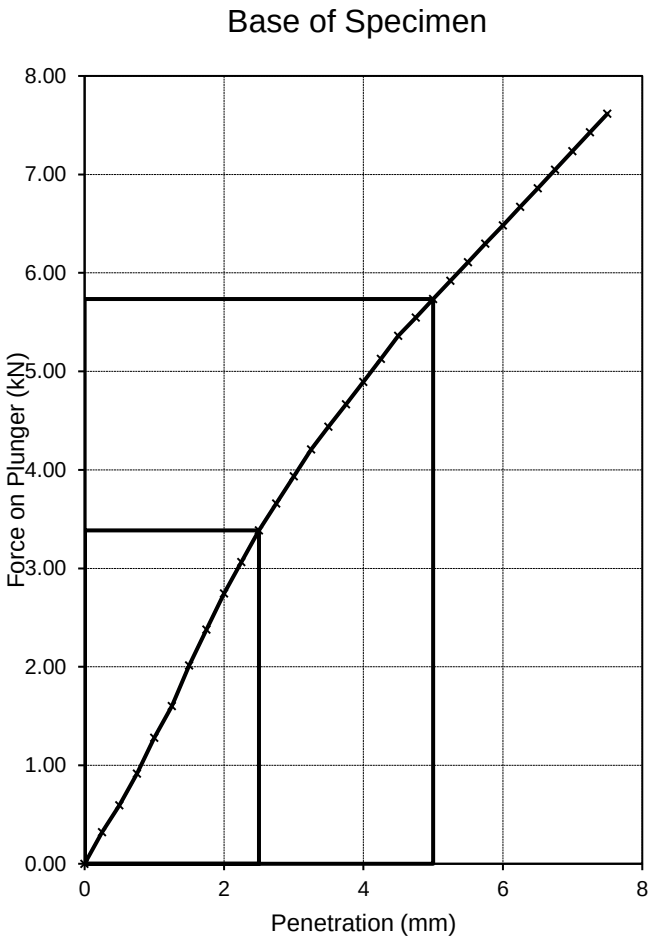
Dark brown mottled yellow sandy gravelly silty CLAY.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.30 Mg/m³
Prepared dry density 2.09 Mg/m³
1.6 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	50 N	50 N
Water content	10.0 %	10 %
CBR Value	26 %	29 %





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COLEG SIR GAR
C4103

GEOLABS
UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP105
Sample Depth	0.70-1.10 m
Sample Type	LB

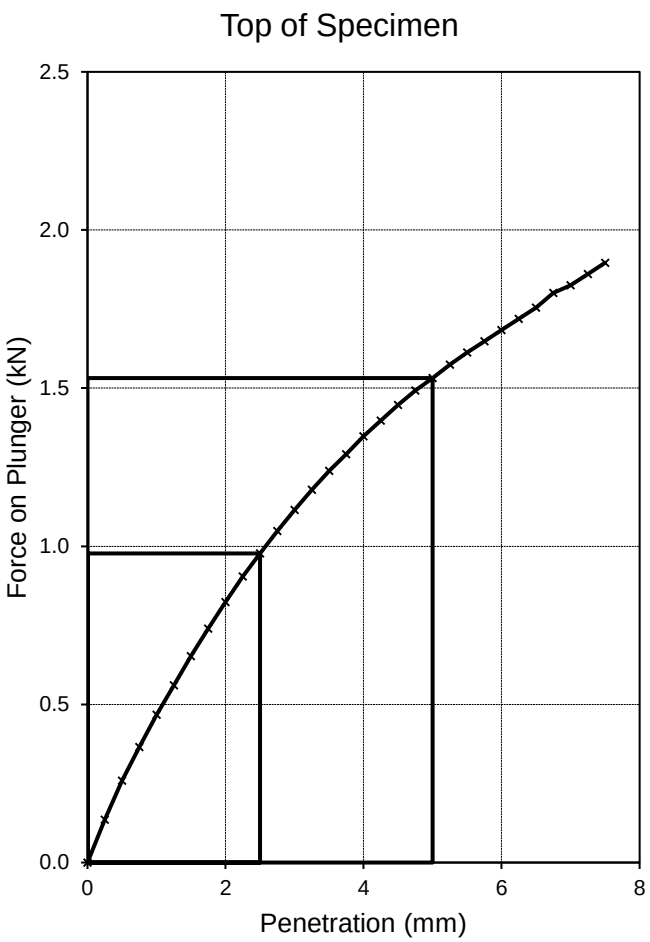
Description:

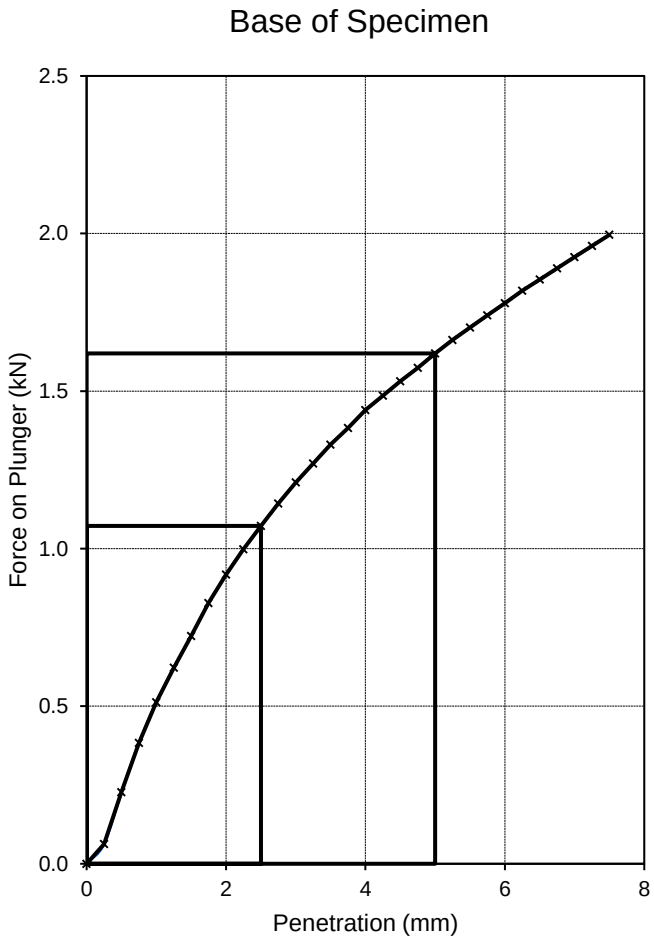
Yellowish brown slightly sandy slightly gravelly silty CLAY.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.04 Mg/m³
Prepared dry density 1.70 Mg/m³
0.0 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	50 N	50 N
Water content	20 %	20 %
CBR Value	7.7 %	8.1 %





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18/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP105
Sample Depth	2.20-2.50 m
Sample Type	LB

Description:

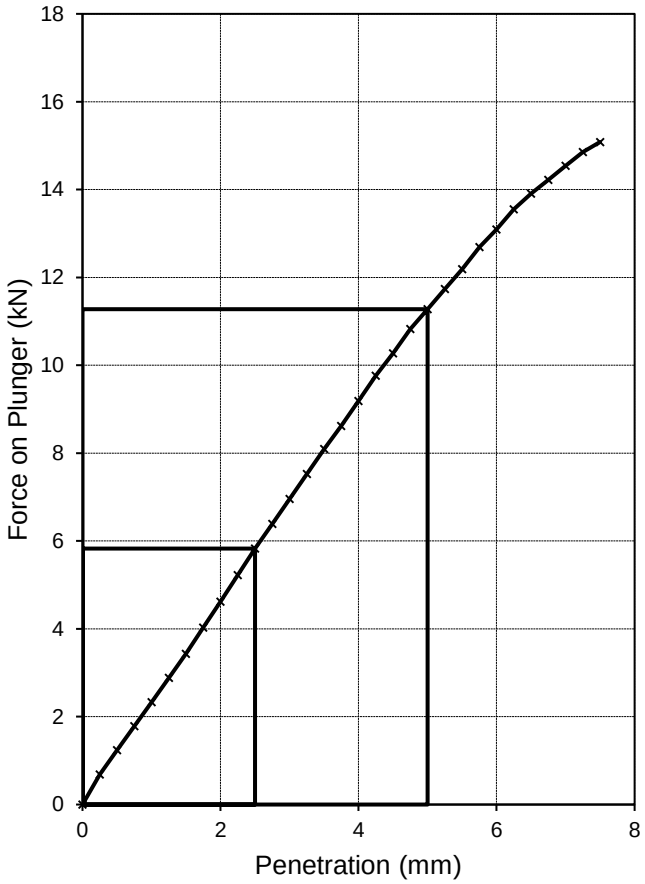
Dark brown sandy silty gravelly CLAY with rare cobbles.

PREPARATION DETAILS

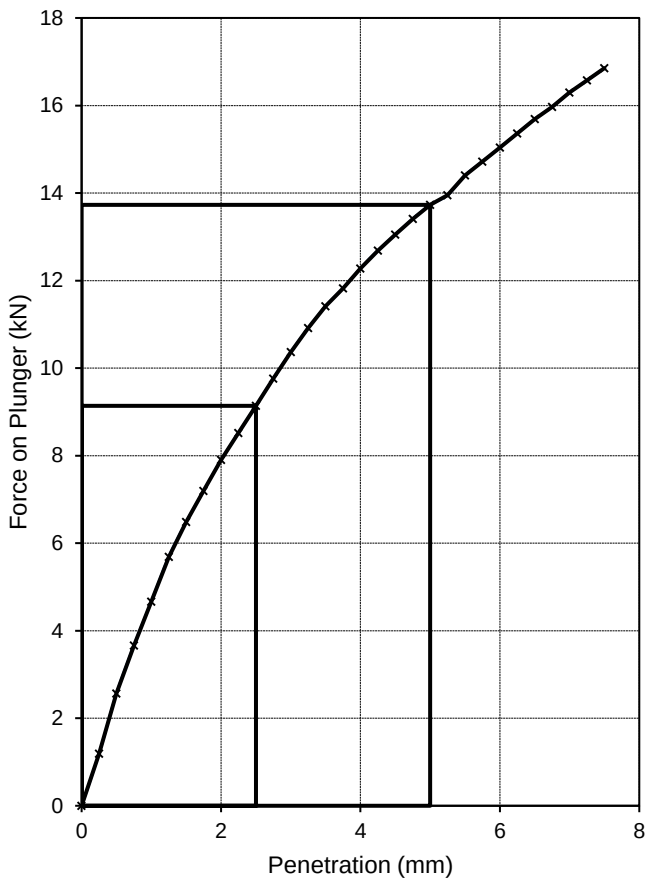
The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.30 Mg/m³
Prepared dry density 2.10 Mg/m³
12.3 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	250 N
Water content	10 %	9.8 %
CBR Value	56 %	69 %

Top of Specimen



Base of Specimen



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COLEG SIR GAR
C4103

GEOLABS

UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP106
Sample Depth	0.70-1.00 m
Sample Type	LB

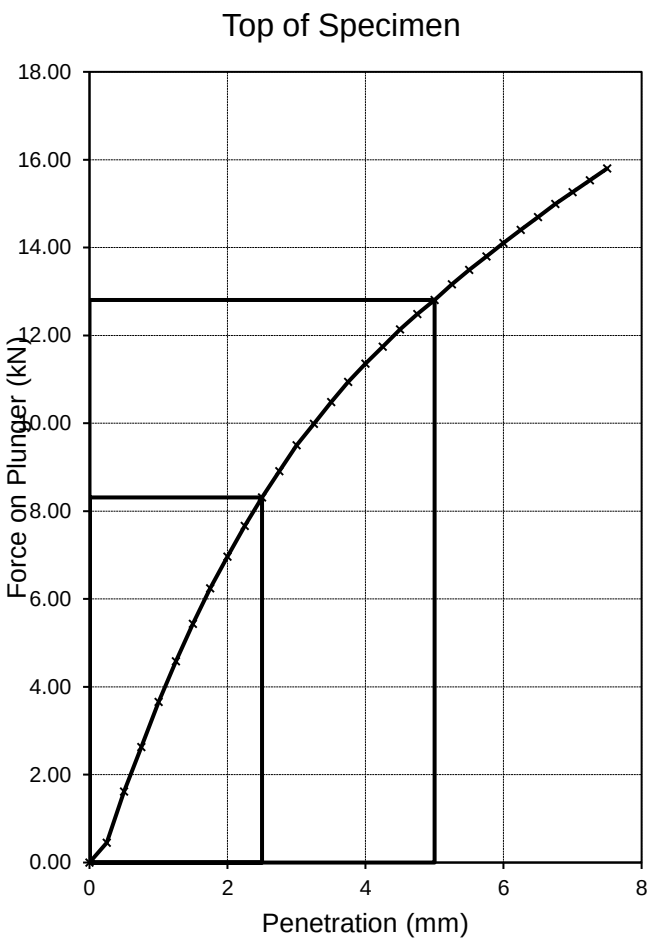
Description:

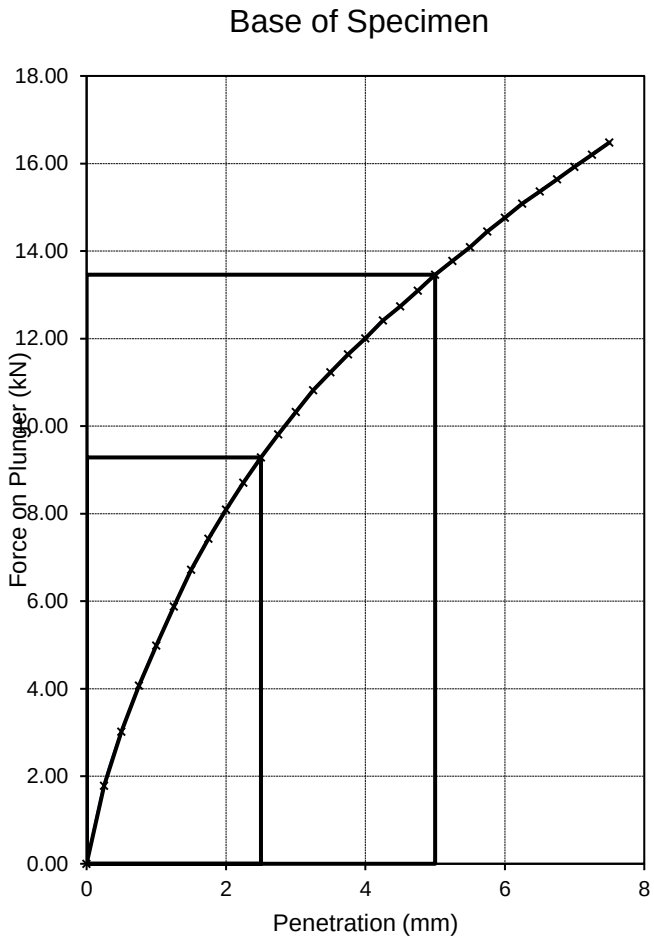
Dark brown mottled grey sandy gravelly silty CLAY.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 4.5 kg rammer
Prepared bulk density 2.13 Mg/m³
Prepared dry density 1.89 Mg/m³
5.8 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	250 N
Water content	13 %	13 %
CBR Value	64 %	70 %





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18/09/2024

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Project Name:

COLEG SIR GAR
C4103

GEOLABS
UKAS TESTING 1982

BS 1377-2 : 2022 : Clause 15

CALIFORNIA BEARING RATIO

Location	TP106
Sample Depth	2.00-2.50 m
Sample Type	LB

Description:

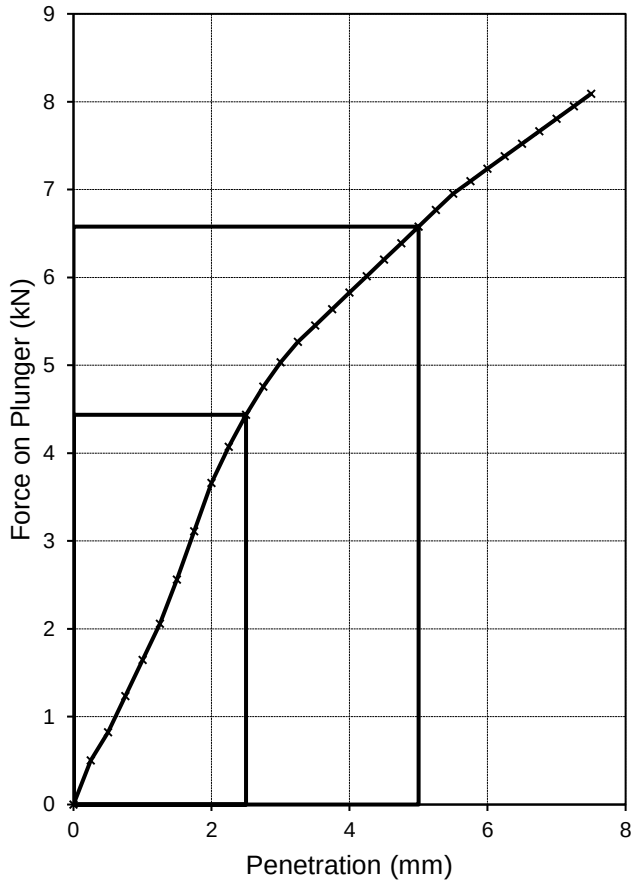
Dark grey mottled brown gravelly slightly sandy silty CLAY.

PREPARATION DETAILS

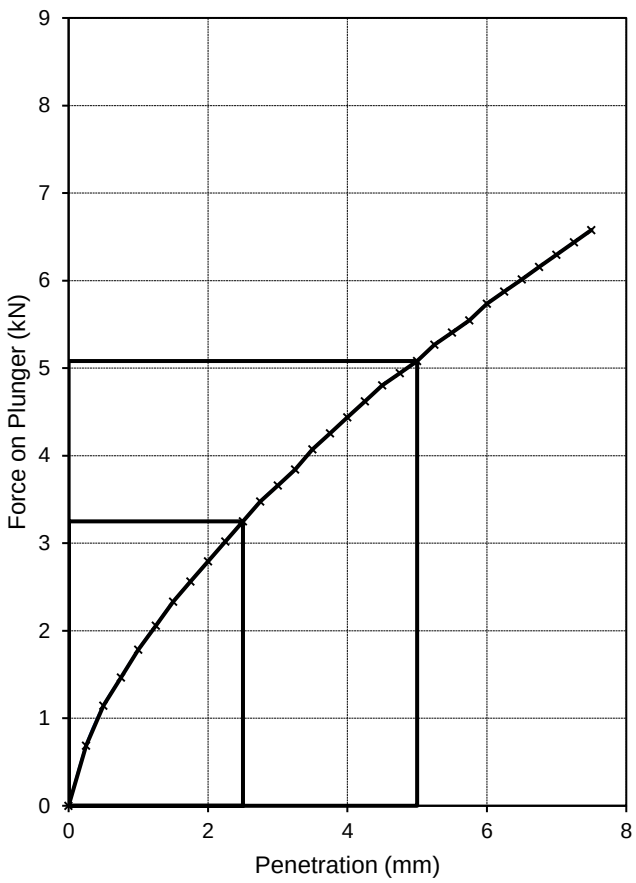
The specimen was tested in an unsoaked condition.
The specimen was tested at optimum water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.15 Mg/m³
Prepared dry density 1.96 Mg/m³
7.6 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	0.0 kg	0.0 kg
Seating load	250 N	50 N
Water content	9.6 %	9.9 %
CBR Value	34 %	25 %

Top of Specimen



Base of Specimen



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18/09/2024

Project Number:

GEO / 41089

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COLEG SIR GAR
C4103

GEOLABS
UKAS TESTING 1982

SHEAR STRENGTH BY VANE METHODS

Location	Depth m	Sample Ref	Specimen Ref / Depth (m)	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Laboratory Vane - Peak BS 1377-2 : 2022 : 24 kPa	Laboratory Vane - Remoulded BS 1377-2 : 2022 : 24 kPa	Torvane kPa	Pilcon Hand Vane kPa	Pocket Penetrometer kPa
SA201	0.80-1.10			LB	Brown slightly sandy gravelly silty CLAY with rare roots and cobbles.	13.5				93	
SA203	0.70-1.00			LB	Dark grey slightly sandy slightly gravelly silty CLAY.	20.1				35	
SA204	0.60-1.00			LB	Grey mottled brown slightly sandy silty CLAY.	18.6				37	
SA205	0.40-0.60			LB	Dark brown sandy silty clayey GRAVEL with occasional cobbles and	16.3				95	
TP105	0.70-1.10			LB	Yellowish brown slightly sandy slightly gravelly silty CLAY.	20.2				93	
TP105	2.20-2.50			LB	Dark brown sandy silty gravelly CLAY with rare cobbles.	14.1				91	

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/09/2024

Project Number:

GEO / 41089

Project Name:

COLEG SIR GAR
C4103

GEOLABS

Appendix VI

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA201

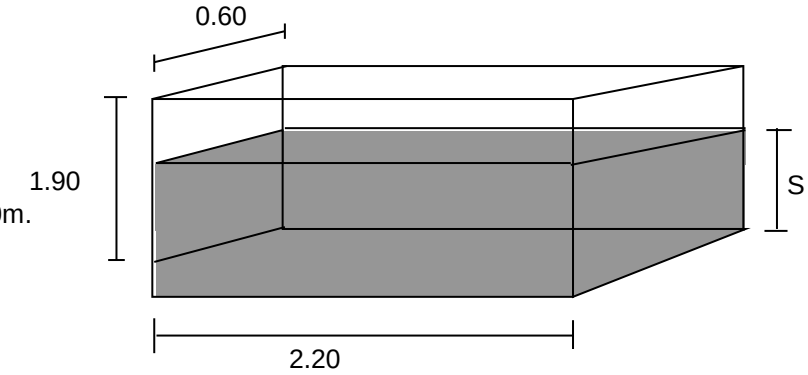
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	MADE GROUND: Grass over dark brown black clayey gravelly sand.
0.30	0.70	MADE GROUND: Dark brown sandy gravelly clay.
0.70	1.90	Soft yellowish brown slightly sandy slightly gravelly silty CLAY.

Sketch plan of test zone

Not to scale
All dimensions in metres.

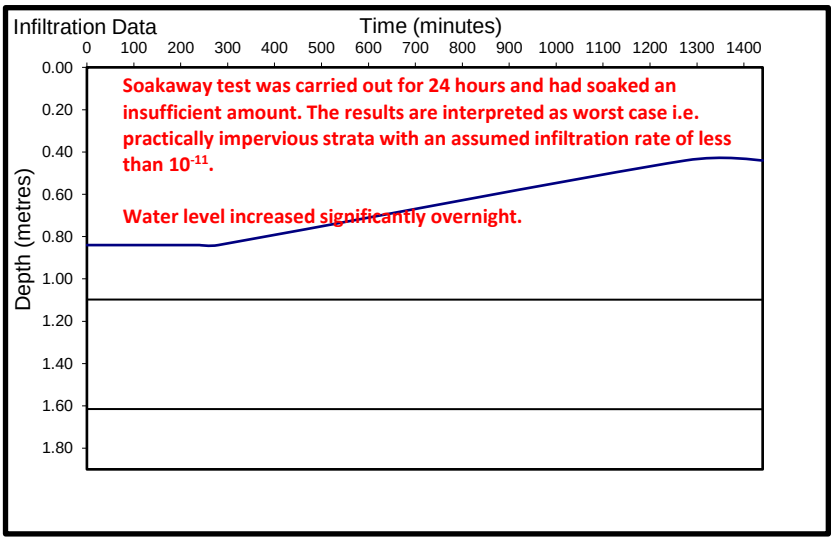
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.84 to 1.90m.
No groundwater was encountered



Gives the Figures

S=	1.06	m
a_{p50}=	4.29	m^2
V_{p75-25}=	0.70	m^3

Soakaway Test Run 1 Test Date: 13/08/2024



Time (minutes)	Depth (m)
0	0.84
2	0.84
4	0.84
6	0.84
10	0.84
20	0.84
40	0.84
60	0.84
90	0.84
120	0.84
180	0.84
240	0.84
280	0.84
1276	0.44
1440	0.44

From the above graph,

t_{p75}= N/A (min) $t_{p25=}$ N/A (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = N/A f_{run1}= N/A m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

hsp consulting

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA202

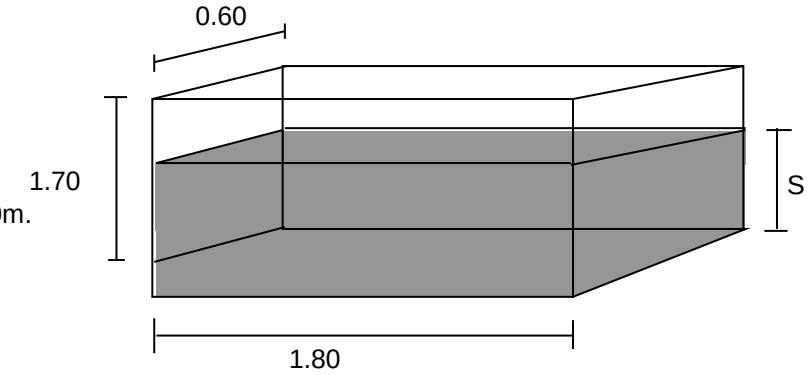
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.35	Grass over dark brown sandy slightly gravelly CLAY (TOPSOIL).
0.35	1.30	Firm yellow brown mottled grey slightly sandy slightly gravelly CLAY.
1.30	1.70	Firm yellow / orange brown mottled grey slightly sandy slightly gravelly CLAY

Sketch plan of test zone

Not to scale
All dimensions in metres.

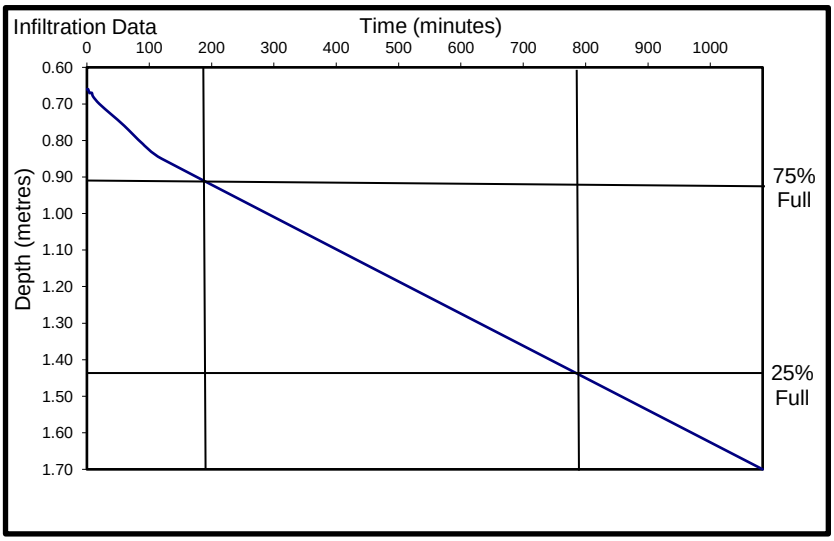
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.66 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	1.04	m
a_{p50}=	3.58	m^2
V_{p75-25}=	0.56	m^3

Soakaway Test Run 1 Test Date: 13/08/2024



Time (minutes)	Depth (m)
0	0.66
2	0.66
4	0.67
6	0.67
8	0.67
10	0.68
20	0.70
40	0.73
60	0.76
90	0.81
120	0.85
1084	1.70

From the above graph,

t_{p75}= 180 (min) $t_{p25=}$ 780 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 4.36E-06 f_{run1}= 4.36×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

hsp consulting

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA202

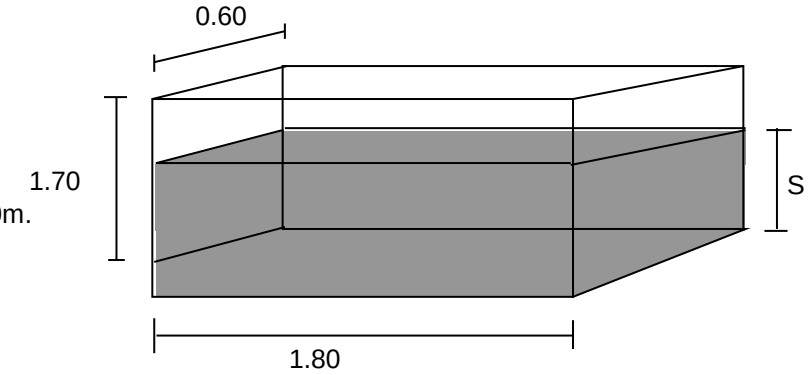
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.35	Grass over dark brown sandy slightly gravelly CLAY (TOPSOIL).
0.35	1.30	Firm yellow brown mottled grey slightly sandy slightly gravelly CLAY.
1.30	1.70	Firm yellow / orange brown mottled grey slightly sandy slightly gravelly CLAY

Sketch plan of test zone

Not to scale
All dimensions in metres.

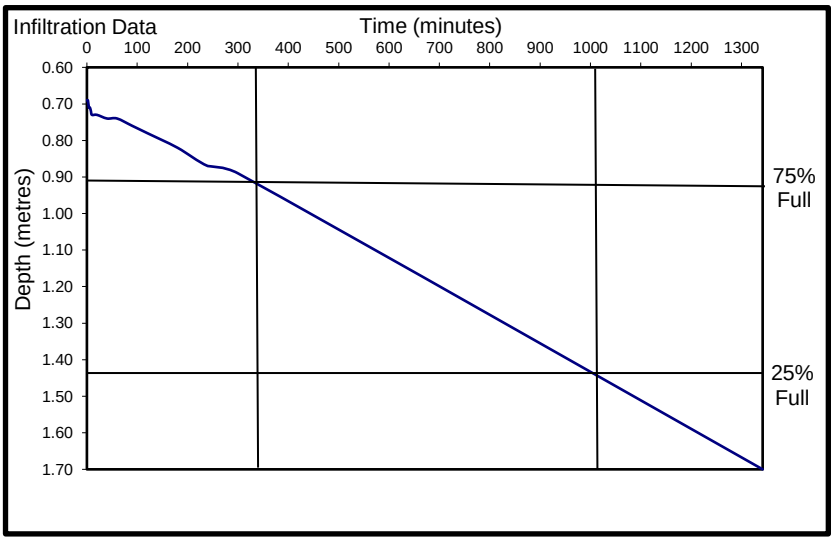
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.69 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	1.01	m
a_{p50}=	3.50	m^2
V_{p75-25}=	0.55	m^3

Soakaway Test Run 2 **Test Date: 14/08/2024**



Time (minutes)	Depth (m)
0	0.69
2	0.69
4	0.71
6	0.71
8	0.72
10	0.73
20	0.73
40	0.74
60	0.74
90	0.76
120	0.78
180	0.82
240	0.87
300	0.89
1342	1.70

From the above graph,

t_{p75}= 330 (min) $t_{p25=}$ 1010 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 3.81E-06 f_{run1}= 3.85×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

hsp consulting

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA202

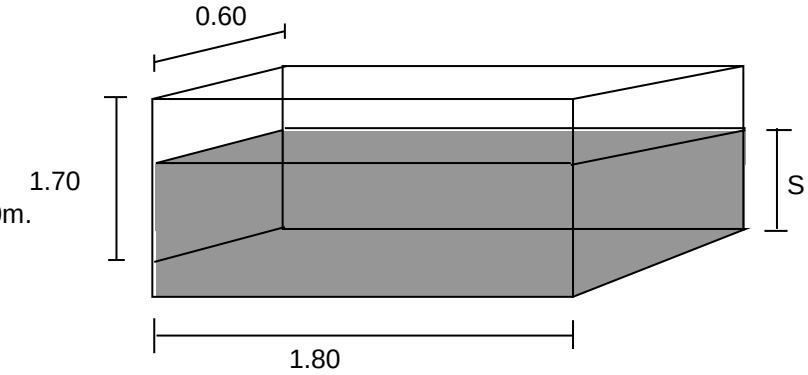
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.35	Grass over dark brown sandy slightly gravelly CLAY (TOPSOIL).
0.35	1.30	Firm yellow brown mottled grey slightly sandy slightly gravelly CLAY.
1.30	1.70	Firm yellow / orange brown mottled grey slightly sandy slightly gravelly CLAY

Sketch plan of test zone

Not to scale
All dimensions in metres.

porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.68 to 1.70m.
No groundwater was encountered



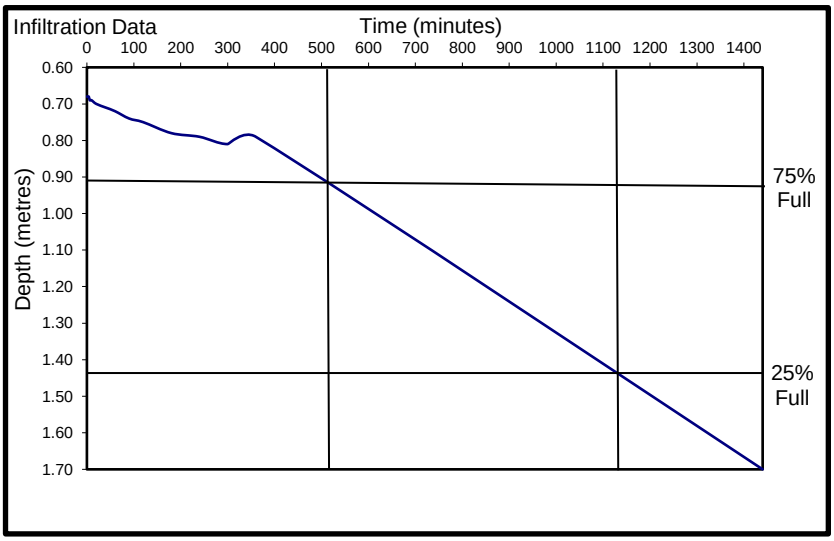
Gives the Figures

S= 1.02 m

a_{p50}= 3.53 m^2

V_{p75-25}= 0.55 m^3

Soakaway Test Run 3 **Test Date: 15/08/2024**



Time (minutes)	Depth (m)
0	0.68
2	0.68
4	0.68
6	0.69
8	0.69
10	0.69
20	0.70
40	0.71
60	0.72
90	0.74
120	0.75
180	0.78
240	0.79
300	0.81
360	0.79
1440	1.70

From the above graph,

t_{p75}= 510 (min) $t_{p25=}$ 1125 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 4.23E-06 f_{run1}= 4.26×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA203

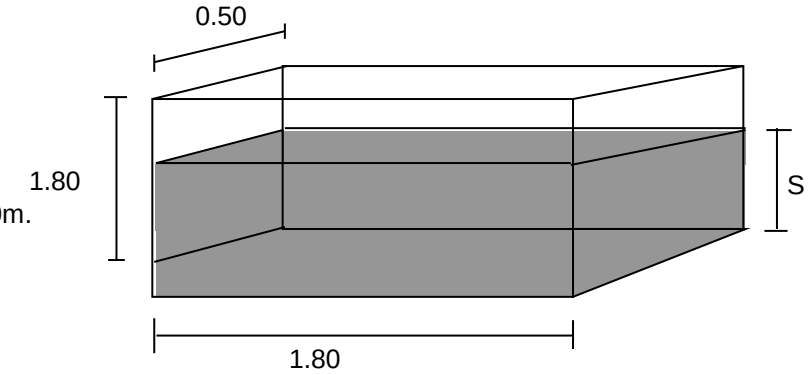
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	Grass overlying brown sandy slightly gravelly CLAY (TOPSOIL)
0.30	0.70	Soft to firm brown slightly sandy gravelly CLAY
0.70	1.80	Soft to firm grey with orange brownslightly sandy slightly gravelly silty CLAY.

Sketch plan of test zone

Not to scale
All dimensions in metres.

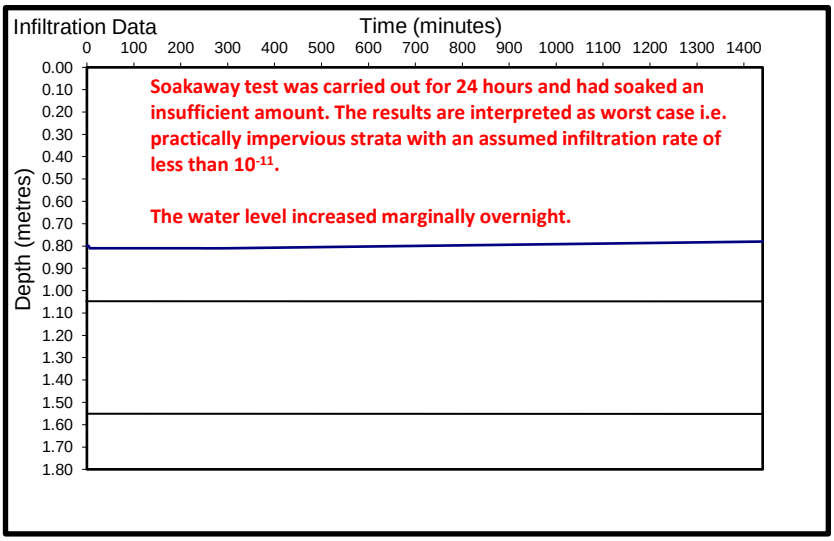
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.80 to 1.80m.
No groundwater was encountered.



Gives the Figures

S=	1.00	m
a_{p50}=	3.20	m^2
V_{p75-25}=	0.45	m^3

Soakaway Test Run 1 Test Date: 14/08/2024



Time (minutes)	Depth (m)
0	0.80
2	0.80
4	0.80
6	0.81
8	0.81
10	0.81
20	0.81
40	0.81
60	0.81
90	0.81
120	0.81
180	0.81
240	0.81
300	0.81
1440	0.78

From the above graph,

t_{p75}= N/A (min) $t_{p25=}$ N/A (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$

f_{run1}= _____ m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA204

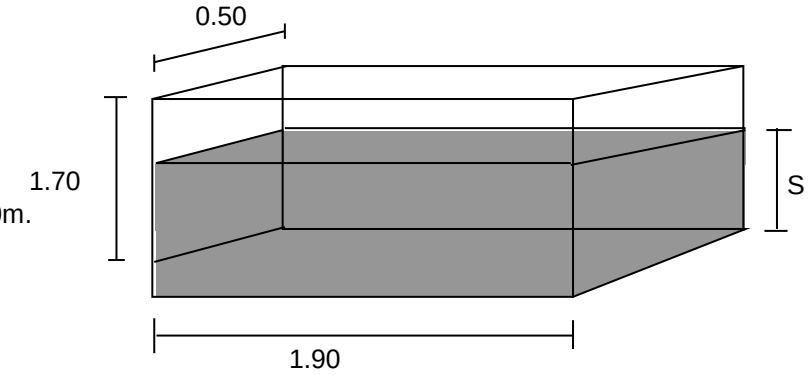
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.25	Grass overlying brown sandy slightly gravelly CLAY (TOPSOIL)
0.25	0.60	Soft pale grey / orange sandy silty CLAY
0.60	1.40	Firm orange brown with grey sandy gravelly CLAY.

Sketch plan of test zone

Not to scale
All dimensions in metres.

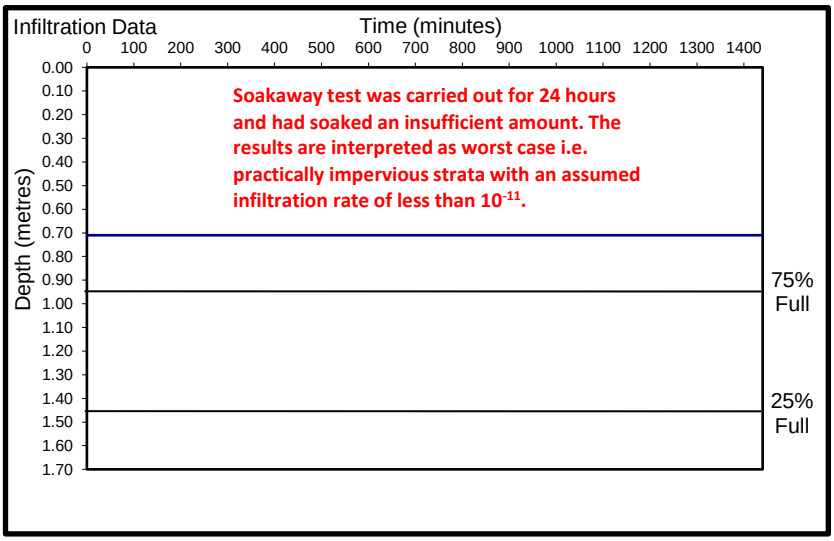
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.71 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	0.99	m
a_{p50}=	3.33	m^2
V_{p75-25}=	0.47	m^3

Soakaway Test Run 1 Test Date: 14/08/2024



Time (minutes)	Depth (m)
0	0.71
2	0.71
4	0.71
6	0.71
8	0.71
10	0.71
20	0.71
40	0.71
60	0.71
90	0.71
120	0.71
180	0.71
240	0.71
300	0.71
1440	0.71

From the above graph,

t_{p75}= N/A (min) $t_{p25=}$ N/A (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = f_{run1}= _____ m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA205

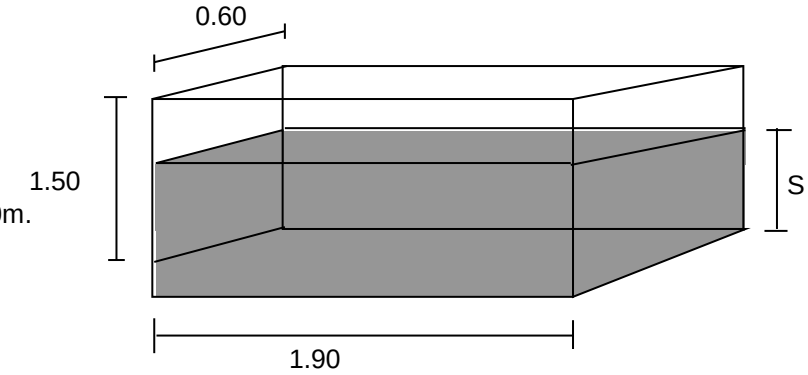
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	Grass overlying brown sandy slightly gravelly CLAY (TOPSOIL)
0.30	0.70	Dark brown slightly sandy CLAY
0.70	1.50	Soft light brownish grey slightly gravelly sandy CLAY.

Sketch plan of test zone

Not to scale
All dimensions in metres.

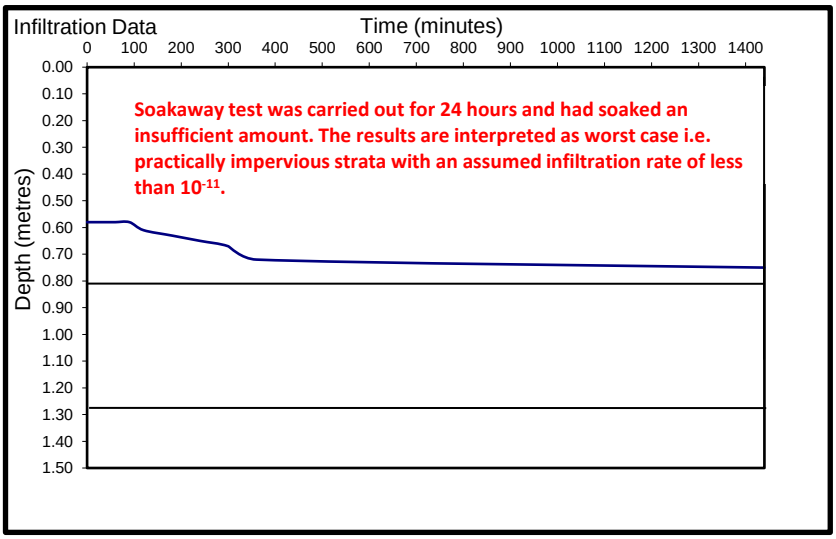
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.58 to 1.50m.
No groundwater was encountered



Gives the Figures

S=	0.92	m
a_{p50}=	3.44	m^2
V_{p75-25}=	0.52	m^3

Soakaway Test Run 1 Test Date: 14/08/2024



Time (minutes)	Depth (m)
0	0.58
2	0.58
4	0.58
6	0.58
8	0.58
10	0.58
20	0.58
40	0.58
60	0.58
90	0.58
120	0.61
180	0.63
240	0.65
300	0.67
360	0.72
1440	0.75

From the above graph,

t_{p75}= N/A (min) $t_{p25=}$ N/A (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = f_{run1}= _____ m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA206

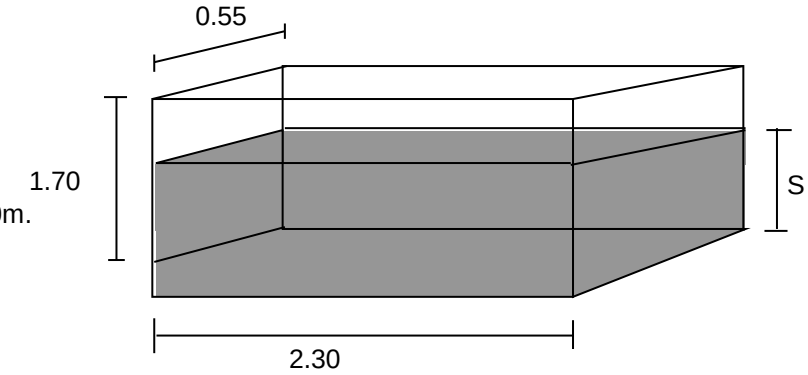
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.40	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clay (topsoil).
0.40	0.70	MADE GROUND: Orange yellow brown sandy slightly gravelly clay.
0.70	1.70	MADE GROUND: Reworked weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

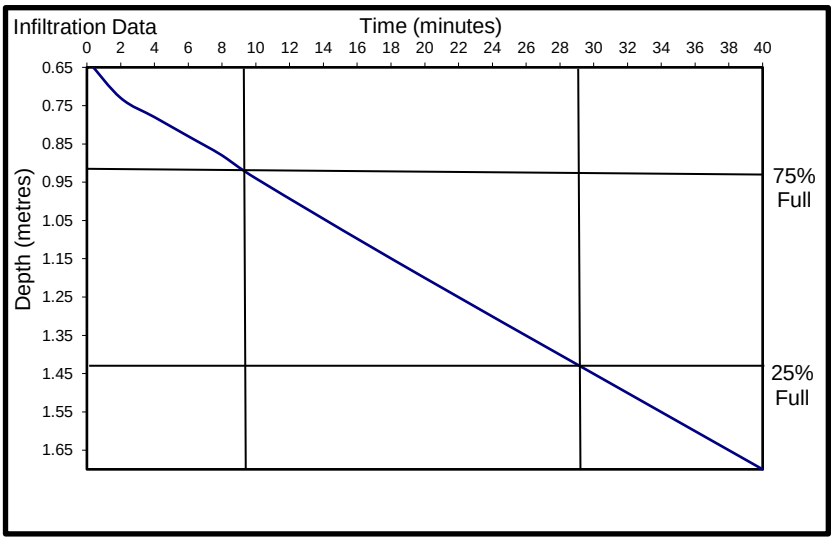
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.63 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	1.07	m
a_{p50}=	4.31	m^2
V_{p75-25}=	0.68	m^3

Soakaway Test Run 1 Test Date: 13/08/2024



Time (minutes)	Depth (m)
0	0.63
2	0.73
4	0.78
6	0.83
8	0.88
10	0.94
20	1.20
40	1.70

From the above graph,

t_{p75}= 9 (min) $t_{p25=}$ 29 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 5.49E-05 f_{run1}= 5.49×10^{-5} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA206

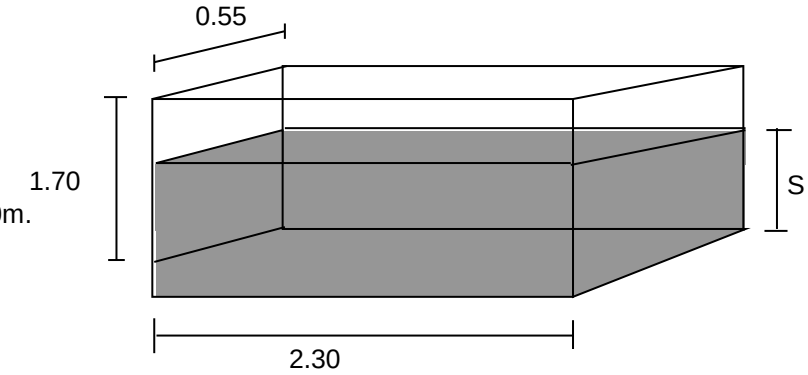
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.40	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clay (topsoil).
0.40	0.70	MADE GROUND: Orange yellow brown sandy slightly gravelly clay.
0.70	1.70	MADE GROUND: Reworked weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

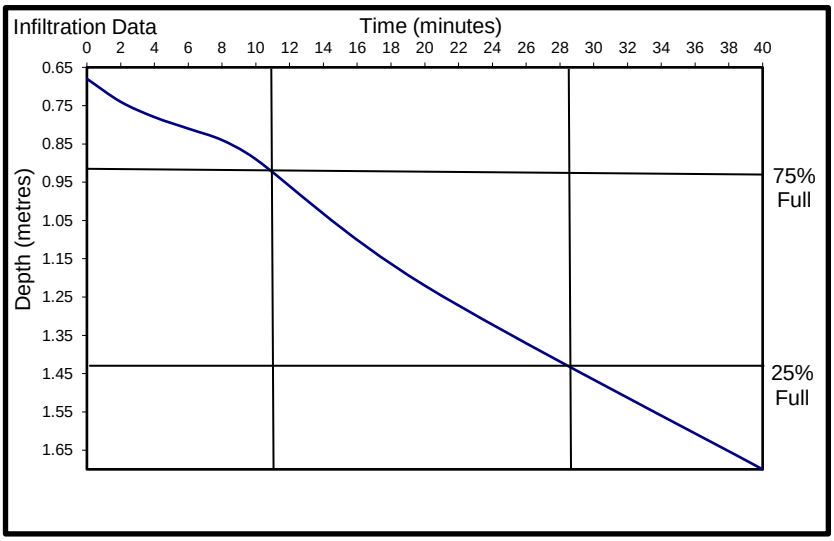
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.68 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	1.02	m
a_{p50}=	4.17	m^2
V_{p75-25}=	0.65	m^3

Soakaway Test Run 2 **Test Date: 13/08/2024**



Time (minutes)	Depth (m)
0	0.68
2	0.74
4	0.78
6	0.81
8	0.84
10	0.89
20	1.22
40	1.70

From the above graph,

t_{p75}= 11 (min) $t_{p25=}$ 28.5 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 6.19E-05 f_{run1}= 6.19×10^{-5} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA206

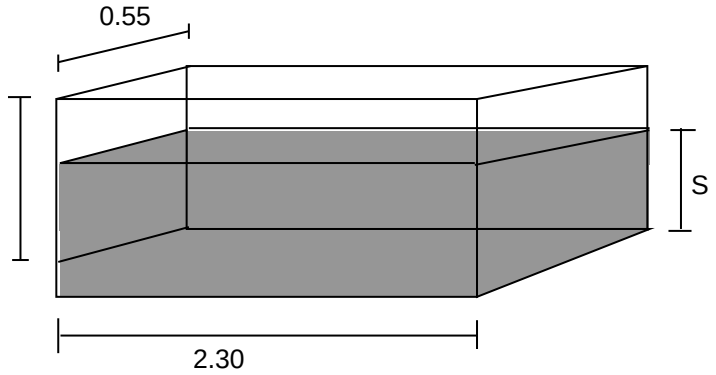
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.40	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clay (topsoil).
0.40	0.70	MADE GROUND: Orange yellow brown sandy slightly gravelly clay.
0.70	1.70	MADE GROUND: Reworked weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

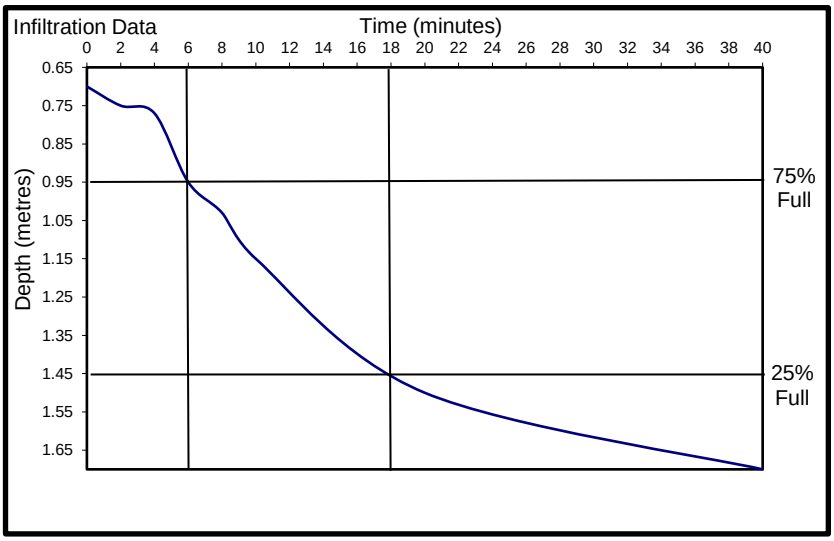
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m) 1.70
Water level from 0.70 to 1.70m.
No groundwater was encountered



Gives the Figures

S=	1.00	m
a_{p50}=	4.12	m^2
V_{p75-25}=	0.63	m^3

Soakaway Test Run 3 Test Date: 14/08/2024



Time (minutes)	Depth (m)
0	0.70
2	0.75
4	0.77
6	0.95
8	1.03
10	1.15
20	1.50
40	1.70

From the above graph,

t_{p75}= 6 (min) $t_{p25=}$ 17.75 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 9.16E-05 f_{run1}= 9.16×10^{-5} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA207

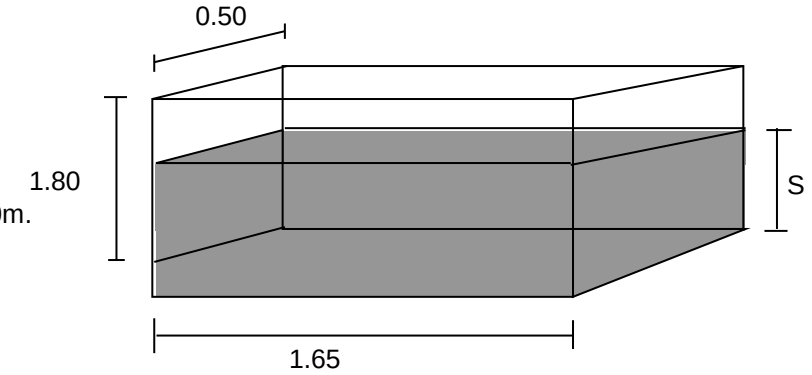
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.15	MADE GROUND: Grass shrub overlaying dark brown sandy gravelly clay (topsoil)
0.15	0.35	MADE GROUND: Dark brown sandy gravelly clay.
0.35	0.70	MADE GROUND: Light brown slightly sandy slightly gravelly clay.
0.70	1.80	MADE GROUND: Weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

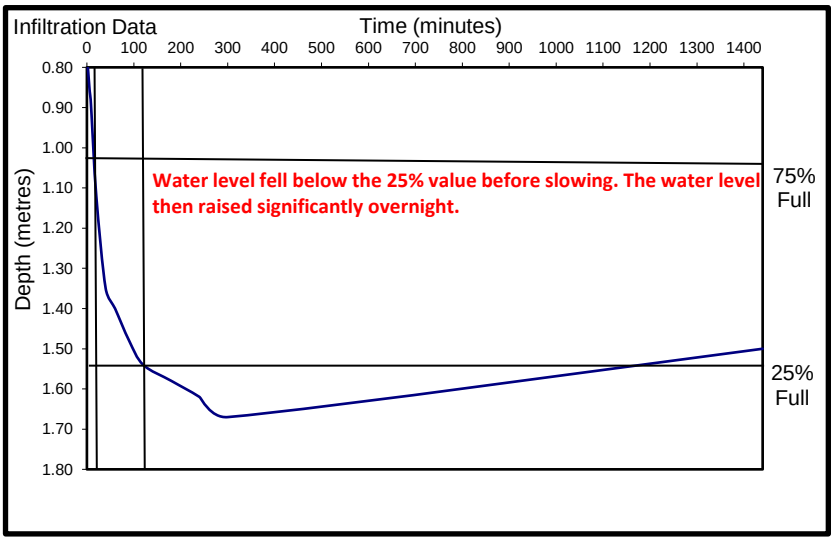
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.78 to 1.80m.
Groundwater was
encountered at 1.80m



Gives the Figures

S=	1.02	m
a_{p50}=	3.02	m^2
V_{p75-25}=	0.42	m^3

Soakaway Test Run 1 Test Date: 13/08/2024



Time (minutes)	Depth (m)
0	0.78
2	0.80
4	0.83
6	0.86
8	0.88
10	0.92
20	1.12
40	1.35
60	1.40
90	1.48
120	1.54
180	1.58
240	1.62
300	1.67
1440	1.50

From the above graph,

t_{p75}= 15 (min) $t_{p25=}$ 120 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 9.29E-06 f_{run1}= 9.29×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

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INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA207

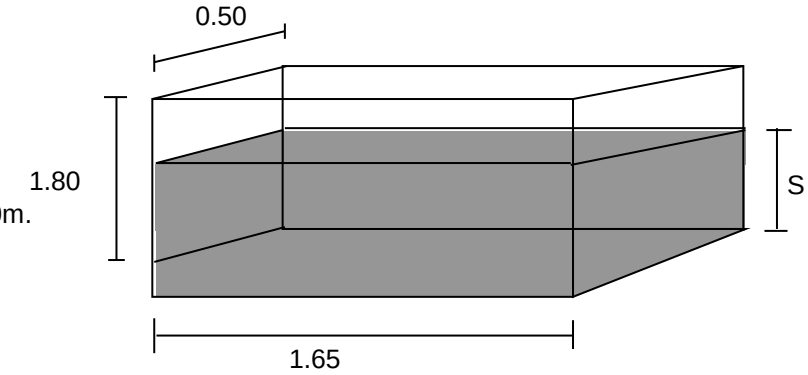
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.15	MADE GROUND: Grass shrub overlaying dark brown sandy gravelly clay (topsoil)
0.15	0.35	MADE GROUND: Dark brown sandy gravelly clay.
0.35	0.70	MADE GROUND: Light brown slightly sandy slightly gravelly clay.
0.70	1.80	MADE GROUND: Weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

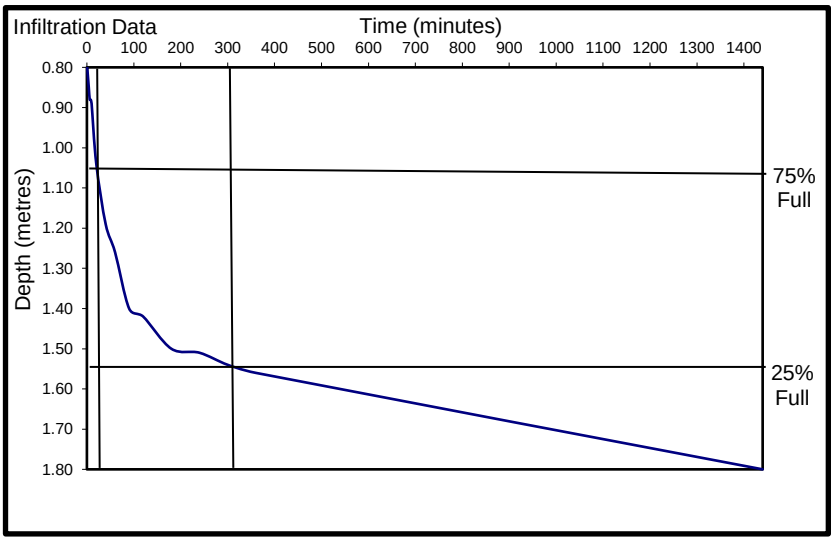
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.79 to 1.80m.
No groundwater was encountered



Gives the Figures

S=	1.01	m
a_{p50}=	3.00	m^2
V_{p75-25}=	0.42	m^3

Soakaway Test Run 2 Test Date: 14/08/2024



Time (minutes)	Depth (m)
0	0.79
2	0.82
4	0.85
6	0.88
8	0.88
10	0.89
20	1.04
40	1.19
60	1.26
90	1.40
120	1.42
180	1.50
240	1.51
300	1.54
360	1.56
1440	1.80

From the above graph,

t_{p75}= 20 (min) $t_{p25=}$ 300 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 3.48E-06 f_{run1}= 3.48×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

hsp consulting

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: SA207

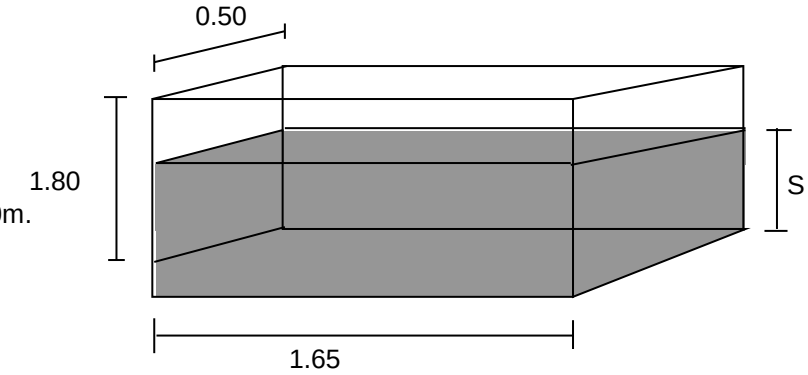
Soil Profile:

Depth (m) From:	To:	Description
0.00	0.15	MADE GROUND: Grass shrub overlaying dark brown sandy gravelly clay (topsoil)
0.15	0.35	MADE GROUND: Dark brown sandy gravelly clay.
0.35	0.70	MADE GROUND: Light brown slightly sandy slightly gravelly clay.
0.70	1.80	MADE GROUND: Weathered mudstone, dark grey slightly sandy clayey gravels.

Sketch plan of test zone

Not to scale
All dimensions in metres.

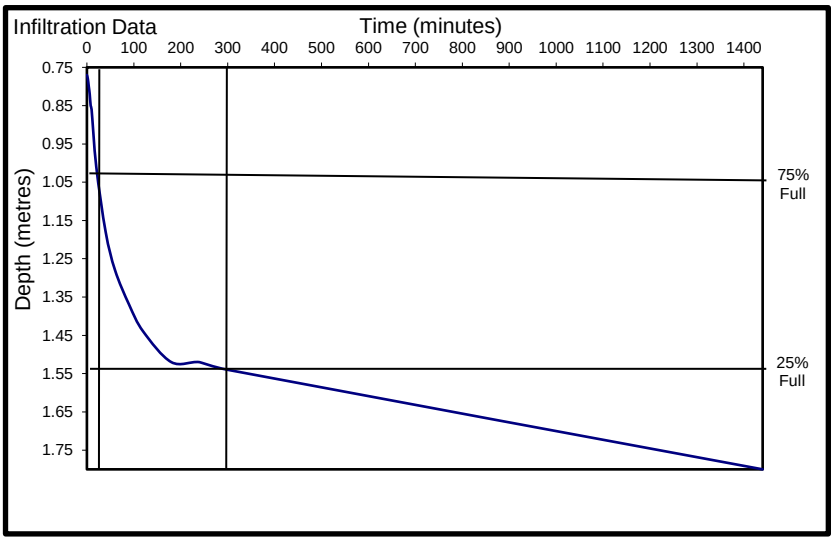
porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m)
Water level from 0.77 to 1.80m.
No groundwater was encountered.



Gives the Figures

S=	1.03	m
a_{p50}=	3.04	m^2
V_{p75-25}=	0.42	m^3

Soakaway Test Run 3 Test Date: 15/08/2024



Time (minutes)	Depth (m)
0	0.77
2	0.78
4	0.80
6	0.82
8	0.85
10	0.86
20	1.01
40	1.18
60	1.28
90	1.37
120	1.44
180	1.52
240	1.52
300	1.54
1440	1.80

From the above graph,

t_{p75}= 20 (min) $t_{p25=}$ 300 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 3.49E-06 f_{run1}= 3.49×10^{-6} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No: C4103
Site: Coleg Sir Gar
Client: WEPCo

hsp consulting

Appendix VII

Hixtra Ltd
Unit 103, Caxton Court
Garamonde Drive
Milton Keynes
MK8 8DD

Certificate for the Determination of the Vertical Deformation and Strength Characteristics of Soil by the Incremental Plate Loading Test to BS 1377: Part 9: 1990

Report No: 12240-1
Report Date: 15/08/2024
Client: HSP Consulting Engineers Ltd
Address: Lawrence House
6 Meadowbank Way
Eastwood, Nottingham
NG16 3SB
Site: Coleg Sir Gar, Pibwrlwyd Ln, Carmarthen, SA31 2NH

Test Details

Test Location: 1
Date of Test: 15/08/2024
Description: Brown CLAY
Reaction Load: 8 Tonne Excavator
Material Class: Formation
Weather: Light Rain
Layer: 0.4m BGL
Plate Diameter (mm): 295
Condition: The results apply only to the location tested and the material was tested in an 'as found' condition

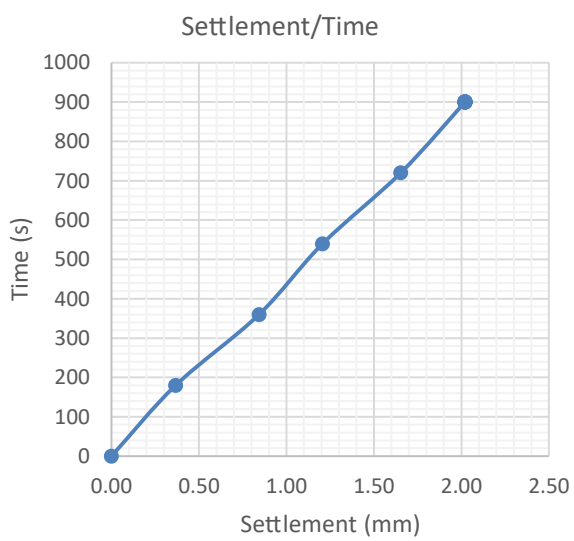
Test Results

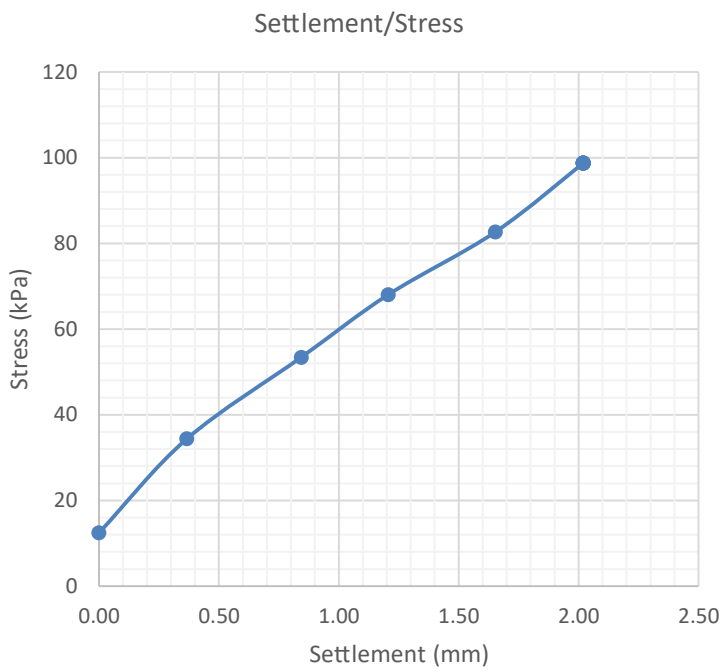
Deviations: No deviations from the test method were employed.

Time, s	Settlement, mm	Plate Stress, kPa
0	0.00	12
180	0.37	34
360	0.84	53
540	1.21	68
720	1.65	83
900	2.02	99

Maximum Applied Stress (kPa):	99
Maximum Settlement (mm):	2.02
Equivalent CBR Value (%):	2
Modulus of Subgrade Reaction, k_{762} (MN/m^2/m):	24

Note: Supplemental test method, calculation of Nominal CBR Value and Modulus of Subgrade Reaction: IAN 73/06 revision 1 (2009), HD 25/94 (withdrawn)





For and on behalf of Hixtra Ltd

Kevin Shorthouse
Authorised signatory

UKAS TESTING
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Hixtra Ltd
Unit 103, Caxton Court
Garamonde Drive
Milton Keynes
MK8 8DD

Certificate for the Determination of the Vertical Deformation and Strength Characteristics of Soil by the Incremental Plate Loading Test to BS 1377: Part 9: 1990

Report No: 12240-2
Report Date: 15/08/2024
Client: HSP Consulting Engineers Ltd
Address: Lawrence House
6 Meadowbank Way
Eastwood, Nottingham
NG16 3SB
Site: Coleg Sir Gar, Pibwrlwyd Ln, Carmarthen, SA31 2NH

Test Details

Test Location: CBR 03
Date of Test: 15/08/2024
Description: Brown CLAY
Reaction Load: 8 Tonne Excavator
Material Class: Formation
Weather: Light Rain
Layer: 0.5m BGL
Plate Diameter (mm): 295
Condition: The results apply only to the location tested and the material was tested in an 'as found' condition

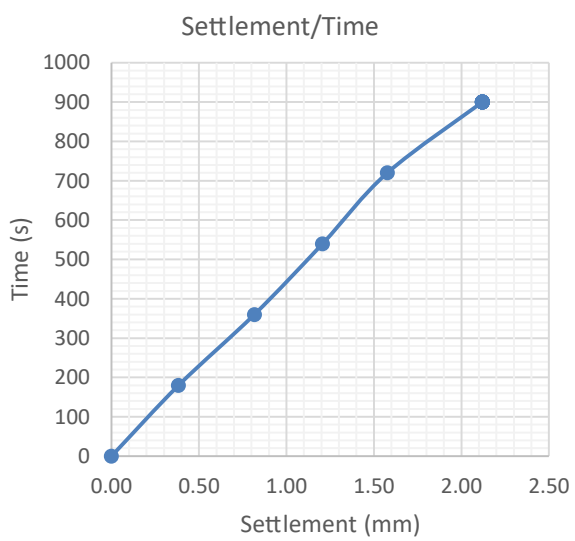
Test Results

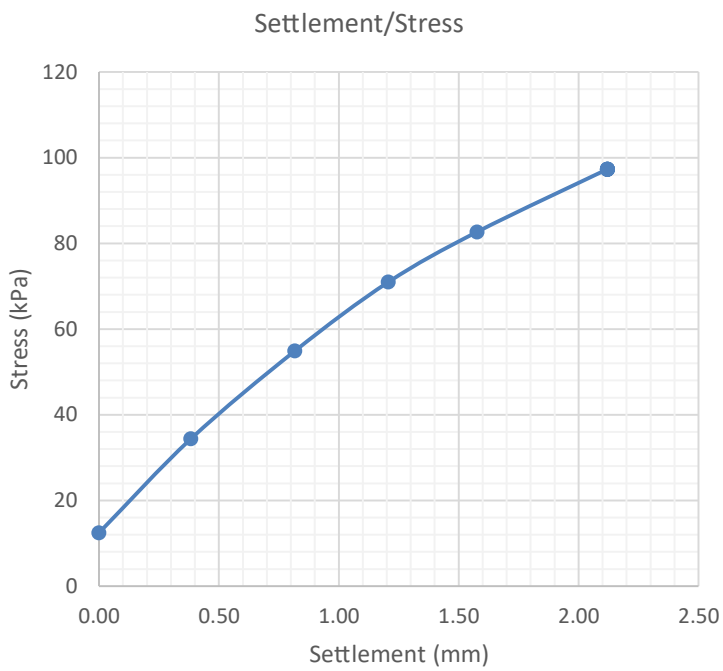
Deviations: No deviations from the test method were employed.

Time, s	Settlement, mm	Plate Stress, kPa
0	0.00	12
180	0.38	34
360	0.82	55
540	1.21	71
720	1.58	83
900	2.12	97

Maximum Applied Stress (kPa):	97
Maximum Settlement (mm):	2.12
Equivalent CBR Value (%):	3
Modulus of Subgrade Reaction, k_{762} (MN/m^2/m):	25

Note: Supplemental test method, calculation of Nominal CBR Value and Modulus of Subgrade Reaction: IAN 73/06 revision 1 (2009), HD 25/94 (withdrawn)





For and on behalf of Hixtra Ltd

Kevin Shorthouse
Authorised signatory

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Hixtra Ltd
Unit 103, Caxton Court
Garamonde Drive
Milton Keynes
MK8 8DD

Certificate for the Determination of the Vertical Deformation and Strength Characteristics of Soil by the Incremental Plate Loading Test to BS 1377: Part 9: 1990

Report No: 12240-3
Report Date: 15/08/2024
Client: HSP Consulting Engineers Ltd
Address: Lawrence House
6 Meadowbank Way
Eastwood, Nottingham
NG16 3SB
Site: Coleg Sir Gar, Pibwrlwyd Ln, Carmarthen, SA31 2NH

Test Details

Test Location: CBR 02
Date of Test: 15/08/2024
Description: Brown CLAY
Reaction Load: 8 Tonne Excavator
Material Class: Formation
Weather: Overcast
Layer: 0.5m BGL
Plate Diameter (mm): 295
Condition: The results apply only to the location tested and the material was tested in an 'as found' condition

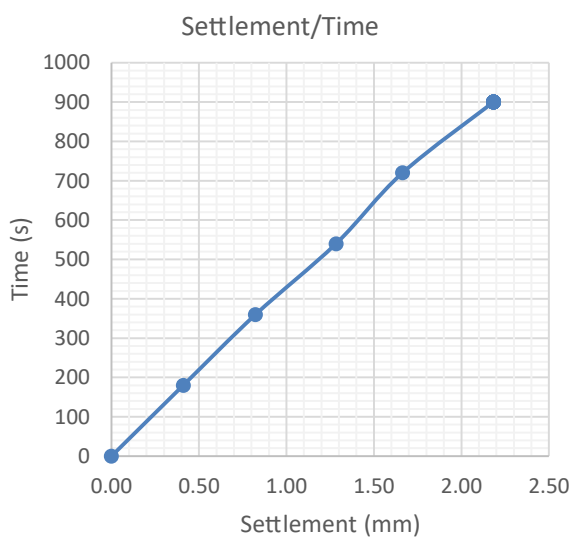
Test Results

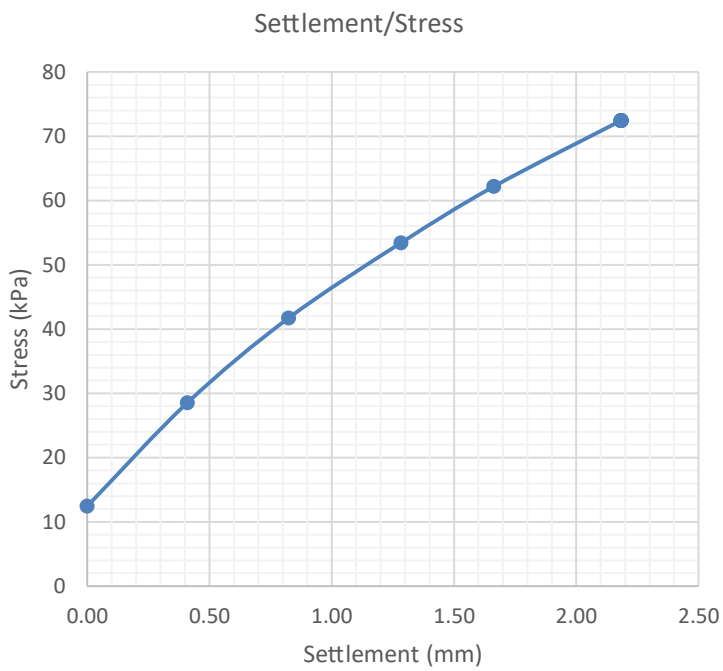
Deviations: No deviations from the test method were employed.

Time, s	Settlement, mm	Plate Stress, kPa
0	0.00	12
180	0.41	29
360	0.82	42
540	1.28	53
720	1.66	62
900	2.18	72

Maximum Applied Stress (kPa):	72
Maximum Settlement (mm):	2.18
Equivalent CBR Value (%):	1
Modulus of Subgrade Reaction, k_{762} ($MN/m^2/m$):	18

Note: Supplemental test method, calculation of Nominal CBR Value and Modulus of Subgrade Reaction: IAN 73/06 revision 1 (2009), HD 25/94 (withdrawn)





For and on behalf of Hixtra Ltd

Kevin Shorthouse
Authorised signatory

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Hixtra Ltd
Unit 103, Caxton Court
Garamonde Drive
Milton Keynes
MK8 8DD

Certificate for the Determination of the Vertical Deformation and Strength Characteristics of Soil by the Incremental Plate Loading Test to BS 1377: Part 9: 1990

Report No: 12240-4
Report Date: 15/08/2024
Client: HSP Consulting Engineers Ltd
Address: Lawrence House
6 Meadowbank Way
Eastwood, Nottingham
NG16 3SB
Site: Coleg Sir Gar, Pibwrlwyd Ln, Carmarthen, SA31 2NH

Test Details

Test Location: CBR 04
Date of Test: 15/08/2024
Description: Brown CLAY
Reaction Load: 8 Tonne Excavator
Material Class: Formation
Weather: Overcast
Layer: 0.4m BGL
Plate Diameter (mm): 295
Condition: The results apply only to the location tested and the material was tested in an 'as found' condition

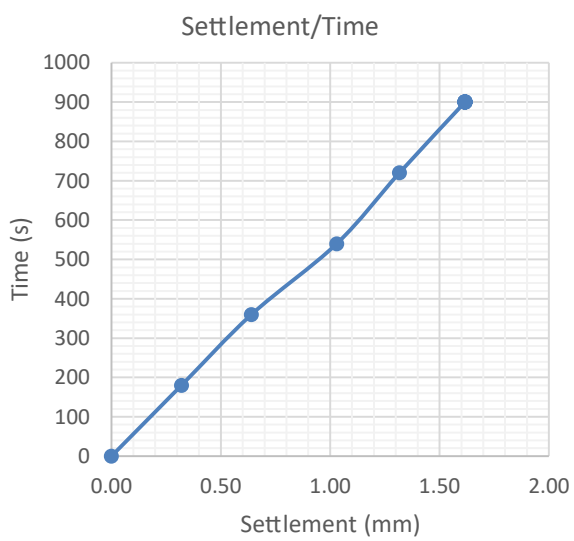
Test Results

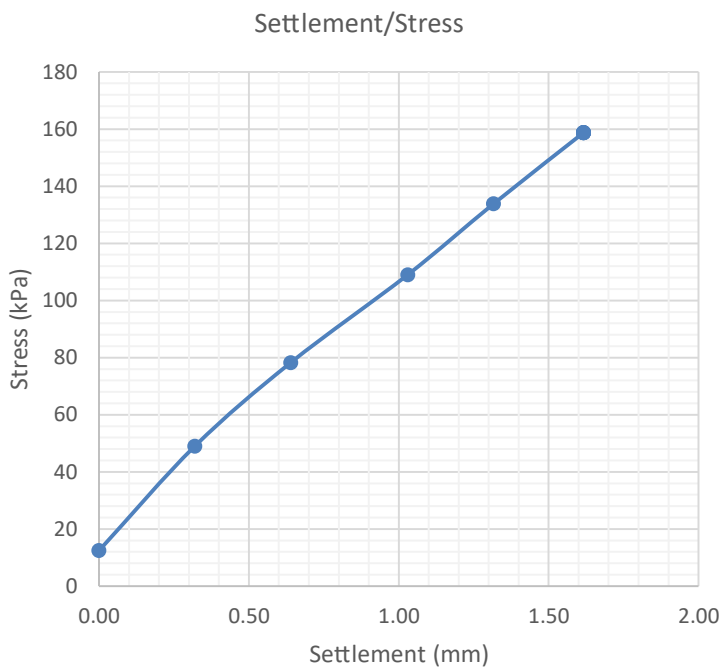
Deviations: No deviations from the test method were employed.

Time, s	Settlement, mm	Plate Stress, kPa
0	0.00	12
180	0.32	49
360	0.64	78
540	1.03	109
720	1.32	134
900	1.62	159

Maximum Applied Stress (kPa):	159
Maximum Settlement (mm):	1.62
Equivalent CBR Value (%):	7
Modulus of Subgrade Reaction, k_{762} ($MN/m^2/m$):	45

Note: Supplemental test method, calculation of Nominal CBR Value and Modulus of Subgrade Reaction: IAN 73/06 revision 1 (2009), HD 25/94 (withdrawn)





For and on behalf of Hixtra Ltd

Kevin Shorthouse
Authorised signatory

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Hixtra Ltd
Unit 103, Caxton Court
Garamonde Drive
Milton Keynes
MK8 8DD

Certificate for the Determination of the Vertical Deformation and Strength Characteristics of Soil by the Incremental Plate Loading Test to BS 1377: Part 9: 1990

Report No: 12240-5
Report Date: 15/08/2024
Client: HSP Consulting Engineers Ltd
Address: Lawrence House
6 Meadowbank Way
Eastwood, Nottingham
NG16 3SB
Site: Coleg Sir Gar, Pibwrlwyd Ln, Carmarthen, SA31 2NH

Test Details

Test Location: CBR 05
Date of Test: 15/08/2024
Description: Brown CLAY
Reaction Load: 8 Tonne Excavator
Material Class: Formation
Weather: Overcast
Layer: 0.6m BGL
Plate Diameter (mm): 295
Condition: The results apply only to the location tested and the material was tested in an 'as found' condition

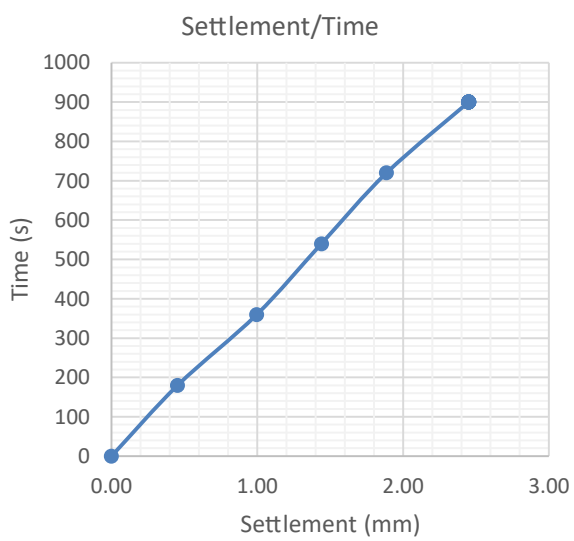
Test Results

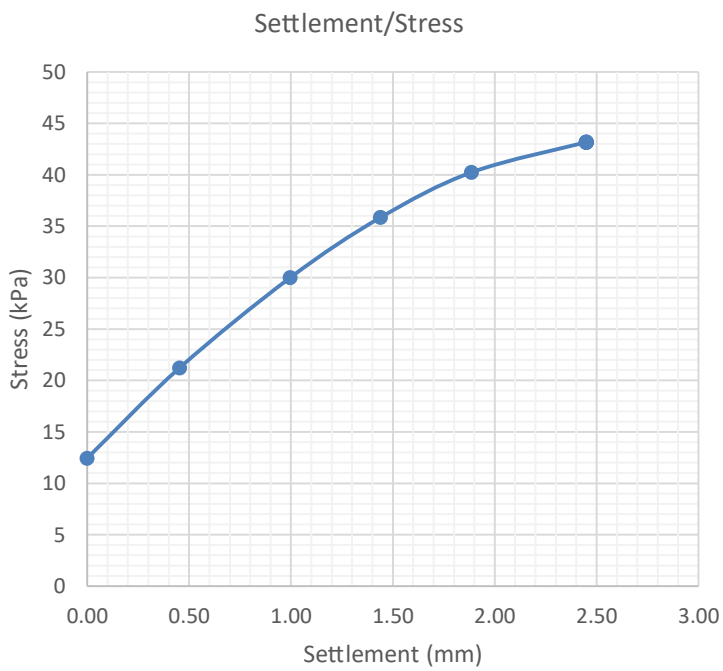
Deviations: No deviations from the test method were employed.

Time, s	Settlement, mm	Plate Stress, kPa
0	0.00	12
180	0.45	21
360	1.00	30
540	1.44	36
720	1.89	40
900	2.45	43

Maximum Applied Stress (kPa):	43
Maximum Settlement (mm):	2.45
Equivalent CBR Value (%):	1
Modulus of Subgrade Reaction, k_{762} ($MN/m^2/m$):	12

Note: Supplemental test method, calculation of Nominal CBR Value and Modulus of Subgrade Reaction: IAN 73/06 revision 1 (2009), HD 25/94 (withdrawn)





For and on behalf of Hixtra Ltd

Kevin Shorthouse
Authorised signatory

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Appendix VIII

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO101

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	4.9	<0.1	<0.1	18.4	0.1	<1	<1		5.05	0.65
00:15	4.9	<0.1	<0.1	17.9	0.7	<1	<1			
00:30	4.9	<0.1	<0.1	18.3	0.5	<1	<1			
00:45	4.9	<0.1	<0.1	18.5	0.4	<1	<1			
01:00	4.9	<0.1	<0.1	18.7	0.3	<1	<1			
01:15	4.9	<0.1	<0.1	18.8	0.3	<1	<1			
01:30	4.9	<0.1	<0.1	18.9	0.2	<1	<1			
01:45	4.9	<0.1	<0.1	19.0	0.2	<1	<1			
02:00	4.9	<0.1	<0.1	19.0	0.2	<1	<1			
02:15	4.9	<0.1	<0.1	19.0	0.1	<1	<1			
02:30	4.9	<0.1	<0.1	19.0	0.1	<1	<1			
02:45	4.9	<0.1	<0.1	19.0	0.1	<1	<1			
03:00	4.9	<0.1	<0.1	19.0	0.1	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**4.9**	**<0.1**	**<0.1**	**19.0**	**0.1**	**<1**	**<1**	**#####**	**5.05**	**0.65**
Peak	**4.9**	**0.0**	**0.0**	**19.0**	**0.7**	**0.0**	**0.0**	**0.0**	**5.05**	**0.65**

Date	Notes:			
28/08/2024	Engineer	NC	Barometric Pressure, mbar	1019
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO102

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	18.9	0.2	<1	<1		5.00	3.91
00:15	<0.1	<0.1	<0.1	15.7	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	14.8	2	<1	<1			
00:45	<0.1	<0.1	<0.1	14.3	2.2	<1	<1			
01:00	<0.1	<0.1	<0.1	14.2	2.2	<1	<1			
01:15	<0.1	<0.1	<0.1	13.9	2.3	<1	<1			
01:30	<0.1	<0.1	<0.1	13.8	2.3	<1	<1			
01:45	<0.1	<0.1	<0.1	13.7	2.4	<1	<1			
02:00	<0.1	<0.1	<0.1	13.7	2.4	<1	<1			
02:15	<0.1	<0.1	<0.1	13.8	2.3	<1	<1			
02:30	<0.1	<0.1	<0.1	13.8	2.3	<1	<1			
02:45	<0.1	<0.1	<0.1	13.8	2.3	<1	<1			
03:00	<0.1	<0.1	<0.1	13.8	2.3	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**13.8**	**2.3**	**<1**	**<1**	**#####**	**5.00**	**3.91**
Peak	**0.0**	**0.0**	**0.0**	**18.9**	**2.4**	**0.0**	**0.0**	**0.0**	**5.00**	**3.91**

Date	Notes:			
28/08/2024	Engineer	NC	Barometric Pressure, mbar	1019
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS107

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	19.3	0	<1	<1		3.00	0.60
00:15	<0.1	<0.1	<0.1	6.8	5.8	<1	<1			
00:30	<0.1	<0.1	<0.1	6.2	5.9	<1	<1			
00:45	<0.1	<0.1	<0.1	6.4	6.9	<1	<1			
01:00	<0.1	<0.1	<0.1	6.6	5.8	<1	<1			
01:15	<0.1	<0.1	<0.1	6.8	5.7	<1	<1			
01:30	<0.1	<0.1	<0.1	7.0	5.5	<1	<1			
01:45	<0.1	<0.1	<0.1	7.3	5.4	<1	<1			
02:00	<0.1	<0.1	<0.1	7.4	5.2	<1	<1			
02:15	<0.1	<0.1	<0.1	7.5	5.2	<1	<1			
02:30	<0.1	<0.1	<0.1	7.5	5.2	<1	<1			
02:45	<0.1	<0.1	<0.1	7.5	5.2	<1	<1			
03:00	<0.1	<0.1	<0.1	7.5	5.2	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**7.5**	**5.2**	**<1**	**<1**	**#####**	**3.00**	**0.60**
Peak	**0.0**	**0.0**	**0.0**	**19.3**	**6.9**	**0.0**	**0.0**	**0.0**	**3.00**	**0.60**

Date	Notes:			
28/08/2024	Engineer	NC	Barometric Pressure, mbar	1019
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS109

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	19.1	0	<1	<1		3.00	1.51
00:15	<0.1	<0.1	<0.1	13.9	1.0	<1	<1			
00:30	<0.1	<0.1	<0.1	12.9	1.0	<1	<1			
00:45	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
01:00	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
01:15	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
01:30	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
01:45	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
02:00	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
02:15	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
02:30	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
02:45	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
03:00	<0.1	<0.1	<0.1	12.8	1.0	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**12.8**	**1.0**	**<1**	**<1**	**#####**	**3.00**	**1.51**
Peak	**0.0**	**0.0**	**0.0**	**19.1**	**1.0**	**0.0**	**0.0**	**0.0**	**3.00**	**1.51**

Date	Notes:			
28/08/2024	Engineer	NC	Barometric Pressure, mbar	1019
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO101

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00									5.05	0.00
00:15			Unable to monitor. Water level recorded above bung. Bailed approximately 10 litres with immediate recharge.							
00:30										
00:45										
01:00										
01:15										
01:30										
01:45										
02:00										
02:15										
02:30										
02:45										
03:00										
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	#####	#####	**0.0**	#####	#####	#####	#####	#####	**5.05**	**0.00**
Peak	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5.05**	**0.00**

Date	Notes:			
05/09/2024	Engineer	NC	Barometric Pressure, mbar	1017
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO102

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	17.0	0.0	<1	<1		5.00	4.02
00:15	<0.1	<0.1	<0.1	11.4	3.6	<1	<1			
00:30	<0.1	<0.1	<0.1	10.4	3.9	<1	<1			
00:45	<0.1	<0.1	<0.1	10.4	3.9	<1	<1			
01:00	<0.1	<0.1	<0.1	10.4	3.9	<1	<1			
01:15	<0.1	<0.1	<0.1	10.3	4.0	<1	<1			
01:30	<0.1	<0.1	<0.1	10.3	3.9	<1	<1			
01:45	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
02:00	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
02:15	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
02:30	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
02:45	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
03:00	<0.1	<0.1	<0.1	10.2	4.0	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**10.2**	**4.0**	**<1**	**<1**	**#####**	**5.00**	**4.02**
Peak	**0.0**	**0.0**	**0.0**	**17.0**	**4.0**	**0.0**	**0.0**	**0.0**	**5.00**	**4.02**

Date	Notes:			
05/09/2024	Engineer	NC	Barometric Pressure, mbar	1017
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS107

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	0.5	<0.1	<0.1	16.8	0.0	<1	<1		3.00	0.56
00:15	0.5	<0.1	<0.1	16.9	0.3	<1	<1			
00:30	0.5	<0.1	<0.1	16.9	0.3	<1	<1			
00:45	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
01:00	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
01:15	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
01:30	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
01:45	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
02:00	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
02:15	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
02:30	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
02:45	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
03:00	0.5	<0.1	<0.1	17.0	0.3	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**0.5**	**<0.1**	**<0.1**	**17.0**	**0.3**	**<1**	**<1**	**#####**	**3.00**	**0.56**
Peak	**0.5**	**0.0**	**0.0**	**17.0**	**0.3**	**0.0**	**0.0**	**0.0**	**3.00**	**0.56**

Date	Notes:			
05/09/2024	Engineer	NC	Barometric Pressure, mbar	1017
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	14

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS109

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	1.6	<0.1	<0.1	16.5	0	<1	<1		3.00	1.50
00:15	1.6	<0.1	<0.1	15.4	0.8	<1	<1			
00:30	1.6	<0.1	<0.1	15.3	0.7	<1	<1			
00:45	1.6	<0.1	<0.1	15.4	0.7	<1	<1			
01:00	1.6	<0.1	<0.1	15.4	0.7	<1	<1			
01:15	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
01:30	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
01:45	1.6	<0.1	<0.1	15.4	0.7	<1	<1			
02:00	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
02:15	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
02:30	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
02:45	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
03:00	1.6	<0.1	<0.1	15.5	0.7	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**1.6**	**<0.1**	**<0.1**	**15.5**	**0.7**	**<1**	**<1**	**#####**	**3.00**	**1.50**
Peak	**1.6**	**0.0**	**0.0**	**16.5**	**0.8**	**0.0**	**0.0**	**0.0**	**3.00**	**1.50**

Date	Notes:			
05/09/2024	Engineer	NC	Barometric Pressure, mbar	1017
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO101

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00									5.05	0.00
00:15			Unable to monitor. Water level recorded above bung. Bailed approximately 10 litres with immediate recharge.							
00:30										
00:45										
01:00										
01:15										
01:30										
01:45										
02:00										
02:15										
02:30										
02:45										
03:00										
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**#####**	**#####**	**0.0**	**#####**	**#####**	**#####**	**#####**	**#####**	**5.05**	**0.00**
Peak	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5.05**	**0.00**

Date	Notes:			
12/09/2024	Engineer	NC	Barometric Pressure, mbar	1018
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	11

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO102

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	17.2	<0.1	<1	<1		5.00	3.30
00:15	<0.1	<0.1	<0.1	10.4	3.7	<1	<1			
00:30	<0.1	<0.1	<0.1	8.9	4.4	<1	<1			
00:45	<0.1	<0.1	<0.1	8.8	4.4	<1	<1			
01:00	<0.1	<0.1	<0.1	9.2	4.3	<1	<1			
01:15	<0.1	<0.1	<0.1	9.5	4.3	<1	<1			
01:30	<0.1	<0.1	<0.1	9.6	4.1	<1	<1			
01:45	<0.1	<0.1	<0.1	10.9	3.9	<1	<1			
02:00	<0.1	<0.1	<0.1	11.0	3.3	<1	<1			
02:15	<0.1	<0.1	<0.1	11.0	3.5	<1	<1			
02:30	<0.1	<0.1	<0.1	11.0	3.4	<1	<1			
02:45	<0.1	<0.1	<0.1	11.0	3.4	<1	<1			
03:00	<0.1	<0.1	<0.1	11.0	3.4	<1	<1			
03:15		<0.1	<0.1	11.0	3.4	<1	<1			
03:30		<0.1	<0.1	11.0	3.4	<1	<1			
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**11.0**	**3.4**	**<1**	**<1**	**#####**	**5.00**	**3.30**
Peak	**0.0**	**0.0**	**0.0**	**17.2**	**4.4**	**0.0**	**0.0**	**0.0**	**5.00**	**3.30**

Date	Notes:			
12/09/2024	Engineer	NC	Barometric Pressure, mbar	1018
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	11

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS107

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	1.2	<0.1	<0.1	17.3	<0.1	<1	<1		3.00	0.34
00:15	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
00:30	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
00:45	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
01:00	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
01:15	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
01:30	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
01:45	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
02:00	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
02:15	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
02:30	1.2	<0.1	<0.1	17.4	0.5	<1	<1			
02:45	1.2									
03:00	1.2		Monitoring terminated early due rising water levels.							
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**1.2**	**<0.1**	**0.0**	**17.4**	**0.5**	**<1**	**<1**	**#####**	**3.00**	**0.34**
Peak	**1.2**	**0.0**	**0.0**	**17.4**	**0.5**	**0.0**	**0.0**	**0.0**	**3.00**	**0.34**

Date	Notes:			
12/09/2024	Engineer	NC	Barometric Pressure, mbar	1018
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	11

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS109

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbg
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	17.2	0.1	<1	<1		3.00	1.32
00:15	<0.1	<0.1	<0.1	15.6	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	15.7	1.5	<1	<1			
00:45	<0.1	<0.1	<0.1	16	1.3	<1	<1			
01:00	<0.1	<0.1	<0.1	16.2	1.1	<1	<1			
01:15	<0.1	<0.1	<0.1	16.4	0.9	<1	<1			
01:30	<0.1	<0.1	<0.1	16.5	0.8	<1	<1			
01:45	<0.1	<0.1	<0.1	16.6	0.7	<1	<1			
02:00	<0.1	<0.1	<0.1	16.7	0.7	<1	<1			
02:15	<0.1	<0.1	<0.1	16.8	0.6	<1	<1			
02:30	<0.1	<0.1	<0.1	16.9	0.6	<1	<1			
02:45	<0.1	<0.1	<0.1	16.9	0.6	<1	<1			
03:00	<0.1	<0.1	<0.1	16.9	0.6	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**16.9**	**0.6**	**<1**	**<1**	**#####**	**3.00**	**1.32**
Peak	**0.0**	**0.0**	**0.0**	**17.2**	**1.8**	**0.0**	**0.0**	**0.0**	**3.00**	**1.32**

Date	Notes:			
12/09/2024	Engineer	NC	Barometric Pressure, mbar	1018
			Pressure Trend	Steady
	Equipment	GFM436	Air Temp (˚C)	11

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO101

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00									5.05	0.00
00:15			Unable to monitor. Water level recorded above bung. Bailed approximately 25 litres with immediate recharge.							
00:30										
00:45										
01:00										
01:15										
01:30										
01:45										
02:00										
02:15										
02:30										
02:45										
03:00										
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	#####	#####	**0.0**	#####	#####	#####	#####	#####	**5.05**	**0.00**
Peak	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5.05**	**0.00**

Date	Notes:			
18/09/2024	Engineer	NC	Barometric Pressure, mbar	1025
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

hsp consulting

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

RO102

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	18.0	<0.1	<1	<1		5.00	4.30
00:15	<0.1	<0.1	<0.1	14.2	2.8	<1	<1			
00:30	<0.1	<0.1	<0.1	12.2	3.9	<1	<1			
00:45	<0.1	<0.1	<0.1	11.5	3.6	<1	<1			
01:00	<0.1	<0.1	<0.1	11.7	3.8	<1	<1			
01:15	<0.1	<0.1	<0.1	11.9	3.9	<1	<1			
01:30	<0.1	<0.1	<0.1	12.0	3.9	<1	<1			
01:45	<0.1	<0.1	<0.1	11.3	3.4	<1	<1			
02:00	<0.1	<0.1	<0.1	11.2	3.4	<1	<1			
02:15	<0.1	<0.1	<0.1	11.2	3.4	<1	<1			
02:30	<0.1	<0.1	<0.1	11.2	3.4	<1	<1			
02:45	<0.1	<0.1	<0.1	11.2	3.4	<1	<1			
03:00	<0.1	<0.1	<0.1	11.2	3.4	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**11.2**	**3.4**	**<1**	**<1**	**#####**	**5.00**	**4.30**
Peak	**0.0**	**0.0**	**0.0**	**18.0**	**3.9**	**0.0**	**0.0**	**0.0**	**5.00**	**4.30**

Date	Notes:			
18/09/2024	Engineer	NC	Barometric Pressure, mbar	1025
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS107

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00									2.90	0.45
00:15			Unable to monitor. Water level recorded above bung. Lifted and bailed approximately 15 litres with immediate recharge close to surface							
00:30										
00:45										
01:00										
01:15										
01:30										
01:45										
02:00										
02:15										
02:30										
02:45										
03:00										
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**#####**	**#####**	**0.0**	**#####**	**#####**	**#####**	**#####**	**#####**	**2.90**	**0.45**
Peak	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.90**	**0.45**

Date	Notes:			
18/09/2024	Engineer	NC	Barometric Pressure, mbar	1025
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C4103
Project Name	Coleg Sir Gar
Client	WEPCo

WS109

Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
00:00	<0.1	<0.1	<0.1	18	0.1	<1	<1		3.00	1.55
00:15	<0.1	<0.1	<0.1	15.3	1.7	<1	<1			
00:30	<0.1	<0.1	<0.1	15.5	1.5	<1	<1			
00:45	<0.1	<0.1	<0.1	16.2	1.3	<1	<1			
01:00	<0.1	<0.1	<0.1	16.3	1.1	<1	<1			
01:15	<0.1	<0.1	<0.1	16.5	0.9	<1	<1			
01:30	<0.1	<0.1	<0.1	16.6	0.8	<1	<1			
01:45	<0.1	<0.1	<0.1	16.8	0.7	<1	<1			
02:00	<0.1	<0.1	<0.1	17.2	0.5	<1	<1			
02:15	<0.1	<0.1	<0.1	17.2	0.5	<1	<1			
02:30	<0.1	<0.1	<0.1	17.2	0.5	<1	<1			
02:45	<0.1	<0.1	<0.1	17.2	0.5	<1	<1			
03:00	<0.1	<0.1	<0.1	17.2	0.5	<1	<1			
03:15										
03:30										
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**17.2**	**0.5**	**<1**	**<1**	**#####**	**3.00**	**1.55**
Peak	**0.0**	**0.0**	**0.0**	**18.0**	**1.7**	**0.0**	**0.0**	**0.0**	**3.00**	**1.55**

Date	Notes:			
18/09/2024	Engineer	NC	Barometric Pressure, mbar	1025
			Pressure Trend	STEADY
	Equipment	GFM436	Air Temp (˚C)	17

TEST DATE AND CONDITIONS		
Date	30/09/2024	
Atmospheric Pressure	982	mB
Ambient Temperature	22.0	°C
Environics Serial No.	5089	

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

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GFM436 Final Inspection & Calibration Check Certificate

Customer	HSP Consulting Engineers Ltd
Certificate Number	125581
Order Number	339781

Serial Number	13561
Software Version	G436-00.0029/0010

Recalibration DUE Date
30/09/25

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	550	*Accept > 200 cc/min*	Pump Flow @ -200mB	350	*Accept > 200 cc/min*
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
	CH_4		CO_2		O_2	
	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %
Sensor	59.7	60	40.0	40	20.9	20.9
	Accept ±3.0		*Accept ±3.0*		*Accept ±0.5*	
	5.0	5	5.0	5	6.0	6
	Accept ±0.3		*Accept ±0.3*		*Accept ±0.3*	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		*Accept ±0.0*		*Accept ±0.1*	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings *(ppm)*			
Gas Type	Range *(ppm)*		Zero Reading		Instrument Gas Reading	
H2S	5000	*1500*	0	*Accept ±0.0*	1500	*Accept ±5.0%*
CO	2000	*1000*	0	*Accept ±0.0*	1000	*Accept ±5.0%*
Hexane	*2.0%*	2.0%	0	*Accept ±0.0*	1.99	*Accept ±10.0%*

TEST DATE AND CONDITIONS		
Date	30.9.24	
Atmospheric Pressure	982	mB
Ambient Temperature	22.0	°C
Environics Serial No.	5089	

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GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
339781	GFM436	13561 G436-29/10	125581

Calibration Technician ..... **Date** 30.9.24

Inspection Technician ..... **Date** 1.10.24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST			Tick if included
Function Tests	Dust Caps Fitted	P	Instrument			✓
	Keyboard Test (All Keys)	P	Leather Case			✓
	Backlight	P	Instrument Strap			✓
	Clock Set / Running	P	AC Battery Charger (UK)			✓
	Comms Test	P	AC Battery Charger (EURO)			X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)			X
	Overall Leak Test (30mB)	n/a	AC Battery Charger (AUS)			X
	Battery Charge Test	P	Gas Sample Pipe - *(new issue)*			✓
	Service Date set to?	30.9.26	Flow Sample Pipe - *(new issue)*			✓
Channel Tests	Data Logging Enabled?	P	Hard Carry Case			✓
	Verify CH4/LEL/Hexane/PID	P	Spares Pot			✓
	Verify CO2	P	Allen Key			✓
	Verify O2	P	Temperature Probe			X
	Verify H2S	P	Vane Anemometer			X
	Verify CO	P	USB Cable			✓
	Verify LEL	P	USB Memory stick			✓
	Verify 1st Option Gas	N/A	SM V5 Software	Ver	6.05	✓
	Verify Atmospheric pressure	P	Internal Filter Pack	Qty		X
	Verify differential pressure	P	External Filter Pack	Qty		X
	Verify flow	P	Field Guide			X
	Verify temperature probe input	P	**Extra Items:**			
	Verify vane anemometer input	P	Sample Tubes			
DataBase Checks	Jobcard(s) completed and signed	P				
	Jobcard(s) booked off database	P				
	Calibration certificate completed	P				
	Complete & print QI record	n/a				
Label Checks	No. of Calibration label fitted	GDC 13557	**Comments:**			
	MCERTS label displayed	N/A				
	Warranty label fitted	P				
H2S Range	H2S Range from Sales Order	5000 ppm				
	H2S Range from Cal Cert	5000 ppm				
	Over-range value correct?	P				
QA Cylinders Used	No. of High Range CH4/CO2	57487				
	No. of Low Range CH4/CO2/O2	56982				
	No. of H2S	C032373				
	No. of CO	58346				
	No. of Optional Cylinder	N/A				

Appendix IX

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

AJ0OE-18Q54-MJNRS

Job name

HWOL_24-27162-20240906 100127

Description/Comments

General Suite. Proposed school redevelopment.; General Suite. Proposed school redevelopment

Project

C4103

Site

Coleg Sir Gar

Classified by

Name:
Matthew Kent
Date:
07 Oct 2024 15:25 GMT
Telephone:
01773 535 555

Company:
HSP Consulting Engineers Limited
Lawrence House
6 Meadowbank Way
Eastwood
NG16 3SB

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	12 Feb 2020
Most recent 3 year Refresher	04 Apr 2023

Next 3 year Refresher due by Apr 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Coleg Sir Gar **Post Code** N/A

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

School redevelopment which includes demolition and newbuild.

Description of the specific process, sub-process and/or activity that created the waste

Excavation of foundations, earthworks for level development platform.

Description of the waste

Mixed but generally glacial till comprising sandy gravelly cobbly CLAY.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	SA201-13/08/2024-0.10	0.10-0.20	Non Hazardous		3
2	SA202-13/08/2024-0.20	0.20-0.30	Non Hazardous		6
3	SA205-13/08/2024-0.10	0.10-0.20	Non Hazardous		9
4	SA206-13/08/2024-0.05	0.05-0.10	Non Hazardous		13
5	WS101-14/08/2024-0.20	0.20-0.30	Non Hazardous		16
6	WS103-14/08/2024-0.05	0.05-0.15	Non Hazardous		19
7	WS104-14/08/2024-0.10	0.10-0.20	Non Hazardous		22
8	WS105-14/08/2024-0.40	0.40-0.50	Non Hazardous		25
9	WS107-14/08/2024-0.10		Non Hazardous		28
10	WS109-14/08/2024-0.40	0.40-0.50	Non Hazardous		32
11	TP104-14/08/2024-0.10		Non Hazardous		35
12	HDP2-23/09/2024-0.10		Non Hazardous		39

Related documents

#	Name	Description
1	HWOL_24-27162-20240906 100127.batch	Eurofins Chemtest .batch file used to populate the Job
2	HWOL_24-27162-20240906 100127.hwol	Eurofins Chemtest .hwol file used to populate the Job
3	HWOL_24-30803-20241004 172830.hwol	Eurofins Chemtest .hwol file used to populate the Job
4	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Matthew Kent

Created date: 07 Oct 2024 15:25 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	42
Appendix B: Rationale for selection of metal species	44
Appendix C: Version	45

Classification of sample: SA201-13/08/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SA201-13/08/2024-0.10
Sample Depth:
0.10-0.20 m
Moisture content:
20%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.4	mg/kg	1.197	3.256	mg/kg	0.000326 %	✓	
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		53	mg/kg	1.32	55.982	mg/kg	0.0056 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.82	mg/kg	3.22	2.112	mg/kg	0.000211 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.35	mg/kg	1.142	0.32	mg/kg	0.000032 %	✓	
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21	mg/kg	1.462	24.554	mg/kg	0.00246 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		70	mg/kg	1.126	63.05	mg/kg	0.0063 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	92	mg/kg		73.6	mg/kg	0.00736 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.35	mg/kg	1.353	0.379	mg/kg	0.0000379 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		36	mg/kg	2.022	58.245	mg/kg	0.00582 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				3.7	mg/kg	1.405	4.159	mg/kg	0.000416 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	119.493	mg/kg	0.0119 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		32	mg/kg	1.785	45.701	mg/kg	0.00457 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		36	mg/kg		28.8	mg/kg	0.00288 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		pH			PH		9.3	pH		9.3	pH	9.3 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		0.62	mg/kg		0.496	mg/kg	0.0000496 %	✓	
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		0.68	mg/kg		0.544	mg/kg	0.0000544 %	✓	
27		anthracene		204-371-1	120-12-7		0.21	mg/kg		0.168	mg/kg	0.0000168 %	✓	
28		fluoranthene		205-912-4	206-44-0		1	mg/kg		0.8	mg/kg	0.00008 %	✓	
29		pyrene		204-927-3	129-00-0		0.76	mg/kg		0.608	mg/kg	0.0000608 %	✓	
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.46	mg/kg		0.368	mg/kg	0.0000368 %	✓	
31		chrysene	601-048-00-0	205-923-4	218-01-9		0.49	mg/kg		0.392	mg/kg	0.0000392 %	✓	
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.64	mg/kg		0.512	mg/kg	0.0000512 %	✓	
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.2	mg/kg		0.16	mg/kg	0.000016 %	✓	
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.47	mg/kg		0.376	mg/kg	0.0000376 %	✓	
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0487 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%)
because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00288%)

Classification of sample: SA202-13/08/2024-0.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SA202-13/08/2024-0.20
Sample Depth:
0.20-0.30 m
Moisture content:
15%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	13.467	mg/kg	0.00135 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.58	mg/kg	3.22	1.587	mg/kg	0.000159 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.194	mg/kg	0.0000194 %	✓	
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13	mg/kg	1.462	16.15	mg/kg	0.00162 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31	mg/kg	1.126	29.667	mg/kg	0.00297 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	51	mg/kg		43.35	mg/kg	0.00434 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.09	mg/kg	1.353	0.104	mg/kg	0.0000104 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		20	mg/kg	2.022	34.381	mg/kg	0.00344 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.47	mg/kg	1.405	0.561	mg/kg	0.0000561 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	126.961	mg/kg	0.0127 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		25	mg/kg	1.785	37.935	mg/kg	0.00379 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		38	mg/kg		32.3	mg/kg	0.00323 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
22		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
23		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
29		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0343 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00323%)

Classification of sample: SA205-13/08/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SA205-13/08/2024-0.10
Sample Depth:
0.10-0.20 m
Moisture content:
21%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	11.474	mg/kg	0.00115 %	✓	
3	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.45	mg/kg	3.22	1.145	mg/kg	0.000114 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	20.783	mg/kg	0.00208 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	9.784	mg/kg	0.000978 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	32	mg/kg		25.28	mg/kg	0.00253 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.09	mg/kg	1.353	0.0962	mg/kg	0.00000962 %	✓	
10	nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		11	mg/kg	2.022	17.575	mg/kg	0.00176 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.47	mg/kg	1.405	0.522	mg/kg	0.0000522 %	✓	
12	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		49	mg/kg	1.245	48.183	mg/kg	0.00482 %	✓	
13	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		24	mg/kg	1.785	33.847	mg/kg	0.00338 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		35	mg/kg		27.65	mg/kg	0.00276 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		pH			PH		9.2	pH		9.2	pH	9.2 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		0.68	mg/kg		0.537	mg/kg	0.0000537 %	✓	
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		0.13	mg/kg		0.103	mg/kg	0.0000103 %	✓	
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		0.13	mg/kg		0.103	mg/kg	0.0000103 %	✓	
29		pyrene		204-927-3	129-00-0		0.11	mg/kg		0.0869	mg/kg	0.00000869 %	✓	
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane	602-045-00-7	200-024-3	50-29-3		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
39		chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-047-00-8	200-349-0	57-74-9		<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		**<LOD**
40		hexachlorocyclohexanes, including lindane	602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1		<0.8	mg/kg		<0.8	mg/kg	<0.00008 %		**<LOD**
41		dieldrin (ISO)	602-049-00-9	200-484-5	60-57-1		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
42		endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene	602-051-00-X	200-775-7	72-20-8		<0.6	mg/kg		<0.6	mg/kg	<0.00006 %		**<LOD**
43		heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene	602-046-00-2	200-962-3	76-44-8		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
44		aldrin (ISO)	602-048-00-3	206-215-8	309-00-2		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
45		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
46		phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate	015-033-00-6	206-052-2	298-02-2		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
47		demeton-S (ISO); diethyl-S-2-ethylthioethyl phosphorothioate	015-029-00-4	204-801-8	126-75-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
48		disulfoton (ISO); O,O-diethyl 2-ethylthioethyl phosphorodithioate	015-060-00-3	206-054-3	298-04-4		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
49		fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate	015-048-00-8	200-231-9	55-38-9		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
50		trichloronate (ISO); O-ethyl O-2,4,5-trichlorophenyl ethylphosphonothioate	015-098-00-0	206-326-1	327-98-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
51		azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate	015-039-00-9	201-676-1	86-50-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
52		coumaphos (ISO); O-3-chloro-4-methylcoumarin-7-yl O,O-diethyl phosphorothioate	015-038-00-3	200-285-3	56-72-4		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
53		simazine (ISO); 6-chloro-N,N'-diethyl-1,3,5-triazine-2,4-diamine	612-088-00-3	204-535-2	122-34-9		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
54		atrazine (ISO); 2-chloro-4-ethylamine-6-isopropylamine-1,3,5-triazine	613-068-00-7	217-617-8	1912-24-9		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
55		propazine (ISO); 2-chloro-4,6-bis(isopropylamino)-1,3,5-triazine	613-067-00-1	205-359-9	139-40-2		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
56		terbuthylazine (ISO); N-tert-butyl-6-chloro-N¢-ethyl-1,3,5-triazine- 2,4-diamine	613-323-00-2	227-637-9	5915-41-3		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
57		secbumeton (ISO); 2-sec-butylamino-4-ethylamino-6-methoxy-1,3,5-triazine	613-063-00-X	247-554-1	26259-45-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
58		simetryn (ISO); 2,4-bis(ethylamino)-6-methylthio-1,3,5-triazine	613-065-00-0	213-801-7	1014-70-6		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
59		ametryn (ISO); N-ethyl-N'-isopropyl-6-(methylthio)-1,3,5-triazine-2,4-diamine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-010-00-0	212-634-7	834-12-8									
60		heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		602-063-00-5	213-831-0	1024-57-3									
61	•	p,p'-DDE				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-784-6	72-55-9									
62	•	p,p'-DDD				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-783-0	72-54-8									
63	•	p,p'-methoxychlor				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-779-9	72-43-5									
64		endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6-ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3-ylenedimethylene sulfite				<0.6	mg/kg		<0.6	mg/kg	<0.00006 %		**<LOD**
		602-052-00-5	204-079-4	115-29-7									
										Total:	0.021 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00276%)

Classification of sample: SA206-13/08/2024-0.05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SA206-13/08/2024-0.05
Sample Depth:
0.05-0.10 m
Moisture content:
29%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 29% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.4	mg/kg	1.32	8.812	mg/kg	0.000881 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.15	mg/kg	1.142	0.122	mg/kg	0.0000122 %	✓	
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	14.528	mg/kg	0.00145 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15	mg/kg	1.126	11.991	mg/kg	0.0012 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	43	mg/kg		30.53	mg/kg	0.00305 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.06	mg/kg	1.353	0.0577	mg/kg	0.00000577 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		11	mg/kg	2.022	15.795	mg/kg	0.00158 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.25	mg/kg	1.405	<0.351	mg/kg	<0.0000351 %		**<LOD**
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		83	mg/kg	1.245	73.351	mg/kg	0.00734 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		18	mg/kg	1.785	22.815	mg/kg	0.00228 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		15	mg/kg		10.65	mg/kg	0.00107 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		pH			PH		9.1	pH		9.1	pH	9.1 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		0.48	mg/kg		0.341	mg/kg	0.0000341 %	✓	
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		0.23	mg/kg		0.163	mg/kg	0.0000163 %	✓	
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		0.55	mg/kg		0.391	mg/kg	0.0000391 %	✓	
29		pyrene		204-927-3	129-00-0		0.58	mg/kg		0.412	mg/kg	0.0000412 %	✓	
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.26	mg/kg		0.185	mg/kg	0.0000185 %	✓	
31		chrysene	601-048-00-0	205-923-4	218-01-9		0.27	mg/kg		0.192	mg/kg	0.0000192 %	✓	
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.3	mg/kg		1.633	mg/kg	0.000163 %	✓	
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.63	mg/kg		0.447	mg/kg	0.0000447 %	✓	
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.2	mg/kg		1.562	mg/kg	0.000156 %	✓	
35		indeno[123-cd]pyrene		205-893-2	193-39-5		2.1	mg/kg		1.491	mg/kg	0.000149 %	✓	
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		2.2	mg/kg		1.562	mg/kg	0.000156 %	✓	
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0204 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%)
because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00107%)

Classification of sample: WS101-14/08/2024-0.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS101-14/08/2024-0.20
Sample Depth:
0.20-0.30 m
Moisture content:
21%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14	mg/kg	1.32	14.603	mg/kg	0.00146 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	32.33	mg/kg	0.00323 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22	mg/kg	1.126	19.568	mg/kg	0.00196 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	50	mg/kg		39.5	mg/kg	0.00395 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.23	mg/kg	1.353	0.246	mg/kg	0.0000246 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		17	mg/kg	2.022	27.161	mg/kg	0.00272 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.44	mg/kg	1.405	0.488	mg/kg	0.0000488 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		74	mg/kg	1.245	72.766	mg/kg	0.00728 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		43	mg/kg	1.785	60.643	mg/kg	0.00606 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		17	mg/kg		13.43	mg/kg	0.00134 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		pH			PH		9	pH		9	pH	9pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		0.42	mg/kg		0.332	mg/kg	0.0000332 %	✓	
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		0.13	mg/kg		0.103	mg/kg	0.0000103 %	✓	
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		0.12	mg/kg		0.0948	mg/kg	0.00000948 %	✓	
29		pyrene		204-927-3	129-00-0		0.12	mg/kg		0.0948	mg/kg	0.00000948 %	✓	
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0288 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00134%)

Classification of sample: WS103-14/08/2024-0.05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS103-14/08/2024-0.05
Sample Depth:
0.05-0.15 m
Moisture content:
21%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.7	mg/kg	1.32	10.118	mg/kg	0.00101 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.87	mg/kg	3.22	2.213	mg/kg	0.000221 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21	mg/kg	1.462	24.247	mg/kg	0.00242 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24	mg/kg	1.126	21.347	mg/kg	0.00213 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	48	mg/kg		37.92	mg/kg	0.00379 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.1	mg/kg	1.353	0.107	mg/kg	0.0000107 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		13	mg/kg	2.022	20.77	mg/kg	0.00208 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.33	mg/kg	1.405	0.366	mg/kg	0.0000366 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		51	mg/kg	1.245	50.15	mg/kg	0.00501 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		32	mg/kg	1.785	45.129	mg/kg	0.00451 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		15	mg/kg		11.85	mg/kg	0.00119 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
21		pH			PH		9.1	pH		9.1	pH	9.1 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		0.49	mg/kg		0.387	mg/kg	0.0000387 %	✓	
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		0.24	mg/kg		0.19	mg/kg	0.000019 %	✓	
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		0.28	mg/kg		0.221	mg/kg	0.0000221 %	✓	
29		pyrene		204-927-3	129-00-0		0.28	mg/kg		0.221	mg/kg	0.0000221 %	✓	
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.16	mg/kg		0.126	mg/kg	0.0000126 %	✓	
31		chrysene	601-048-00-0	205-923-4	218-01-9		0.17	mg/kg		0.134	mg/kg	0.0000134 %	✓	
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0231 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%)
because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00119%)

Classification of sample: WS104-14/08/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS104-14/08/2024-0.10
Sample Depth:
0.10-0.20 m
Moisture content:
24%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 24% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.4	mg/kg	1.32	8.429	mg/kg	0.000843 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	2.447	mg/kg	0.000245 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	21.105	mg/kg	0.00211 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13	mg/kg	1.126	11.124	mg/kg	0.00111 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	32	mg/kg		24.32	mg/kg	0.00243 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07	mg/kg	1.353	0.072	mg/kg	0.0000072 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		11	mg/kg	2.022	16.907	mg/kg	0.00169 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.25	mg/kg	1.405	<0.351	mg/kg	<0.0000351 %		**<LOD**
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		50	mg/kg	1.245	47.299	mg/kg	0.00473 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		30	mg/kg	1.785	40.702	mg/kg	0.00407 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group				21	mg/kg		15.96	mg/kg	0.0016 %	✓	
				TPH									
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
16		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
17		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
18		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
19		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
21		pH				9.2	pH		9.2	pH	9.2 pH		
				PH									
22		naphthalene				0.59	mg/kg		0.448	mg/kg	0.0000448 %	✓	
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
24		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
25		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
26		phenanthrene				0.14	mg/kg		0.106	mg/kg	0.0000106 %	✓	
			201-581-5	85-01-8									
27		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
28		fluoranthene				0.13	mg/kg		0.0988	mg/kg	0.00000988 %	✓	
			205-912-4	206-44-0									
29		pyrene				0.12	mg/kg		0.0912	mg/kg	0.00000912 %	✓	
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
36		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
38		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									
										Total:	0.0195 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0016%)

Classification of sample: WS105-14/08/2024-0.40

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS105-14/08/2024-0.40
Sample Depth:
0.40-0.50 m
Moisture content:
22%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.4	mg/kg	1.32	6.591	mg/kg	0.000659 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.45	mg/kg	3.22	1.13	mg/kg	0.000113 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	20.52	mg/kg	0.00205 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13	mg/kg	1.126	11.417	mg/kg	0.00114 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	16	mg/kg		12.48	mg/kg	0.00125 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		**<LOD**
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		12	mg/kg	2.022	18.93	mg/kg	0.00189 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.25	mg/kg	1.405	<0.351	mg/kg	<0.0000351 %		**<LOD**
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		47	mg/kg	1.245	45.631	mg/kg	0.00456 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		19	mg/kg	1.785	26.456	mg/kg	0.00265 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		<10.5	mg/kg		<10.5	mg/kg	<0.00105 %		<LOD
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
21		pH			PH		9	pH		9	pH	9pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
											Total:	0.016 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS107-14/08/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS107-14/08/2024-0.10
Moisture content:
47%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 47% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.1	mg/kg	1.32	4.269	mg/kg	0.000427 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	15.492	mg/kg	0.00155 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	9.548	mg/kg	0.000955 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	32	mg/kg		16.96	mg/kg	0.0017 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07	mg/kg	1.353	0.0502	mg/kg	0.00000502 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		17	mg/kg	2.022	18.222	mg/kg	0.00182 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.27	mg/kg	1.405	0.201	mg/kg	0.0000201 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		64	mg/kg	1.245	42.221	mg/kg	0.00422 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		25	mg/kg	1.785	23.654	mg/kg	0.00237 %	✓	
14		TPH (C6 to C40) petroleum group			TPH		73	mg/kg		38.69	mg/kg	0.00387 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18	•	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20	•	pH			PH		8.9	pH		8.9	pH	8.9 pH		
21		naphthalene	601-052-00-2	202-049-5	91-20-3		1.4	mg/kg		0.742	mg/kg	0.0000742 %	✓	
22	•	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
23	•	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24	•	fluorene		201-695-5	86-73-7		0.3	mg/kg		0.159	mg/kg	0.0000159 %	✓	
25	•	phenanthrene		201-581-5	85-01-8		2.8	mg/kg		1.484	mg/kg	0.000148 %	✓	
26	•	anthracene		204-371-1	120-12-7		0.77	mg/kg		0.408	mg/kg	0.0000408 %	✓	
27	•	fluoranthene		205-912-4	206-44-0		5.2	mg/kg		2.756	mg/kg	0.000276 %	✓	
28	•	pyrene		204-927-3	129-00-0		3.8	mg/kg		2.014	mg/kg	0.000201 %	✓	
29		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.3	mg/kg		1.219	mg/kg	0.000122 %	✓	
30		chrysene	601-048-00-0	205-923-4	218-01-9		2.3	mg/kg		1.219	mg/kg	0.000122 %	✓	
31		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.6	mg/kg		1.378	mg/kg	0.000138 %	✓	
32		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.1	mg/kg		0.583	mg/kg	0.0000583 %	✓	
33		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2	mg/kg		1.06	mg/kg	0.000106 %	✓	
34	•	indeno[123-cd]pyrene		205-893-2	193-39-5		1.2	mg/kg		0.636	mg/kg	0.0000636 %	✓	
35		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36	•	benzo[ghi]perylene		205-883-8	191-24-2		1.2	mg/kg		0.636	mg/kg	0.0000636 %	✓	
37		DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane	602-045-00-7	200-024-3	50-29-3		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
38		chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-047-00-8	200-349-0	57-74-9		<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		**<LOD**
39		hexachlorocyclohexanes, including lindane	602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1		<0.8	mg/kg		<0.8	mg/kg	<0.00008 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
40		dieldrin (ISO)				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		602-049-00-9	200-484-5	60-57-1									
41		endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene				<0.6	mg/kg		<0.6	mg/kg	<0.00006 %		**<LOD**
		602-051-00-X	200-775-7	72-20-8									
42		heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		602-046-00-2	200-962-3	76-44-8									
43		aldrin (ISO)				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		602-048-00-3	206-215-8	309-00-2									
44		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
45		phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-033-00-6	206-052-2	298-02-2									
46		demeton-S (ISO); diethyl-S-2-ethylthioethyl phosphorothioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-029-00-4	204-801-8	126-75-0									
47		disulfoton (ISO); O,O-diethyl 2-ethylthioethyl phosphorodithioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-060-00-3	206-054-3	298-04-4									
48		fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-048-00-8	200-231-9	55-38-9									
49		trichloronate (ISO); O-ethyl O-2,4,5-trichlorophenyl ethylphosphonothioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-098-00-0	206-326-1	327-98-0									
50		azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-039-00-9	201-676-1	86-50-0									
51		coumaphos (ISO); O-3-chloro-4-methylcoumarin-7-yl O,O-diethyl phosphorothioate				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		015-038-00-3	200-285-3	56-72-4									
52		simazine (ISO); 6-chloro-N,N'-diethyl-1,3,5-triazine-2,4-diamine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		612-088-00-3	204-535-2	122-34-9									
53		atrazine (ISO); 2-chloro-4-ethylamine-6-isopropylamine-1,3,5-triazine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-068-00-7	217-617-8	1912-24-9									
54		propazine (ISO); 2-chloro-4,6-bis(isopropylamino)-1,3,5-triazine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-067-00-1	205-359-9	139-40-2									
55		terbuthylazine (ISO); N-tert-butyl-6-chloro-N¢-ethyl-1,3,5-triazine- 2,4-diamine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-323-00-2	227-637-9	5915-41-3									
56		secbumeton (ISO); 2-sec-butylamino-4-ethylamino-6-methoxy-1,3,5-triazine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-063-00-X	247-554-1	26259-45-0									
57		simetryn (ISO); 2,4-bis(ethylamino)-6-methylthio-1,3,5-triazine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-065-00-0	213-801-7	1014-70-6									
58		ametryn (ISO); N-ethyl-N'-isopropyl-6-(methylthio)-1,3,5-triazine-2,4-diamine				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		613-010-00-0	212-634-7	834-12-8									
59		heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
		602-063-00-5	213-831-0	1024-57-3									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
60		p,p'-DDE				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-784-6	72-55-9									
61		p,p'-DDD				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-783-0	72-54-8									
62		p,p'-methoxychlor				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		**<LOD**
			200-779-9	72-43-5									
63		endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6-ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3-ylenedimethylene sulfite				<0.6	mg/kg		<0.6	mg/kg	<0.00006 %		**<LOD**
		602-052-00-5	204-079-4	115-29-7									
										Total:	0.0196 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00387%)

Classification of sample: WS109-14/08/2024-0.40

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS109-14/08/2024-0.40
Sample Depth:
0.40-0.50 m
Moisture content:
23%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 23% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	16.266	mg/kg	0.00163 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29	mg/kg	1.462	32.637	mg/kg	0.00326 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	12.137	mg/kg	0.00121 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	27	mg/kg		20.79	mg/kg	0.00208 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07	mg/kg	1.353	0.073	mg/kg	0.0000073 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		19	mg/kg	2.022	29.588	mg/kg	0.00296 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.83	mg/kg	1.405	0.898	mg/kg	0.0000898 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		58	mg/kg	1.245	55.589	mg/kg	0.00556 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		35	mg/kg	1.785	48.111	mg/kg	0.00481 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		11	mg/kg		8.47	mg/kg	0.000847 %	✓	
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5	mg/kg	1.884	0.725	mg/kg	0.0000725 %	✓	
21		pH			PH		8.8	pH		8.8	pH	8.8 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
29		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0232 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00084%)

Classification of sample: TP104-14/08/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP104-14/08/2024-0.10
Moisture content:
17%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	12.055	mg/kg	0.00121 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.63	mg/kg	3.22	1.684	mg/kg	0.000168 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	29.114	mg/kg	0.00291 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		21	mg/kg	1.126	19.624	mg/kg	0.00196 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	30	mg/kg		24.9	mg/kg	0.00249 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.06	mg/kg	1.353	0.0674	mg/kg	0.00000674 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		18	mg/kg	2.022	30.215	mg/kg	0.00302 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.42	mg/kg	1.405	0.49	mg/kg	0.000049 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		65	mg/kg	1.245	67.152	mg/kg	0.00672 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		27	mg/kg	1.785	40.006	mg/kg	0.004 %	✓	
14		TPH (C6 to C40) petroleum group			TPH		11	mg/kg		9.13	mg/kg	0.000913 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
21		pH			PH		8.9	pH		8.9	pH	8.9 pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38		DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane	602-045-00-7	200-024-3	50-29-3		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
39		chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-047-00-8	200-349-0	57-74-9		<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
40		hexachlorocyclohexanes, including lindane				<0.8 mg/kg		<0.8 mg/kg	<0.00008 %		**<LOD**
		602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1							
41		dieldrin (ISO)				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		602-049-00-9	200-484-5	60-57-1							
42		endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene				<0.6 mg/kg		<0.6 mg/kg	<0.00006 %		**<LOD**
		602-051-00-X	200-775-7	72-20-8							
43		heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		602-046-00-2	200-962-3	76-44-8							
44		aldrin (ISO)				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		602-048-00-3	206-215-8	309-00-2							
45		monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
				P1186							
46		phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-033-00-6	206-052-2	298-02-2							
47		demeton-S (ISO); diethyl-S-2-ethylthioethyl phosphorothioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-029-00-4	204-801-8	126-75-0							
48		disulfoton (ISO); O,O-diethyl 2-ethylthioethyl phosphorodithioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-060-00-3	206-054-3	298-04-4							
49		fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-048-00-8	200-231-9	55-38-9							
50		trichloronate (ISO); O-ethyl O-2,4,5-trichlorophenyl ethylphosphonothioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-098-00-0	206-326-1	327-98-0							
51		azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-039-00-9	201-676-1	86-50-0							
52		coumaphos (ISO); O-3-chloro-4-methylcoumarin-7-yl O,O-diethyl phosphorothioate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		015-038-00-3	200-285-3	56-72-4							
53		simazine (ISO); 6-chloro-N,N'-diethyl-1,3,5-triazine-2,4-diamine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		612-088-00-3	204-535-2	122-34-9							
54		atrazine (ISO); 2-chloro-4-ethylamine-6-isopropylamine-1,3,5-triazine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-068-00-7	217-617-8	1912-24-9							
55		propazine (ISO); 2-chloro-4,6-bis(isopropylamino)-1,3,5-triazine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-067-00-1	205-359-9	139-40-2							
56		terbuthylazine (ISO); N-tert-butyl-6-chloro-N¢-ethyl-1,3,5-triazine- 2,4-diamine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-323-00-2	227-637-9	5915-41-3							
57		secbumeton (ISO); 2-sec-butylamino-4-ethylamino-6-methoxy-1,3,5-triazine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-063-00-X	247-554-1	26259-45-0							
58		simetryn (ISO); 2,4-bis(ethylamino)-6-methylthio-1,3,5-triazine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-065-00-0	213-801-7	1014-70-6							
59		ametryn (ISO); N-ethyl-N'-isopropyl-6-(methylthio)-1,3,5-triazine-2,4-diamine				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		613-010-00-0	212-634-7	834-12-8							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
60		heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
		602-063-00-5	213-831-0	1024-57-3							
61	•	p,p'-DDE				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
			200-784-6	72-55-9							
62	•	p,p'-DDD				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
			200-783-0	72-54-8							
63	•	p,p'-methoxychlor				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		**<LOD**
			200-779-9	72-43-5							
64		endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6-ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3-ylenedimethylene sulfite				<0.6 mg/kg		<0.6 mg/kg	<0.00006 %		**<LOD**
		602-052-00-5	204-079-4	115-29-7							
								Total:	0.0247 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00091%)

Classification of sample: HDP2-23/09/2024-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
HDP2-23/09/2024-0.10
Moisture content:
30%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 30% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13	mg/kg	1.32	12.015	mg/kg	0.0012 %	✓	
3		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	0.902	mg/kg	0.0000902 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23	mg/kg	1.462	23.531	mg/kg	0.00235 %	✓	
6		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13	mg/kg	1.126	10.246	mg/kg	0.00102 %	✓	
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	41	mg/kg		28.7	mg/kg	0.00287 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.11	mg/kg	1.353	0.104	mg/kg	0.0000104 %	✓	
10		nickel { nickel(II) carbonate }	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]		15	mg/kg	2.022	21.235	mg/kg	0.00212 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.87	mg/kg	1.405	0.856	mg/kg	0.0000856 %	✓	
12		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		70	mg/kg	1.245	60.991	mg/kg	0.0061 %	✓	
13		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		33	mg/kg	1.785	41.238	mg/kg	0.00412 %	✓	
14		TPH (C6 to C40) petroleum group			TPH		75	mg/kg		52.5	mg/kg	0.00525 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
16		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
17		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
18		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
19		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6	mg/kg	1.884	0.791	mg/kg	0.0000791 %	✓	
21		pH			PH		6	pH		6	pH	6pH		
22		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
23		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
29		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
											Total:	0.0258 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 500 mg/kg (0.05%)
because: It is highly unlikely that soils (generally a refractory matrix) will be classified as flammable at concentrations of 1.00% or less. (AGS, 2019). This property is thus disregarded as potentially flammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00525%)

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **p,p'-DDE** (EC Number: 200-784-6, CAS Number: 72-55-9)

Description/Comments: other names: 4,4'-DDE; 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene
Data source: ECHA's C&L inventory database

https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/21845
Data source date: 11 Jan 2018
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Acute Tox. 3; H331 , Acute Tox. 4; H332 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **p,p'-DDD** (EC Number: 200-783-0, CAS Number: 72-54-8)

Description/Comments: other names: Rhothane; p,p'-TDE; 4,4'-DDD; 4,4'-TDE;
Data source: ECHA's C&L inventory database

https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/21283
Data source date: 11 Jan 2018
Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 4; H312 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **p,p'-methoxychlor** (EC Number: 200-779-9, CAS Number: 72-43-5)

Description/Comments: other names: Methoxychlor; DMDT; Dimethoxy-DDT; Methoxy-DDT; Methoxcide; p,p'-Dimethoxydiphenyltrichloroethane; 1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane
Data source: ECHA's C&L inventory database

https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/112624
Data source date: 11 Jan 2018
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Acute Tox. 4; H332 , Carc. 2; H351 , Repr. 2; H361 , STOT SE 2; H371 , STOT RE 2; H373 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

There is an insufficient quantity of Chromium VI available to stoichiometrically form Chromate Compounds, as such the next most likely worse-case species has been selected for assessment. The concentration of Chromium VI is noted to be less than the detection limit of the analytical test.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) carbonate}

Reasonable case CLP entry as halides, hexacyanoferrate, and sulfate are very soluble, thiocyanate is not likely to be present from industrial uses and is also soluble, insufficient Hexavalent Chromium to form the chromate species. Nickel Carbonate is largely insoluble and present in ceramics and potteries that may be present in Made Ground particularly.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc oxide}

Most likely species of Zinc in soil is as Zinc Oxide or Silicate. Sulfates and Chlorides are very soluble and unlikely to be present. Sulfides are unlikely to be present in this sample. Silicate is not an option. Zinc Oxide is selected as the most likely species.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Only species available

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.278.6277.11496 (04 Oct 2024)
HazWasteOnline Database: 2024.278.6277.11496 (04 Oct 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024

Appendix X

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 01

Comments:

WS101: G.L to 2.00m (Left to Right), borehole terminated at 2.00m begl due to refusal.

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 02

Comments:

WS102: G.L to 2.70m (Left to Right), borehole terminated at 2.70m begl due to refusal.

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 03

Comments:

WS103: G.L to 2.65m (Left to Right), borehole terminated at 2.65m begl due to refusal.

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 04

Comments:

WS104: G.L to 3.00m (Left to Right), borehole terminated at 3.00m begl due to refusal.

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 05

Comments:

WS105: G.L to 3.00m (Left to Right), borehole terminated at 3.00m begl due to refusal.

Client: WEPCo

Date: 14/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 06

Comments:

WS106: G.L to 3.55m (Left to Right), borehole terminated at 3.55m begl due to refusal.

Client: WEPCo

Date: 15/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 07

Comments:

WS107: G.L to 3.00m (Left to Right), borehole terminated at 3.00m begl due to refusal.

Client: WEPCo

Date: 15/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 08

Comments:

WS108: G.L to 2.00m (Left to Right), borehole terminated at 2.00m begl due to refusal.

Client: WEPCo

Date: 15/08/2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 09

Comments:

WS109: G.L to 3.00m (Left to Right), borehole terminated at 3.00m begl due to refusal.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 01

Comments:
SA201: Machine dug trial pit from G.L to 1.90m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 02

Comments:
SA201: Spoil from SA201.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 03

Comments:
SA202: Machine dug trial pit from G.L to 1.70m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 04

Comments:
SA202: Spoil from SA202.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 05

Comments:
SA203: Machine dug trial pit from G.L to 1.75m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 06

Comments:
SA203: Spoil from SA203.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 07

Comments:
SA204: Machine dug trial pit from G.L to 1.70m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 08

Comments:
SA204: Spoil from SA204.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 09

Comments:
SA205: Machine dug trial pit from G.L to 1.50m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 10

Comments:
SA205: Spoil from SA205.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 11

Comments:
SA206: Machine dug trial pit from G.L to 1.70m begl.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 12

Comments:
SA206: Spoil from SA206.

Client: WEPCo

Date: 13.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 13

Comments:
SA207: Machine dug trial pit from G.L to 1.80m begl.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 14

Comments:
SA207: Spoil from SA207.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 15

Comments:
TP01: Hand dug pit to 0.90m begl.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 16

Comments:
TP101: Hand dug pit to 0.90m begl.

Service located at depth, assumed to be 100mm diameter cast iron pipe.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 17

Comments:
TP02: Hand dug pit to 1.20m begl.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 18

Comments:
TP101: Hand dug pit to 0.90m begl.

Service located at depth, assumed to be 100mm diameter cast iron pipe.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 19

Comments:
TP03: Hand dug pit to 0.55m begl.

Client: WEPCo

Date: 12.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 20

Comments:
TP103: Hand dug pit to 0.55m begl.

Service ‘joint’ located at depth, assumed to be 25mm diameter lead pipe.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 21

Comments:
TP104: Machine dug trial pit from G.L to 2.50m begl.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 22

Comments:
TP104: Spoil from TP104.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 23

Comments:
TP105: Machine dug trial pit from G.L to 2.50m begl.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 24

Comments:
TP105: Spoil from TP105.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 25

Comments:
TP106: Machine dug trial pit from G.L to 2.50m begl.

Client: WEPCo

Date: 14.08.2024

Project No: C4103

Site: Coleg Sir Gar

Photo No: 26

Comments:
TP106: Spoil from TP106.

hsp consulting

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