SUMMIT
GEOTECHNICS

Ground Investigation Report

Penistone Footbridge and Car Park

Client: Sable Leigh Consultancy Limited

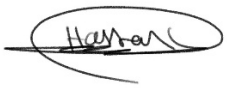
Project Number: 1002

Document Number: SGL-1002-SLC-REP-GI-001 P02

Client Document Number: PNS-SLC-XX-REP-GEO-0001

October 2026

Quality Information

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Revision History

Revision	Date	Details
P01	22/09/2026	First issue
P02	07/10/2026	Second issue

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The methodology adopted and the sources of information used by Summit in providing its services are outlined in this report. The work described in this report was undertaken between 26th May and 7th October 2026 and is based on the conditions encountered and the information available during said period. The scope of this report and the services are accordingly factually limited by these circumstances. Summit shall not be liable for any change in the conditions after they were encountered by Summit and/or any change in the information and/or assumptions based on which this report was prepared. Summit disclaims any undertaking or obligation to advise any person of any change in any matter affecting this report, which may come or be brought to Summit's attention after the date of this report.

The exploratory holes carried out during the fieldwork, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The comments made and recommendations given in this report are based on the ground conditions apparent at the site of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation, and which have therefore not been considered in this report.

The comments made on groundwater conditions are based on observations made during site work and the limited monitoring programme. It should be noted that groundwater levels might vary owing to seasonal or other effects.

The site reconnaissance consisted of a general external inspection of the site aimed at identifying any obvious signs of geotechnical hazards and potential sources of ground contamination affecting the site. An environmental compliance audit and/or detailed structural inspection of existing buildings were outside the project brief. Similarly, the site visit excluded detailed consideration of the ecological or archaeological aspects of the site, and if such are believed to be of potential significance then it is recommended that specialist advice is sought.

The opinions expressed in this report concerning any contamination found and the risks arising there from are based on current good practice simple statistical assessment and comparison with available soil guideline values, Summit generic assessment criteria and other guidance values.

It should be noted that the effects of ground and water borne contamination on the environment are constantly under review, and authoritative guidance values are potentially subject to change. The conclusions presented herein are based on the guidance values available at the time this report was prepared; however, no liability by Summit can be accepted for the retrospective effects of any changes or amendments to these values.

Table of Contents

Executive Summary 1
Abbreviations 2
1. Introduction 3
1.1. Terms of Appointment 3
1.2. Background 3
1.3. Scope and Objectives 4
1.4. Geotechnical Category 4
1.5. Other Relevant Information 4
2. Site Setting 5
2.1. Site Location and Description 5
2.2. Site History 6
2.3. Site Walkover 6
2.4. Preliminary Conceptual Site Model 7
2.5. Geology 7
2.6. Hydrology and Hydrogeology 9
3. 2026 Ground Investigation 12
3.1. Introduction 12
3.2. Ground Investigation Design 12
3.3. Fieldwork Summary 12
4. Ground Conditions 15
4.1. Made Ground 15
4.2. Superficial Deposits 15
4.3. Bedrock Geology 15
4.4. Groundwater 15
4.5. Stratigraphy 16
4.6. Ground Properties 16
5. Geotechnical Assessment 21
5.1. Introduction 21
5.2. Footbridge, Lift and Stairs 21
5.3. Car Park 23
5.4. Mining 25
5.5. Enabling Works 25

6. Geo-Environmental Assessment 26
6.1. Introduction 26
6.2. Human Health Risk Assessment 26
6.3. Controlled Waters Risk Assessment 27
6.4. Conceptual Site Model Update 27
6.5. Material Re-Use 27
7. Conclusions 29
7.1. Key Findings 29
7.2. Next Steps 29
8. Geotechnical Risk Register 30
8.1. Introduction 30
9. References 32
Appendix A Drawings 36
Appendix B Figures 37
Appendix C Site Walkover Photographs 48
Appendix D GI Contractor's Factual Report 55
Appendix E Human Health Screening Tables 56

Figures

Figure 1: Site location overview (after Google [9], annotations by SLC (white arrows) [2] and Summit (red arrows)) 5
Figure 2: Summary of CSM (post-development) 7
Figure 3: Location of BGS Borehole Record SE20SE19 relative to site (basemap: Ordnance Survey ©) 8
Figure 4: Eurocode 7 Part 1 Annex G extract (after BS EN 1997-1 [4]) 22

Tables

Table 1: List of abbreviations 2
Table 2: Summary of proposed works 3
Table 3: Site description 6
Table 4: Existing railway infrastructure 6
Table 5: General geological succession 7
Table 6: Recorded ground conditions – Arc Environmental Ltd GI 9
Table 7: BGS hydrogeological classification 10
Table 8: Relevant hydrology and hydrogeology features 11
Table 9: Summary of exploratory hole locations 13

Table 10: Summary of geotechnical laboratory testing 13
Table 11: Summary of chemical laboratory testing 13
Table 12: Summary of groundwater strikes 15
Table 13: Summary of groundwater level monitoring 16
Table 14: Recorded ground conditions 16
Table 15: Physical properties 18
Table 16: Summary of BRE SD1 testing 19
Table 17: Summary of soakaway infiltration testing 19
Table 18: Summary of plate load testing 19
Table 19: Summary of ground properties 20
Table 20: Indicative footbridge, lift and stairs foundation ground profile 21
Table 21: Indicative foundation dimensions 22
Table 22: Risk register scoring system 30
Table 23: Geotechnical risk register 30

Executive Summary

Summit Geotechnics Ltd has been commissioned by Sable Leigh Consultancy Limited to prepare this Ground Investigation Report for the Penistone Footbridge and Car Park project, supporting the transition from PACE Milestone ES4 to ES5. This report also supports the full planning application associated with the Car Park elements of the scheme. The proposed footbridge, lifts and stairs do not form part of the development for which full planning permission is sought and are subject to a separate consenting process. References to the footbridge elements are therefore provided in context of the wider scheme.

A ground investigation was carried out by Rogers Geotechnical Services Ltd between 1st June and 12th August 2026, comprising three boreholes to a maximum depth of 31.00m bgl and eight trial pits to a maximum depth of 2.60m bgl, together with in situ and laboratory testing and post-fieldwork groundwater monitoring. Approximately half of the proposed car park site could not be assessed due to dense vegetation. The area directly beneath the proposed footbridge, lift and stairs foundations could not be investigated as permission was not granted by Network Rail.

The ground investigation proved a general sequence of Mad [1]e Ground over Pennine Lower Coal Measures, comprising weathered mudstone over interbedded mudstone, siltstone and sandstone. An intact coal seam (0.95m thick) was recorded at 27.90-28.85m bgl in BH101m with no evidence of broken ground associated with historical mine workings. Grensoside Sandstone, although mapped, was not encountered as the north-eastern part of the site remained inaccessible.

Key findings and recommendations are summarised below:

- Shallow spread foundations within the PLCM mudstone are considered a feasible preliminary option for the footbridge, lift and stairs. The foundation solution and dimensions will be confirmed during ES5, following targeted GI beneath the proposed foundations, receipt of the full structural reactions and the structures serviceability criteria. Piled foundations may need to be considered depending on these findings;
- The car park pavement subgrade offers a design CBR of 5–7%, with a design surface modulus of 50MPa recommended per CD 225;
- Infiltration drainage is not recommended as the primary drainage solution, given variability in measured infiltration rates; an alternative solution (e.g. attenuation and offsite discharge) should be adopted;
- The risk to human health is assessed as VERY LOW for the proposed commercial/industrial end use, and risk to controlled waters is assessed as LOW;
- Legacy mining risk is assessed as Very Low to Low, though further targeted GI is recommended to confirm the assumptions underlying this assessment; and
- Further targeted GI is required beneath the footbridge, lift and stairs foundations and across the inaccessible eastern half of the car park site to confirm founding conditions ahead of GDR.

Abbreviations

Table 1 lists the abbreviations used in this report.

Table 1: List of abbreviations

Abbreviation	Definition
ACEC	Aggressive Chemical Environment for Concrete
AGS	Association of Geotechnical and Geo-environmental Specialists
ASPRO	Asset Protection and Engineering Assurance
BAPA	Basic Asset Protection Agreement
BH	Borehole
BGS	British Geological Survey
BMBC	Barnsley Metropolitan Borough Council
BRE	Building Research Establishment
c.	Circa
C4UL	Category 4 Screening Levels
CBR	California Bearing Ratio
CDM	Construction (Design and Management)
CSM	Conceptual Site Model
Defra	Department for Food and Rural Affairs
E	Subgrade Surface Modulus
ELR	Engineer's Line Reference
GAC	Generic Assessment Criteria
GDR	Geotechnical Design Report
GI	Ground Investigation
GIR	Ground Investigation Report
k_{762}	Modulus of Subgrade Reaction
m bgl	Metres below ground level
m OD	Metres above Ordnance Datum
M.Yds	Miles and Yards
MDD	Maximum Dry Density
MRA	Mining Risk Assessment
NR	Network Rail
OS	Ordnance Survey
OWC	Optimum Water Content
P1	Platform 1
P2	Platform 2
PACE	Project Acceleration in a Controlled Environment
PLCM	Pennine Lower Coal Measures
POSR	Preferred Option Selection Report
RGS	Rogers Geotechncial Services Ltd
S4UL	Suitable 4 Use Levels
SD	Special Digest
SLC	Sable Leigh Consultancy Limited
SOM	Soil Organic Matter
SPC	Penistone Signal Crossing
Summit	Summit Geotechnics Ltd
TP	Trial Pit
UCS	Unconfined Compressive Strength

1. Introduction

1.1. Terms of Appointment

Summit has been commissioned by Sable Leigh Consultancy Limited (the "Client") to prepare a Ground Investigation Report (GIR) for the Penistone Footbridge and Car Park project.

The purpose of this report is to present and evaluate the available ground investigation (GI) information and provide a geotechnical and geo-environmental assessment, and recommendations for the design and construction of the proposed footbridge, lift and stairs, and car park, based on the findings of the GI described herein.

1.2. Background

This report is the GIR for the Penistone Footbridge and Car Park project. The project covers Engineer's Line Reference (ELR) PEH mileages from 13 miles 704 yards (13.0704 M.Yds) to 13 miles 858 yards (13.0858 M.Yds). Any reported mileages in this report are given in miles and yards (M.Yds) to the nearest 5 yards and are indicative only, unless stated otherwise.

The project aims to deliver:

- The design and construction of a new footbridge with lifts and stairs at the unstaffed Penistone Station;
- A car park on the east (Up) side of the station with vehicular and pedestrian access from Lairds Way. The car park will provide at-grade and ramped access to Platform 1, and lift access to the footbridge;
- Alterations to the existing forecourt on the west (Down) side of the station, and to the existing platforms to accommodate the construction of the bridge, lifts and stairs;
- The existing barrow crossing will be closed and removed once the lift and bridge interchange is in place on the platform;
- No changes to the track or signalling systems are proposed (except for minor relocation of one of the OFF indicators for signal BY1053); and
- The platform-train interface will not be affected.

The project is within Project Acceleration in a Controlled Environment (PACE) Milestone ES4 Approval in Principle [2] at the time of issue. The Client prepared a Preferred Option Scoring Report (POSR) [3] at ES3 that outlined the proposed works; these are summarised Table 2.

Table 2: Summary of proposed works

Proposed Work Package	Works Summary
Forecourt	• Installation of new SOD to new platform access point. • Installation of new station braille map. • Installation of designated crossing points. • Enlarged short-stay bay for pick-up/drop-off. • Cycle storage facilities.
Footbridge, Lift and Stairs	• Construction of new AVA-type footbridge with lift and stairs towards the northern part of the platforms, providing access to the proposed car park (see row below). • Closure of existing barrow crossing. • Construction of ramp to provide alternative access from Laird's Way to Platform 1.

Proposed Work Package	Works Summary
Car Park	• Construction of new at-grade car park. The car park will provide 101no. spaces, comprising 64no. standard, seven accessible, five enlarged, 12no. electric vehicle (plus 17no. passive provision), and three pick-up/drop-off.

The Client appointed Summit to deliver the geotechnical scope for ES4. This comprised completion of a Mining Risk Assessment [4], design of an intrusive GI and production of a GIR. A copy of the ES4 Proposed General Arrangement is included in Appendix A.

1.3. Scope and Objectives

The purpose of this GIR is to provide:

- An updated conceptual ground model based on the GI findings;
- Foundation strategy for the footbridge, lift and stairs;
- Pavement subgrade assessment and minimum California bearing ratio (CBR) for the car park pavement foundation design to inform the Highways Form F;
- Infiltration drainage assessment;
- Contaminated land assessment;
- Retaining structure interface assessment;
- Information on anticipated enabling works;
- Groundwater assessment, including perched groundwater risk and implications for excavation and construction.

1.4. Geotechnical Category

The proposed footbridge, lift and stairs foundations have been assessed as Geotechnical Category 2 in accordance with BS EN 1997-1 clause 2.1 [5]. Minor ancillary assets have been assessed as Geotechnical Category 1. The classifications should be reviewed during subsequent design stages as the asset requirements and ground conditions are confirmed.

1.5. Other Relevant Information

The key documents that have been consulted in the preparation of this report are:

- Arup (2023). Penistone Station Park and Ride, Geotechnical and Geo-environmental Desk Study [6], including the following appendices:
    - Groundsure (2023). Enviro+Geo Insight Report [7];
    - Groundsure (2023). Map Insights Report [8];
    - The Coal Authority (2023). Consultants Coal Mining Report [9];
- Rogers Geotechnical Services (2026). Factual Report, Land adjacent to Penistone Station (Appendix D);
- SLC (2026). Penistone Footbridge & Car Park, ES3 Preferred Option Scoping Report [3]; and
- Summit (2026). Penistone Footbridge and Car Park, Mining Risk Assessment [4].

A full list of referenced material is provided in Section 9.

2. Site Setting

2.1. Site Location and Description

The site comprises land at and adjacent to Penistone Station, approximately 500m east of Penistone town centre, centred on approximate National Grid Reference SE251033. The station has two platforms:

- Platform 1 (P1): Located east of the tracks.
- Platform 2 (P2): Located west of the tracks, with primary access via the station forecourt and secondary, non-vehicular access from Trans Pennine Trail at the southern end of the platform.

Access between the platforms is provided by a barrow crossing at their southern end, as shown in Figure 1. The land immediately east of the railway, where the car park is proposed, comprises approximately equal areas of open grassland and dense vegetation. A derelict building and a substation are also present.

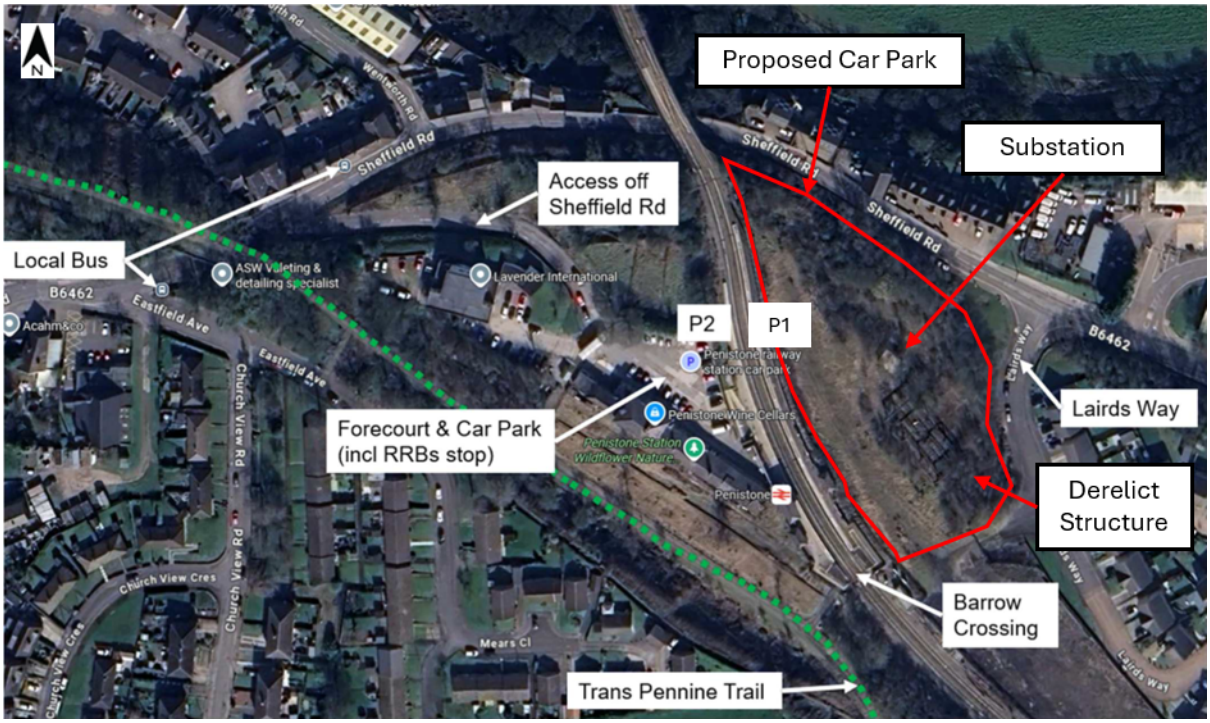


Figure 1: Site location overview (after Google [10], annotations by SLC (white arrows) [3] and Summit (red arrows))

A description of the site and existing railway infrastructure is included in Table 3 and Table 4, respectively.

Table 3: Site description

Extent (M.Yds)	Track Elevation (m OD)[1]	Route Description	Site Surrounds	Watercourses & Bodies
13.0704 to 13.0858	213.2 (low miles) to 214.2 (high miles)	North-north-west (low miles) to south-south-east (high miles). Gentle curve to the west on approach to Penistone Station.	North: Penistone Viaduct East: Residential housing. South: Playing fields and residential housing. West: Residential housing.	The Rover Don is situated c. 35m north of the site at its closest point.

Notes

[1] Estimated from Defra LiDAR data [11].

Table 4: Existing railway infrastructure

Track[1]	Stations & Buildings[1]	Structures & Crossings[1]	Earthworks[2]	Drainage[2]	Signalling
Double tracked, no electrification infrastructure.	13.0792: Penistone Station.	13.0858: Penistone Station Crossing (SPC).	Track appears to be sat on embankment.	Assumed to comprise track drainage only.	• BY1050: south end of Platform 2. • BY1052: south end of Platform 1. • BY1053: north end of Platform 2.

Notes

[1] Data obtained from Railway Data Centre [12].

[2] Based on visual assessment.

2.2. Site History

Research states Penistone railway station opened in 1874, replacing an earlier station on the Woodhead Line that first opened in 1845, and has largely remained unchanged since. The present-day land usage of the proposed car park site was mapped as being used for storage of unknown materials from 1999, including a building. The car park site had been cleared the building partially demolished by 2009. The main structure, steel frame and foundations, remain intact to present. Further discussion on the site history is presented in Section 3.1 of the Arup Desk Study [6].

2.3. Site Walkover

A site walkover was carried out by Summit on the 1st of June 2026 to assist with the planning and design of the GI. The weather conditions were overcast. Relevant photographs are included in Appendix C.

The site comprises land immediately east of Penistone Station and a section of the Trans Pennine Trail, a public footpath used by pedestrians and cyclists.

The land immediately east of Penistone Station, where the car park is proposed, comprises a mix of open grassland and dense, established vegetation (scrubland and mature trees) covering

approximately half of the proposed car park footprint. A derelict structure, with its original steel frame and foundations still intact, is present within the eastern half of the car park site. An electricity substation is located immediately to the north of this structure.

Topography across the car park area is generally flat and is of higher elevation than the land to the north and east as evidenced by a retaining wall forming the boundary.

2.4. Preliminary Conceptual Site Model

Arup presented a preliminary Conceptual Site Model (CSM) in their Desk Study [6] (Figure 2). An update to the CSM is provided in Section 6.4 based on the findings of the GI.

Table 4: Summary of conceptual model (post-development)

Sources		Pathways		Receptors	Comment
Contaminants in made ground	→	Dermal contact with soils	→	Site workers during construction Maintenance workers Users of future site (only in soft landscaping areas),	Ground investigation is recommended to assess whether contaminated soils are present. Appropriate site management protocols to be adopted during construction and maintenance works. A clean cover system to be installed in soft landscaping areas underlain by contaminated made ground.
		Ingestion of soil, fibres or dust	→		
		Inhalation of soil vapours and ground gases	→	Site workers during construction, commuters accessing train station and site neighbours Maintenance workers Users of future site (only in soft landscaping areas),	
		Inhalation of soil dust	→		
Leachable contaminants in the made ground	X	Vertical migration of dissolved phase contamination	→	Groundwater within the Pennine Lower Coal Measures Formation and Grenoside Sandstone (Secondary A aquifer)	Infiltration and potential for vertical migration will be limited by hardstanding. No further assessment unless ground investigation identifies significant soil contamination.
Ground gases	X	Accumulation of gases in confined spaces producing asphyxiation and explosion risk	→	Users of future site	No significant source identified. Site use for surface parking limits the presence of confined spaces. No further assessment.

Figure 2: Summary of CSM (post-development)

2.5. Geology

Geological information from published BGS mapping of various scales [13] [14] [15], GeoIndex Onshore [16] and local memoirs [17] [18] have been reviewed. The general geological succession is anticipated to comprise limited made ground over PLCM. No superficial deposits are mapped at the site. The general geological succession is summarised in Table 5.

Table 5: General geological succession

Period	Type	Stratum	Summary Description
Quaternary	Artificial Ground	Made Ground	Variable made ground associated with site's former use.
Carboniferous	Bedrock Geology	Pennine Lower Coal Measures (PLCM)	Mudstone, siltstone and sandstone with subordinate coal, ironstone, seatearth and marine bands.

Period	Type	Stratum	Summary Description
Carboniferous	Bedrock Geology	Grenoside Sandstone (PLCM member)	Fine- to coarse grained, thickly cross-bedded micaceous SANDSTONE.

2.5.1. Structural Geology

A geological fault is shown parallel to the north-eastern side of the site, just within the site boundary, with strata downthrown to the south. PLCM are mapped to the south of the fault and its member Grenoside Sandstone to the north.

2.5.2. BGS Borehole Records and Previous Ground Investigations

The BGS "Borehole records" dataset [16] contains one record within 250m of the site (Reference: SE20SE19) and its location relative to the site is shown on Figure 3. However, the scan does not contain any useful information.



Figure 3: Location of BGS Borehole Record SE20SE19 relative to site (basemap: Ordnance Survey ©)

A GI was carried out c. 16m east of the site [9], designed and completed by Arc Environmental Ltd [19]. The works comprised:

- Four cable percussive boreholes;
- Three rotary open hole boreholes;
- Seven mechanically excavated trial pits;
- Installation of three combined ground gas and groundwater monitoring wells.

The recorded ground conditions are summarised in Table 6. No coordinates or ground level data was captured during the GI.

Table 6: Recorded ground conditions – Arc Environmental Ltd GI

Stratum	Depth to Top (m bgl)	Depth to Base (m bgl)	Thickness (m)	Summary Description
Made Ground	0	6.70	2.50-6.70	Mixtures of clay, sand and gravel containing predominantly brick, concrete and slag rubbish, ash, cinder, clinker, coal and burnt siltstone.
"Drift Geology"	2.50	4.10	1.60	Soft silty sandy gravelly clay and firm to stiff slightly sandy slightly gravelly clay. A relic topsoil later was recorded in one of the trial pits. No superficial ("drift") deposits are mapped and so it is likely that this unit refers to weathered PLCM, or placed fill as suggested by the relic topsoil layer.
PLCM	3.15	30.00	>26.85 Base not proven	Interbedded yellowish light brown siltstone and grey mudstone. No coal seams were encountered and no soft ground indicative of broken ground associated with historical mine workings was encountered across the site. Consistent drilling rates and between 50 and 100% of the flush medium was maintained during the drilling period.

The Arc Environmental Ltd GI recorded Made Ground overlying PLCM and did not identify broken ground indicative of mine workings. However, it encountered substantially thicker Made Ground and deeper rockhead than the 2026 GI (Section 3), and no coal seam was recorded to 30m bgl. As coordinates and ground levels are unavailable, the Arc findings cannot be reliably correlated with the site-specific GI or used to confirm the elevation and continuity of the coal seam beneath the proposed development. This GI data is therefore treated as contextual offsite information only.

2.6. Hydrology and Hydrogeology

A review of hydrology and hydrogeology data from the Enviro+Geo Insight Report [7], the Department for Food and Rural Affairs' (Defra) online MAGiC Map Application [20], OS mapping and BGS hydrogeological mapping [16] has been carried out. Details of the hydrogeological features and surface water features within 100m of the site are summarised in Table 7 and

Table 8, respectively.

Table 7: BGS hydrogeological classification

Rock Unit	Character	Summary
Pennine Lower Coal Measures	Moderately productive aquifer	Regional, cycle multi-layered aquifer with moderate yields from sandstones and many springs. Mine water quality poor but elsewhere reasonable.

Table 8: Relevant hydrology and hydrogeology features

Relevant Feature	Onsite	Offsite [1]
Bedrock aquifer designation	Secondary A	Secondary A
Groundwater vulnerability	Medium	Medium
Source protection zone(s)	None identified	None identified
Surface water features	None identified	River Don
Flood risk [2]	N/A	Zone 2 and 3
Other environmental considerations [3]	None identified	None identified
Mine water treatment scheme(s) [4]	None identified	None identified

Notes

[1] Offsite considered within 100m of the site. [2] Data from Enviro+Geo Insights Report [3] Statutory designations [20]. [3] Data from Consultants Coal Mining Report.

3. 2026 Ground Investigation

3.1. Introduction

A GI was carried out by Rogers Geotechnical Services Ltd (RGS) between 1st June and 12th August 2026. The aim of the GI was to undertake an intrusive investigation of the proposed car park site and sink boreholes either side of the proposed footbridge, lift and stairs to allow the stratigraphic sequence under the proposed structure to be interpreted. The RGS Factual Report included as Appendix D.

3.2. Ground Investigation Design

The GI was scoped and specified by Summit [21]. Summit carried out the Construction (Design and Management) Regulations (CDM) 2015 role of Designer, with RGS acting as the Principal Contractor and SLC as both the Client and Principal Designer.

The GI was designed in general accordance with BS EN 1997-1 [5] and BS 5930 [22], and the specification prepared in accordance with the UK Specification for Ground Investigation [23].

There was no Network Rail (NR) Basic Asset Protection Agreement (BAPA) in place at the time of the GI meaning that locations could only be located within land owned by Barnsley Metropolitan Council. Additionally, NR had instructed that boreholes be placed at least 25m from the operational railway. There were further restrictions on the investigation area as approximately half of the proposed car park site was covered in dense vegetation meaning it was inaccessible.

These restrictions prevented intrusive investigation at, or sufficiently close to, some of the proposed foundation locations, including the footbridge, lift and stair areas. Consequently, the ground conditions beneath these assets have been interpreted by extrapolation from the available exploratory holes. This reduces confidence in the local depth and variability of made ground and rockhead and limits the ability of the investigation to confirm local mining-related conditions as noted in the MRA [4]. Further GI is required to confirm the assumptions made in inferring ground conditions under the non-investigated areas.

3.3. Fieldwork Summary

The fieldwork comprised:

- PAS 128 Type B M2 survey at all exploratory hole locations;
- Three dynamic sampling rotary core follow-on boreholes (BH) to a maximum depth of 31m below ground level (bgl) and installation of groundwater monitoring wells;
- Eight machine-excavated trial pits (TP) to a maximum depth of 2.60m bgl;
- In situ and laboratory testing; and
- Groundwater level monitoring during and post-fieldwork.

The as-built location of the exploratory hole locations is shown on Drawing SGL-1002-SLC-DRG-GI-001, with relevant information summarised in Table 6.

Table 9: Summary of exploratory hole locations

Hole ID	Type	Easting, Northing (m)	Ground Level (m OD)	Final Depth (m bgl)
BH101	BH	425134.27, 403315.45	213.05	31.00
BH102	BH	424974.52, 403313.15	216.43	11.00
BH103	BH	425095.03, 403232.19	214.84	12.00
TP201	TP	425113.77, 403346.89	213.08	1.50
TP202	TP	425116.36, 403329.64	213.14	1.10
TP203	TP	425118.04, 403323.74	213.15	2.60
TP204	TP	425121.93, 403308.91	213.19	1.60
TP205	TP	425126.82, 403293.93	213.39	2.40
TP207	TP	425145.94, 403275.64	213.38	2.10
TP208	TP	425147.67, 403270.44	213.38	1.60
TP209	TP	425156.07, 403258.98	213.35	2.40

3.3.1. In Situ Testing

The in situ testing comprised:

- Five standard penetration tests carried out in boreholes;
- Two soakaway infiltration tests carried out in trial pits; and
- Four plate load tests carried out in trial pits.

3.3.2. Laboratory Testing

Geotechnical laboratory testing was carried out by RGS using their in-house accredited laboratory. Laboratory test certificates are presented in Appendix 7 of the Factual Report (Appendix D) and a summary of the testing completed shown in Table 10.

Table 10: Summary of geotechnical laboratory testing

Test Type	No. of Tests
Water content	8
Dry density/water content relationship using 2.5kg rammer	5
Dry density/water content relationship using 4.5kg rammer	3
Dry density/water content relationship using vibrating rammer	2
Natural water content of rock	1
Uniaxial compressive strength	1
Single measurement of point load strength on irregular rock lump	Axial: 23 Diametral: 13 Irregular: 7

Chemical laboratory testing was subcontracted to i2 Analytical Ltd and their accredited laboratory. Laboratory test certificates are presented in Appendix 7 of the Factual Report (Appendix D) and summarised in Table 11.

Table 11: Summary of chemical laboratory testing

Test Suite	No. of Tests
E1 – Soil samples general	18
E2 – Soil samples Asbestos	18
E3 – Soil samples TPHCWG	8
E4 – Soil samples PAH	8
E5 – Soil samples BTEX	6
E6 – Soil samples VOC and SVOC	5
E7 – Soil samples PCB	5
BRE SD1 Suite D	6

Notes

[1] Full summary of testing determinants is available in the Specification [21].

3.3.3. Groundwater Monitoring

Groundwater level monitoring was carried out within boreholes during the fieldwork period. Four post-fieldwork monitoring visits were carried out where groundwater levels within monitoring wells. The monitoring period ran between 22nd July and 12th August 2026.

4. Ground Conditions

4.1. Made Ground

Made Ground was proven in all exploratory holes at ground level with a proven thickness between 0.20 and 0.75m. The Made Ground, labelled “Topsoil” on the exploratory hole logs, comprised granular soils with general construction/demolition waste. No visual or olfactory evidence of hydrocarbon contamination was recorded on the exploratory hole logs.

4.2. Superficial Deposits

Superficial deposits are not mapped at the site and were not encountered during the GI.

4.3. Bedrock Geology

The bedrock geology comprises interbedded mudstone, siltstone and sandstone of the PLCM. The weathered top was recorded in BH101 between 0.25 and 1.10m bgl (212.8 and 211.95m OD); this transition between the weathered top and rockhead was not recorded on the trial pit logs. Mudstone is encountered throughout with interbeds of siltstone and sandstone from 10.90m. Intact coal was encountered between 27.90 and 28.85m bgl (0.95m thick) with no evidence of soft ground indicative of broken ground associated with historical mine workings.

Grenoside Sandstone, a member of the PLCM, is mapped at the north-eastern portion of the site, north of a fault (Section 2.5.1). This geology was not encountered as this portion of the site was inaccessible during the GI due to dense vegetation cover.

Penistone Flags Sandstone was recorded in BH102 at depths between 0.65 and 3.45m bgl (215.78 and 212.98m OD). This stratum is not expected to be present under the proposed development.

4.4. Groundwater

Groundwater strikes were recorded in two of the exploratory hole locations within the PLCM (Table 12).

Table 12: Summary of groundwater strikes

Hole ID	Groundwater Strike Level (m bgl / m OD)	Groundwater Level after 20 minutes (m bgl / m OD)	Comment
BH101	7.00	4.80	Strike and rise recorded within PLCM.
BH103	1.20	1.20	
	2.00	2.00	

The results of the post-fieldwork groundwater level monitoring are summarised in Table 13. Response zones were installed in PLCM in all boreholes. A plot of groundwater levels recorded during the monitoring period is presented as Figure 1 (Appendix B). It should be noted that all groundwater level readings were obtained during the summer and that higher levels would be expected during the winter months.

Table 13: Summary of groundwater level monitoring

Hole ID	Response Zone (m bgl)	Groundwater Level (m bgl/ m OD) Minimum	Maximum	Mean	Comment
BH101	1.50-10.00	5.40 / 207.65	9.19 / 203.86	7.15 / 205.90	Groundwater level fell across monitoring period.
BH102		10.01 / 206.42	10.03 / 206.40	10.02 / 206.41	Not thought to be representative groundwater table but instead water trapped within monitoring well. Recorded as dry on final visit.
BH103		7.11 / 207.73	7.24 / 207.60	7.54 / 207.31	Groundwater level rose between rounds 1 and 2 and then remained relatively consistent for rounds 3 and 4.

4.5. Stratigraphy

The recorded ground conditions are summarised in Table 14 and visualised as 2D geological sections A-A' (Drawing SGL-1002-SLC-DRG-GI-002) and B-B' (Drawing SGL-1002-SLC-DRG-GI-003) in Appendix A.

Table 14: Recorded ground conditions

Stratum	Depth to Top (m bgl [m OD])	Depth to Base (m bgl [m OD])	Thickness Range (m)	Summary Description
Made Ground	0 [216.43-213.05]	0.20-0.75 [215.78-212.39]	0.20-0.75	Dark brown organic silty very sandy angular to subangular fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse.
Penistone Flags	0.65 [215.78]	3.45 [212.98]	2.80	Orangish brown fine- to medium-grained SANDSTONE (BH102 only).
Weathered Pennine Lower Coal Measures	0.25 [212.80]	1.10 [211.95]	0.85	Weathered mudstone comprising yellowish brown very sandy silty angular and subangular fine to coarse GRAVEL of sandstone.
Pennine Lower Coal Measures	0.20-3.45 [214.24-211.95]	1.00-31.00 [212.04-182.05] Not proven	Not proven, investigation terminated at maximum 31.00m bgl	Interbedded MUDSTONE, SILTSTONE and SANDSTONE. Coal seam recorded from 27.90 to 28.85m (0.95m thick).

It should be noted that Table 14 presents the recorded ground conditions across the site and that the anticipated stratigraphy across the site may differ. It must also be noted that approximately half of the car park site was not able to be investigated during this phase, including where a fault is recorded (Section 2.5.1), as well as directly under the footprint of the proposed footbridge, lift and stairs foundations. Further GI is required to confirm these assumptions and provide a more robust dataset to enable detailed design.

4.6. Ground Properties

4.6.1. Physical Properties

Physical properties for PLCM have been measured from laboratory testing and are summarised in Table 15. No laboratory testing was performed on Made Ground samples and data for the Penistone Flags has not been considered as they are not expected to be encountered under the proposed development.

Direct values constitute values measured directly via field or laboratory testing. Derived values constitute values derived via empirical correlations, engineering judgment or reference to design codes. Supporting figures are provided in Appendix B.

Table 15: Physical properties

Property	No. of Results	Direct Value Range	Derived Value Range	Mean Value	Comment	Figure Ref.
Bulk unit weight (kN/m^3)	1	24.82	22-25	24.82	Bulk density measured as part of UCS test. Derived value taken from lookup table [24].	-
Water content (%)	8	6.50-9.90	-	8.20	Values correspond to weathered zone.	1 & 2
	38	1.90-8.70	-	4.43	Values correspond to competent rock.	
Maximum dry density (Mg/m^3)	10	1.84-2.02	-	1.92	Measured from both light and (2.5kg) and heavy (4.5kg) compaction tests.	3 & 4
Optimum water content (%)	10	8.30-14.0	-	12.01		
Effective angle of shearing resistance (°)	-	-	30-40	-	Representative range selected for weathered PLCM based on standard penetration testing and engineering judgement.	-
Point load index (MPa)	18 [1]	0.06-1.19	-	0.28	Mudstone results.	-
	9 [1]	0.43-2.92	-	0.95	Siltstone results.	
	8 [1]	0.13-1.68	-	0.80	Sandstone results.	
Unconfined compressive strength (MPa)	17	-	1.47-24.99 [2]	7.88	Mudstone results. Mean value corresponds to a weak rock [25].	5 & 6
	6	77	10.08-37.17	32.05	Siltstone results. Mean value corresponds to a medium strong rock [25].	
	3	-	18.27-35.28	28.07	Sandstone results. Mean value corresponds to a medium strong rock [25].	
Total core recovery (%)	37	45-100	-	93.38		7
Solid core recovery (%)	37	0-85	-	16.35		8
Rock quality designation (%)	37	0-30	-	4.73	Mean value corresponds to a very poor rock quality designation [26].	9
Geological Strength Index	-	-	20	-	Mudstone [3]. Single representative value selected.	-
	-	-	35	-	Siltstone [3]. Single representative value selected.	
	-	-	55	-	Sandstone [3]. Single representative value selected.	
Rock mass deformation modulus (MPa)	-	-	499	-	Mudstone [3]. Single representative value selected.	-
	-	-	2387	-	Siltstone [3]. Single representative value selected.	
	-	-	7065	-	Sandstone [3]. Single representative value selected.	
Poisson's ratio	-	-	0.3	-	Based on engineering judgment	-
	-	-	0.2	-		
	-	-	0.2	-		

Notes:

[1] Axial, diametral and irregular point load tests.

[2] Derived values converted from axial and irregular point load index values using equation UCS = KI_{s50} where K = 21 [27].

[3] Derived value calculated using Hoek framework [28].

4.6.2. Chemical Properties

Six Building Research Establishment (BRE) Special Digest (SD) 1 [29] tests were carried out on samples of PLCM. A summary of the testing results is presented in Table 16.

Table 16: Summary of BRE SD1 testing

Determinant	No.	Min.	Max.	Characteristic Value [1]
pH (pH units)	6	6.1	8.2	6.3
Water Soluble Sulphate as SO4 (mg/l)	6	10	45	44
Total Sulphur (%)	6	0.005	0.016	N/A
Total Potential Sulphate (%)	6	0.02	0.05	0.03
Magnesium (mg/l)	3	3	8	5

Notes:

[1] Characteristic value calculated as defined in BRE SD1.

The results indicate that the PLCM classify as Aggressive Chemical Environment for Concrete (ACEC) class DS-1 AC-2z.

4.6.3. Infiltration Rate

Two soakaway infiltration tests were carried out in general accordance with BRE Digest 365 [30], at depths of 1.42 and 2.20m bgl. Both trial pits refused on mudstone at the base of the excavation, meaning that testing was undertaken within the weathered top and not the competent mudstone.

Soil infiltration rates were calculated from the time taken for the water level to fall between 75 and 25% of the effective depth, as summarised in Table 17.

Table 17: Summary of soakaway infiltration testing

Hole ID	Test Depth (m bgl)	Test Time (mins)	Soil Infiltration Rate (m/sec)
TP201	1.42	150.8	$1.4x10^{-5}$
TP209	2.20	553.9	$5.0x10^{-6}$

4.6.4. Subgrade Modulus

Four plate load tests were carried out in accordance with BS 1377-9 [31], tested at 0.4m bgl using a 0.6m diameter plate. The results are summarised in Table 18.

Table 18: Summary of plate load testing

Hole ID	Tested Stratum	Applied Stress at 1.25mm Deformation (kN/m^2)	Modulus of Subgrade Reaction, k_{762} ($MN/m^2/m$)	Equivalent CBR (%)
TP202	Made Ground	67	43	7
TP204	Weathered PLCM	68	44	7
TP205	Weathered PLCM	64	41	6
TP208	Made Ground	56	36	5

4.6.5. Summary of Ground Properties

The ground properties discussed in Sections 4.6.1 to 4.6.4 have been summarised in Table 19.

Table 19: Summary of ground properties

Ground Property	Made Ground	Weathered PLCM	PLCM
Bulk unit weight (kN/m^3)	17-20 [1]	20-22	22-25
Effective angle of shearing resistance (°)	-	30-40	-
Effective cohesion (kPa)	0	0	-
Drained elastic modulus (MPa)	-	30-40	-
Unconfined compressive strength (MPa)	-	-	1.47-24.99 (Mudstone) 10.08-37.17 (Siltstone) 18.27-35.28 (Sandstone)
Soil infiltration rate (m/sec)	-	$5.0x10^{-6}$ to $1.4x10^{-5}$	-
Rock modulus (MPa)	-	-	499 (499) 2387 (4387) 7065 (Sandstone)
Poisson's ratio	-	-	0.3 (Mudstone) 0.2 (Siltstone) 0.2 (Sandstone)

Notes:

[1] Based on suggested value for medium dense gravel [32].

Property range values for Made Ground and weathered PLCM should be treated as indicative and for guidance only as it is recommended that these strata are removed and replaced with engineered fill where present under a proposed geotechnical asset.

The ground property values presented in Table 19 should be revised and updated following the completion of the additional GI and confirmation of development proposals and loading regime.

5. Geotechnical Assessment

5.1. Introduction

The following sections discuss the engineering considerations for the proposed geotechnical assets.

5.2. Footbridge, Lift and Stairs

5.2.1. Foundations

The Client has provided preliminary structural loads. These loads contain only a vertical loading component and do not define the serviceability requirements/criteria (e.g., vertical differential and lateral deflection criteria).

An indicative ground profile under the foundations has been based on BH101 and is presented in Table 20. Founding levels are not yet finalised and it has been assumed that Made Ground and weathered PLCM will be removed during construction.

Table 20: Indicative footbridge, lift and stairs foundation ground profile

Stratum	Top (m bgl)	Base (m bgl)	Comment
Made Ground	0	0.70	To be removed during construction.
Weathered PLCM	0.70	1.10	
PLCM MUDSTONE	1.10	10.90	Described as extremely weak, thinly to thickly laminated mudstone with very closely spaced fractures in multiple orientations, commonly with iron staining and occasionally infilled. Depth to top to be confirmed.

A presumed bearing resistance for spread foundations on rock has been derived in accordance with BS EN 1997-1 Annex G [5]. A UCS value of 7.88MPa has been adopted for the mudstone and it is classified as a Group 4 rock (uncemented mudstones and shales) in accordance with Table G.1 [5]. The very closely to closely spaced, multi-orientation fracturing indicates a discontinuity spacing below the 60mm lower limit of Figure G.1. On this basis, a presumed bearing resistance range of 0.1-0.16MPa (100-160kPa) has been selected (Figure 4), with corresponding indicative square footing sizes, based on service loads, shown in Table 21.

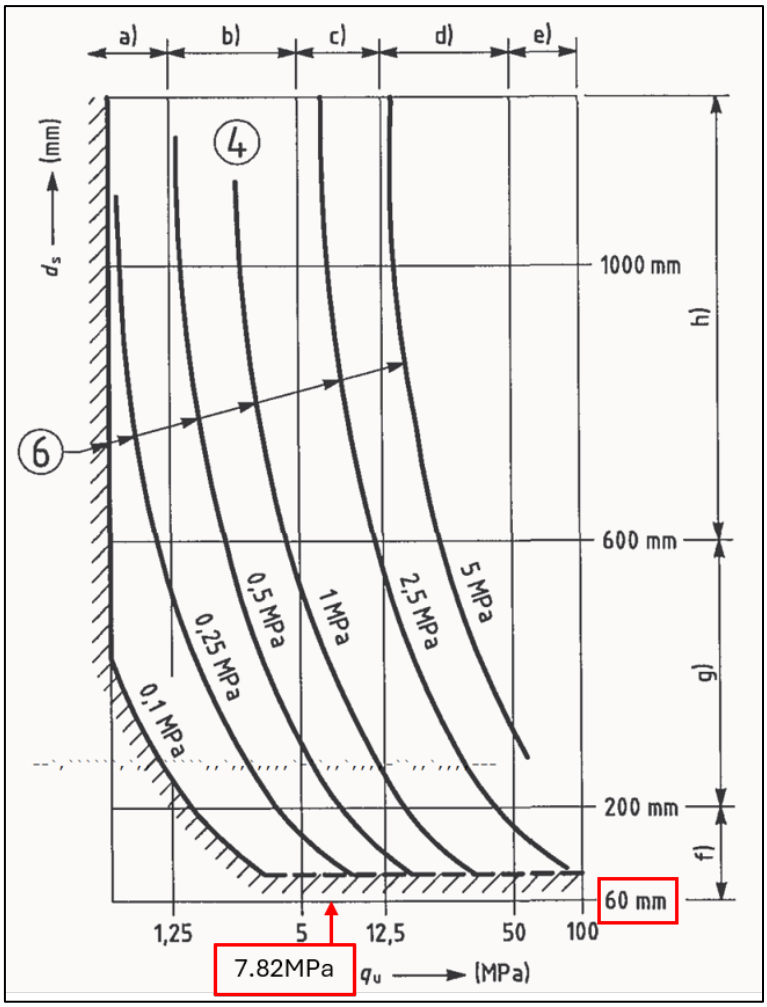


Figure 4: Eurocode 7 Part 1 Annex G extract (after BS EN 1997-1 [5])

Table 21: Indicative foundation dimensions

Presumed Preliminary Bearing Resistance (kPa)	Required Area = Design Vertical Action / Presumed Bearing Resistance	Indicative Footing Size (length x breadth)
100	97.49 / 100 = 0.97m^2	1.00m x 1.00m
160	97.49 / 160 = 0.61m^2	0.80m x 0.80m

The above does not consider any horizontal loading or moments imposed at foundation level and assumes the load is applied at the foundation centroid. This must be revised once foundation-specific structural reactions are available.

Detailed ultimate and serviceability limit state calculations to BS EN 1997-1 [5] Design Approach 1 will be required as part of the ES5 Geotechnical Design Report (GDR) once further GI has been carried out, and foundation-specific reactions are available from the structural model.

Pile foundations cannot be ruled out at this stage and should be assessed during the next stage once specific structural reactions are available and serviceability requirements/criteria has been established.

Concrete in contact with the ground should be designed for an ACEC classification of DS-1 AC-2z.

5.2.2. Interfaces

Any proposed foundation solution shall consider interfaces with existing railway assets, including the NR-owned platform, retaining wall and the operational track.

The type, depth and condition of nearby asset foundations are not known from this GI and should be confirmed from NR asset records or a condition survey at GDR stage. Any excavation or ground improvement works within the zone of influence of the platform, retaining walls or the operational railway should be assessed for effects on asset stability, settlement and vibration, in accordance with NR's Asset Protection and Engineering Assurance (ASPRO) requirements. Baseline condition surveys should be considered for assets within the zone of influence prior to construction, and the design and construction methodology submitted for NR Engineering Acceptance in accordance with the project's assurance plan.

5.3. Car Park

5.3.1. Drainage

Two soakaway infiltration tests were carried out within the weathered top of the PLCM. Measured infiltration rates were $1.4x10^{-5}$ m/s at TP201 and $5.0x10^{-6}$ m/s at TP209. The TP201 value falls within the range typically considered suitable for infiltration SuDS; the TP209 value is towards the lower end of the range generally considered viable, and a soakaway sized on this basis alone would require a significantly larger footprint or may not achieve practical emptying times.

Given this variability across only two tests, both within the accessible western part of the car park site, infiltration performance cannot be reliably characterised across the wider car park footprint at this stage. On this basis, infiltration drainage is not recommended as the primary design solution, and it is recommended that the project investigates an alternative drainage solution, e.g., attenuation tanks and discharge offsite.

5.3.2. Pavement Subgrade

Plate load tests were carried out at four locations across the investigated car park area. Two tests were carried out on Made Ground and two on weathered PLCM. The results are summarised in Table 18.

The four results are consistent, with equivalent CBR values ranging between 5 and 7% and modulus of subgrade reaction (k_{762}) values ranging between 36 and 44MN/m^2/m. Stress-deformation behaviour was well-defined at each location, with no indication of bearing capacity failure within the range of applied loading.

The equivalent CBR values have been converted to an indicative subgrade surface modulus (E) using CD 225 equation 2.4 [33]:

Calculated values of E range between 49 to 61MPa. CD 225 states that the upper limit on design surface modulus for areas of improvement of the subgrade shall be 50MPa. As a result, a design surface modulus of 50MPa should be adopted for pavement design purposes.

It is recommended that additional plate load testing it carried out during the next phase once the eastern half of the car park site has been cleared and the layout is finalised.

5.3.3. General Earthworks

Laboratory compaction testing has been carried out recovered samples of the PLCM. Both light compaction (2.5kg) and heavy compaction (4.5kg) has been carried out.

Light compaction testing returned maximum dry densities (MDD) ranging from 1.84 to 1.94Mg/m^3 at optimum water contents (OWC) of 13 to 14%. Heavy compaction testing returned higher MDD values of 1.94 to 2.02Mg/m3 at lower OWCs of 8.3 to 11.0%. This inverse relationship between compactive effort and OWC is consistent with expected behaviour and provides no indication of anomalous material response. Material retained on the 37.5 and 20.0mm sieves ranged from 14 to 41%, confirming a coarse, gravelly/cobbly matrix consistent with the recorded soil description.

Vibrating hammer compaction testing was carried out on two samples also tested for light compaction. These tests recorded MDD values of 1.85 and 1.90Mg/m^3.

The PLCM mudstone exhibits compaction characteristics broadly consistent with suitability for re-use as engineered fill, anticipated predominantly as Class 2 fill subject to confirmation of the material properties after excavation and processing. Mudstone is an argillaceous rock and as such is likely to be susceptible to particle breakdown (“slaking”) on reworking, exposure and trafficking during earthworks. This may alter its grading and compaction response from that recorded at the point of sampling. It is recommended that:

- Slake durability index testing and/moisture condition value testing be undertaken to confirm the material’s durability classification and long-term stability, particularly where re-use is proposed beneath structural elements such as the car park pavement;
- Moisture content at the point of compaction be controlled within a tight tolerance of the relevant OWC (13 to 14% for standard plant effort, reducing toward 8 to 11% where heavier compaction plant is specified), given the material’s likely sensitivity to moisture above optimum; and
- Grading and moisture content of the fill be monitored through the earthworks process to identify any progressive breakdown of the mudstone under compactive effort or trafficking.

5.3.4. Excavations

Trial pits excavated across the car park site remained stable, without collapse, to a maximum depth of 2.60m bgl. No instability or collapse was recorded during the two soakaway infiltration tests.

These observations relate to short-term, unsupported excavations open for the duration of the work fieldwork only, under the ground and groundwater conditions prevailing at the time of testing. They should not be interpreted as confirmation that unsupported excavations to this depth will remain stable under all conditions across the site, or over longer durations, for the following reasons:

- The short-term stability of the weathered mudstone encountered in the trial pits does not preclude progressive deterioration, softening or loss of strength on prolonged exposure to air or water, or under vibration from adjacent plant and trafficking;
- Groundwater conditions were not fully established during this GI and seasonal or construction-related variation could affect excavation stability;
- Trial pit stability was observed at a limited number of discrete locations; ground conditions, including made ground thickness, weathering profile and any localised softer or looser material, may vary elsewhere across the site; and
- No formal geotechnical assessment of slope stability has been undertaken for these observations and represent factual field records only.

It is recommended that:

- All excavations should be designed, supported and manged in accordance with BS 6031 [34] and CDM 2015;
- A detailed geotechnical excavation risk register be undertaken as part of the ES5 GDR, informed by the ground model and groundwater data in this report; and
- Excavation support requirements be confirmed once the eastern half of the car park site has been cleared and investigated.

5.3.5. Foundations

Shallow pad foundations are likely suitable for any ancillary infrastructure, e.g., lampposts and signage, subject to confirmation on loading. It is recommended that any made ground is removed and replaced with a suitably compacted engineered fill prior to constructing foundations. Concrete foundations should be designed using an ACEC class of DS-1 AC-2z.

5.4. Mining

The findings of the MRA prepared by Summit [4] concluded that the preliminary mining risk is assessed as Very Low or Low. Further targeted GI is required to confirm the assumptions adopted in the risk assessment.

5.5. Enabling Works

Enabling works anticipated ahead of the main construction phase include:

- Clearance of dense vegetation across the eastern half of the car park site to allow completion of additional GI and the subsequent construction;
- Demolition and removal of the derelict steel frame structure and associated foundations/substructure identified during the site walkover (Section 2.3);
- Site levelling and cut and fill earthworks;
- Diversion or protection of buried services to facilitate construction; and
- Confirmation of a NR BAPA to enable completion of the additional GI.

6. Geo-Environmental Assessment

6.1. Introduction

The following sections provide a summary of the assessment for potential contamination based on information obtained from the GI and provides an update to the preliminary CSM (Figure 2).

6.2. Human Health Risk Assessment

21no. soil samples were collected and tested for the following range of contaminant suites:

- Asbestos;
- General Inorganics;
- Total Phenols;
- Speciated PAHs;
- Heavy Metals / Metalloids;
- Petroleum Hydrocarbons;
- VOCs;
- BTEX & MTBE;
- SVOCs; and
- PCBs.

The samples were not necessarily tested for all the above suites. The suites of testing for selected for each sample were based on site soil descriptions and to provide general coverage of testing. The soil chemical test results are presented in Appendix 7 of the Factual Report (Appendix D).

6.2.1. Rationale

For the protection of human health, screening criteria were selected from published generic assessment criteria (GACs) as Suitable 4 Use Levels (S4Uls) as published by LQM/CIEH. In the absence of S4ULs, Category 4 Screening Levels (C4SLs) were used as published by DEFRA/CL:AIRE. In the absence of S4ULs or C4SLs, EIC/AGS/CL:AIRE values were used. Occasionally values from the USEPA Region 9 criteria were used. In the case of PCBs the GACs used were from the UK Government report relating to the Grenfell Tower fire in London [35]. Note that S4ULs were used under licence S4UL3944 [36].

It should be noted that GACs derived for threshold substances represent a concentration in soils below which the risk to human health is NEGLIGIBLE. For non-threshold substances concentrations in soil less than the S4UL values represent a MINIMAL risk. Therefore, as a generalisation these represent LOW risk to human health.

GAC values can be selected based on the soil organic matter (SOM) content of the soils concerned. Currently GACs are published for SOM of 1, 2.5 or 6 %. The SOM values affect the GAC values for organic contaminants; the greater the SOM the greater the GAC value. Therefore, to add a degree of conservatism GAC values for the lowest SOM (1%) have been used as the initial screening exercise.

In light of the site being developed into a hardstanding car park and pedestrian footbridge, the most relevant generic end use scenario considered in the assessment of risks to long term human health was Commercial/Industrial.

The Commercial/Industrial scenario is defined as a standard end use within the LQM/CIEH S4UL and C4SL Human Health Risk Assessment guidance which were developed in line with the CLEA model. This is also the case for the EIC/AGS/CL:AIRE GACS. The USEPA uses a similar approach.

It may become evident following further investigation and analysis that additional COCs come to light that were not present in the current list which may require screening criteria to be applied. If so, additional criteria shall be selected/derived and submitted to the regulators for comment and agreement.

Chemical laboratory testing reports are presented in Appendix 7 of the Factual Report (Appendix D). Details of the soils data screening process are presented in Appendix E.

6.2.2. Soil Screening Results

None of the testing results were present at concentrations greater than their respective screening criteria. As such, it is concluded that the risk to human health for a commercial/industrial end use is VERY LOW.

6.3. Controlled Waters Risk Assessment

A controlled waters risk assessment was not part of the current scope of the project. It is anticipated that as the site will be covered almost completely by hardstanding that infiltration into underlying groundwaters will be negligible. As such risks to the groundwater in the PLCM will be LOW.

This may need to be considered further by the successful contractor prior to the development works starting.

6.4. Conceptual Site Model Update

Based on the current GIR testing the risk to human health is VERY LOW. This concurs with the original preliminary risk assessment.

The main caveat is that the area of the site to the east was not investigated so additional GI is recommended to confirm the whole site presents a VERY LOW risk.

It is the construction phase which will realise the greatest risk, as soils are excavated for services and possible reuse. Appropriate controls must be developed and agreed with the regulators. This will need to be considered further by the successful contractor prior to the development works starting.

6.5. Material Re-Use

Site soils from the locations which were sampled during this GIR, based on chemical testing, should be suitable for reuse at the site as fill materials, so long as their use is fully justified, risk assessed and documented with agreement from the local planning authority and the Environment Agency. It will be likely that a completion report showing details of quantities and

quality of materials reused (donor areas and areas where reused) will have to be submitted to the regulators.

There are several recognised systems which may be appropriate for this process which may include the use of a Bespoke environmental permit, or a mobile treatment plant permit; or reuse under the CL:AIRE DoWCoP protocol.

This may need to be considered further by the successful contractor prior to the development works starting.

7. Conclusions

7.1. Key Findings

This report has concluded the following key findings:

- A GI comprising three BHs to a maximum depth of 31.00m bgl and eight TPs to a maximum depth of 2.60m bgl has been completed for the car park and footbridge areas accessible at the time of the works; and
- The ground model comprises Made Ground (0.20-0.75m thick) over PLCM, with an intact 0.95m thick coal seam proven at 27.90-28.85m bgl (185.15-184.20m OD) in BH101 and no evidence of historical mine workings.

The following key findings are specific to the proposed footbridge:

- Spread foundations within the PLCM mudstone are considered a feasible preliminary option for the footbridge, lift and stairs. The foundation solution and dimensions will be confirmed during ES5, following targeted GI beneath the proposed foundations, receipt of the full structural reactions and the structures serviceability criteria. Piled foundations may need to be considered depending on these findings.

The following key findings are specific to the proposed car park:

- The car park pavement subgrade offers a preliminary equivalent CBR obtained from testing of 5-7% (surface modulus capped at 50MPa per CD 225 [33]);
- Infiltration drainage is not recommended as the primary solution, and alternative drainage should be adopted;
- The risk to human health is assessed as VERY LOW for the proposed commercial/industrial end use, and risk to controlled waters is assessed as LOW; and
- The eastern half of the car park site and the area beneath the footbridge foundations were not accessible/investigated during this phase and required further targeted GI ahead of GDR.

7.2. Next Steps

The following works are anticipated to be required as the project moves from ES4 to ES5:

- Further targeted GI is required to confirm founding strata, weathering profile, groundwater and mining-related uncertainties beneath the proposed foundations, and to investigate the inaccessible car park area;
- Production of a Geotechnical Design Report for any proposed geotechnical assets, i.e., foundations, retaining walls, etc.;
- Production of an earthworks specification;
- Input to NR documents including Form B, DRN and IDC.

8. Geotechnical Risk Register

8.1. Introduction

A geotechnical and geo-environmental risk register was presented in Section 7 of the Arup Desk Study [6]. This has been reviewed and revised to account for the GIR findings. The risk register should be developed and refined as the project progresses to manage the ground risks.

The risk register scoring system is explained in Table 22 with the ground risk register presented in Table 23.

Table 22: Risk register scoring system

Residual Risk Rating	Definition
HIGH	High possibility of impacting on overall project programme, cost and safety.
MEDIUM	Possibility of impacting on overall project programme, cost and safety.
LOW	Unlikely to impact on overall project programme, cost and safety.

Table 23: Geotechnical risk register

Hazard	Cause	Consequence	Risk Pre-Mitigation	Mitigation	Risk Post-Mitigation
Buried obstructions or voids	Derelict structure foundations and possible remnants of railway sidings in car park land	Delay to programme and increased cost.	HIGH	• Foundation survey to be carried out at detailed design stage to confirm depth and extent, followed by removal or accommodation within the proposals.	LOW
Risk of damaging utility services	Cable strike during construction or additional GI	Strike and/or damage to services/workers.	MEDIUM	• Obtain latest statutory plans. • Permit to dig system. • PAS 128 survey to be carried out.	LOW
Ground contamination	Made ground and historical site usage	Risk to human health of workers during construction and future site users during operation.	MEDIUM	• Undertake additional GI during next phase. • Appropriate control measures during site development works to protect site workers & public.	LOW
Interfacing with railway operations	Proposed development introducing new loading/assets	Repair costs and damage to reputation.	MEDIUM	• Works to be designed and delivered in accordance with NR ASPRO requirements.	LOW
Unforeseen ground conditions	Insufficient GI coverage across eastern half of car park site and under footbridge foundations	Delay to programme and increased cost.	HIGH	• Undertake additional GI during next phase.	MEDIUM

Hazard	Cause	Consequence	Risk Pre-Mitigation	Mitigation	Risk Post-Mitigation
Mining	Unrecorded underground mining	Void migration to surface leading to collapse	MEDIUM	• Undertake additional GI during next phase. • Update MRA and confirm if any further treatment is required.	LOW
Change in foundation strategy	Structural loading information and serviceability criteria yet to be provided in full, and ground conditions beneath the proposed foundations not directly investigated	Different foundations required, e.g., piles.	HIGH	• Undertake additional GI during next phase. • Updated structural loads and serviceability requirement/criteria to be provided by structural engineer to enable full geotechnical assessment.	LOW

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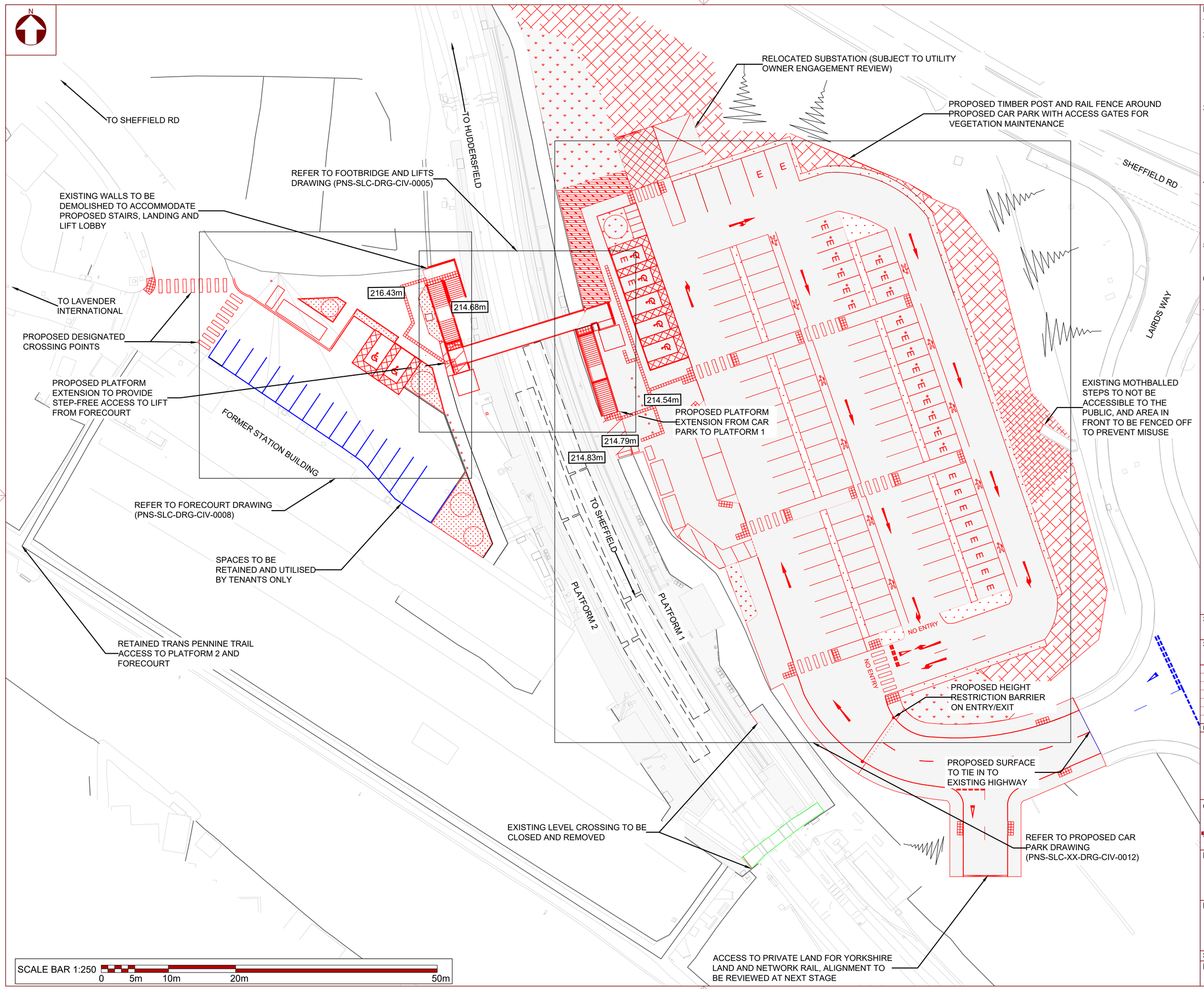
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Appendix A Drawings



Notes/Legend:

1. DO NOT SCALE FROM THIS DRAWING
2. TOPOGRAPHICAL INFORMATION OBTAINED FROM DRAWING 2207206_SKEYE_PENISTONE STATION_3D_FINAL_V2 BY SKEYE (22/07/2026) & P22-01501-MET-EXT-XX-TOP-M2-G-001-2 BY MET GEO ENVIRONMENTAL (07/12/2022)
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KEY

- EXISTING OR UNCHANGED
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- OS/SURVEY DATA
- REDUNDANT OR TO BE REMOVED
- NEW, PROPOSED OR ADDITIONAL
- LANDSCAPING (REFER TO PNS-SLC-XX-DRG-CIV-0009 FOR DETAILS)

Stage: PACE 2 ES4

Status: S5 - FOR REVIEW

REV.	DATE	DESCRIPTION	DR.	CHK.	APVD.
P03	01/10/2026	ES4 ISSUE	KM	GZC	GZC
P02	28/09/2026	CLIENT ISSUE	KM	GZC	GZC
P01	28/08/2026	IDC/IDR SUBMISSION	KM	GZC	GZC

SLC

Client: BARNSLEY METROPOLITAN BOROUGH COUNCIL

Project Title: PENISTONE STATION FOOTBRIDGE & CAR PARK

Drawing Title: PROPOSED SITE-WIDE GENERAL ARRANGEMENT

Sheet Size: A1 | Scale: 1:250 | Sheet: 1 of 1

Drawing Number: PNS-SLC-XX-DRG-CIV-0002 | Rev.: P03



Legend

- Site Boundary
- Network Rail Track Centreline
- Borehole
- Trial Pit

Notes:

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Coordinate System: British National Grid

0 20 40 m

1:750

Revision: P02
Date: 07/10/2026
Author: MW

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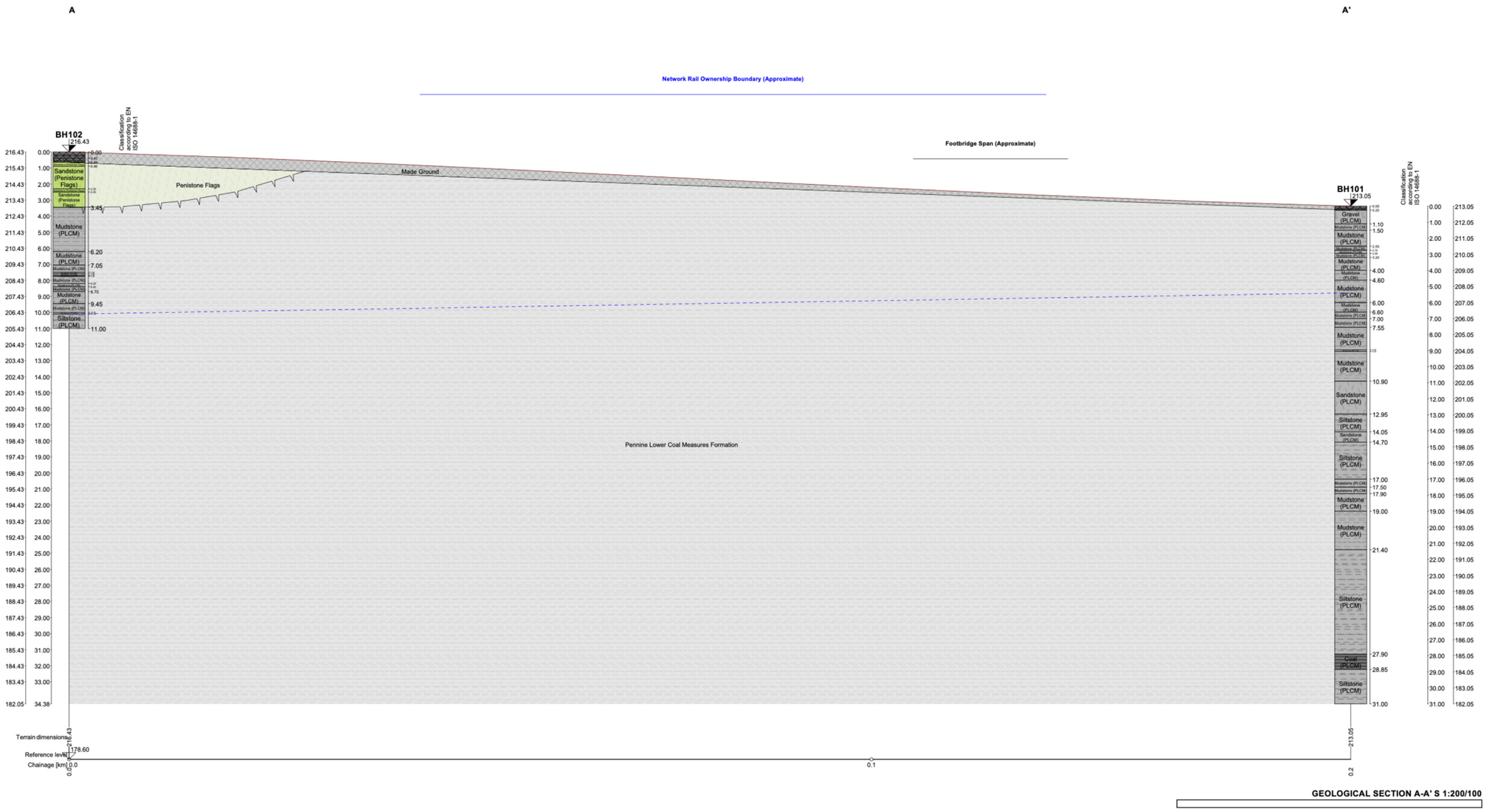
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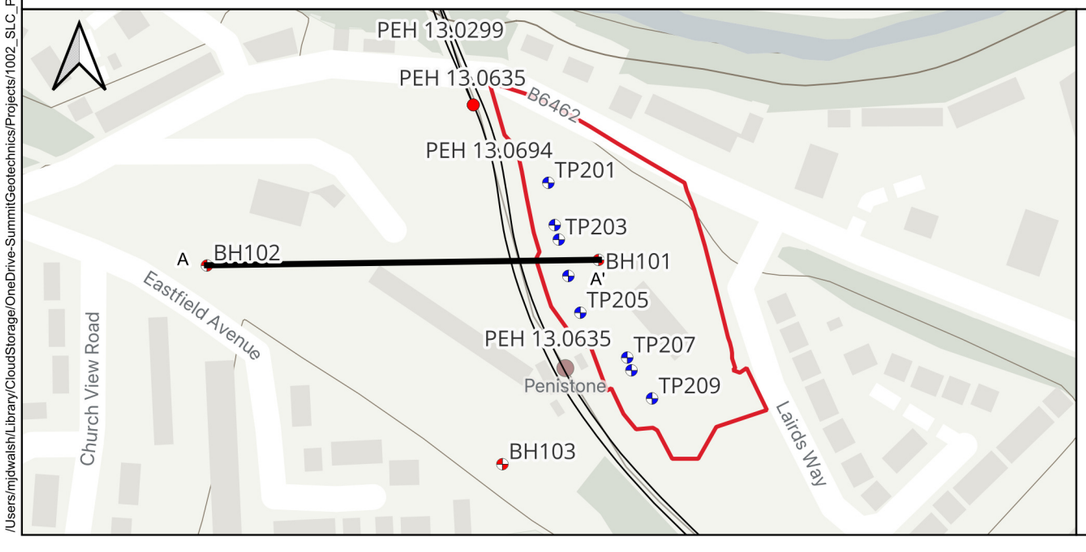
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Job No.: 1002 | Revision: P02

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Legend

A-A'

Soils

- Coal (PLCM)
- Gravel (PLCM)
- Siltstone (PLCM)
- Sandstone (Penistone Flags)
- Pennine Lower Coal Measures Formation
- Made Ground
- Sandstone (PLCM)
- Gravel (Made Ground)
- Mudstone (PLCM)
- Sand (Made Ground)
- Penistone Flags

Line types

- Subsoil
- Water

Notes:

This drawing is to be read in conjunction with the Penistone Footbridge and Car Park Ground Investigation Report.

The relative position of Network Rail assets and the proposed footbridge are shown indicatively.

The groundwater table has been inferred from the minimum depth recorded during the monitoring programme and is subject to seasonal fluctuation.

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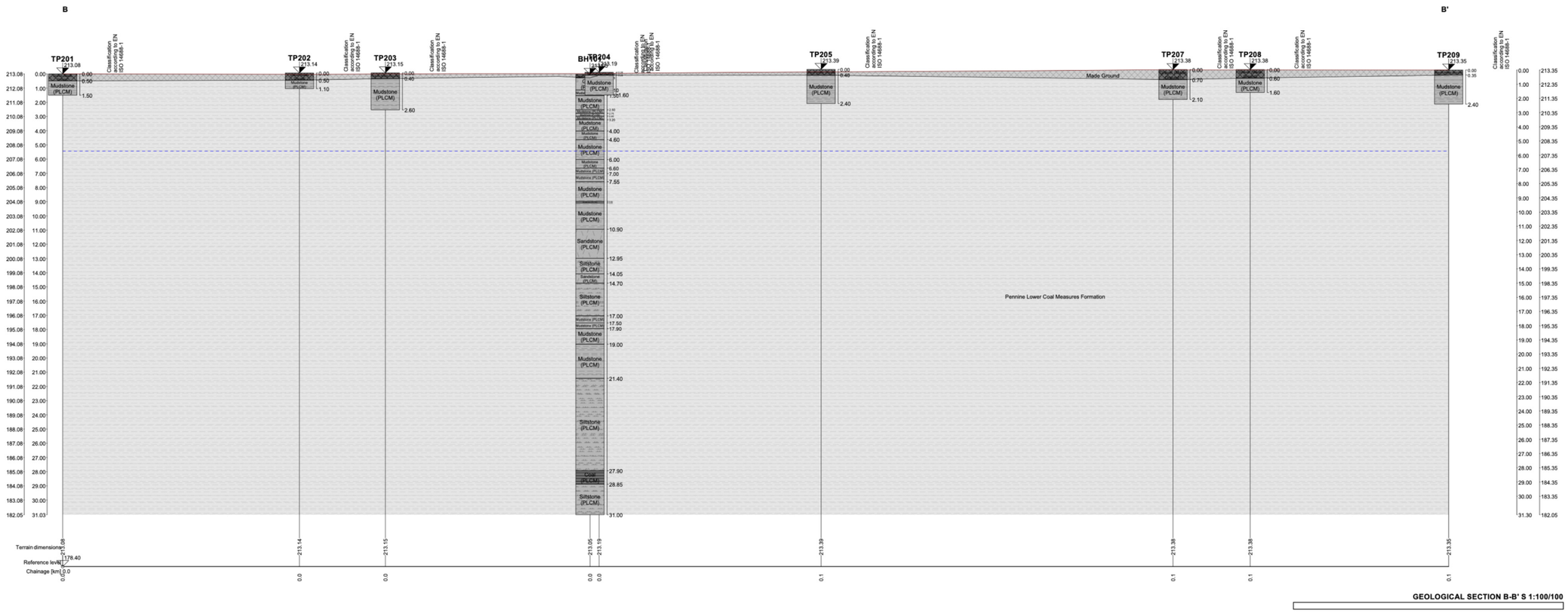
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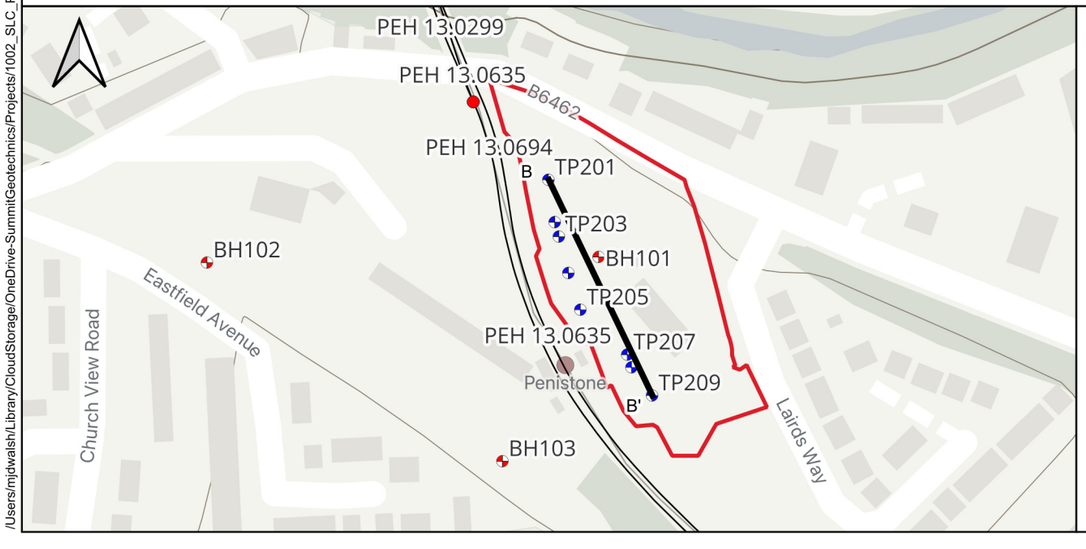
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Job No.: 1002 | Revision: P02

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Legend

B-B'

Soils

- Made Ground
- Pennine Lower Coal Measures Formation

Line types

- Water

Notes:

This drawing is to be read in conjunction with the Penistone Footbridge and Car Park Ground Investigation Report.

The relative position of Network Rail assets and the proposed footbridge are shown indicatively.

The groundwater table has been inferred from the minimum depth recorded during the monitoring programme and is subject to seasonal fluctuation.

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Drawing Title
2D Geological Section - Section B-B'

Suitability: For Issue

Job No.: 1002 | Revision: P02

Name
SGL-1002-SLC-DRG-GI-003

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Legend

- Site Boundary
- Network Rail Track Centreline
- Borehole
- Trial Pit
- Photo Locations

Notes:

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Coordinate System: British National Grid

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1:750

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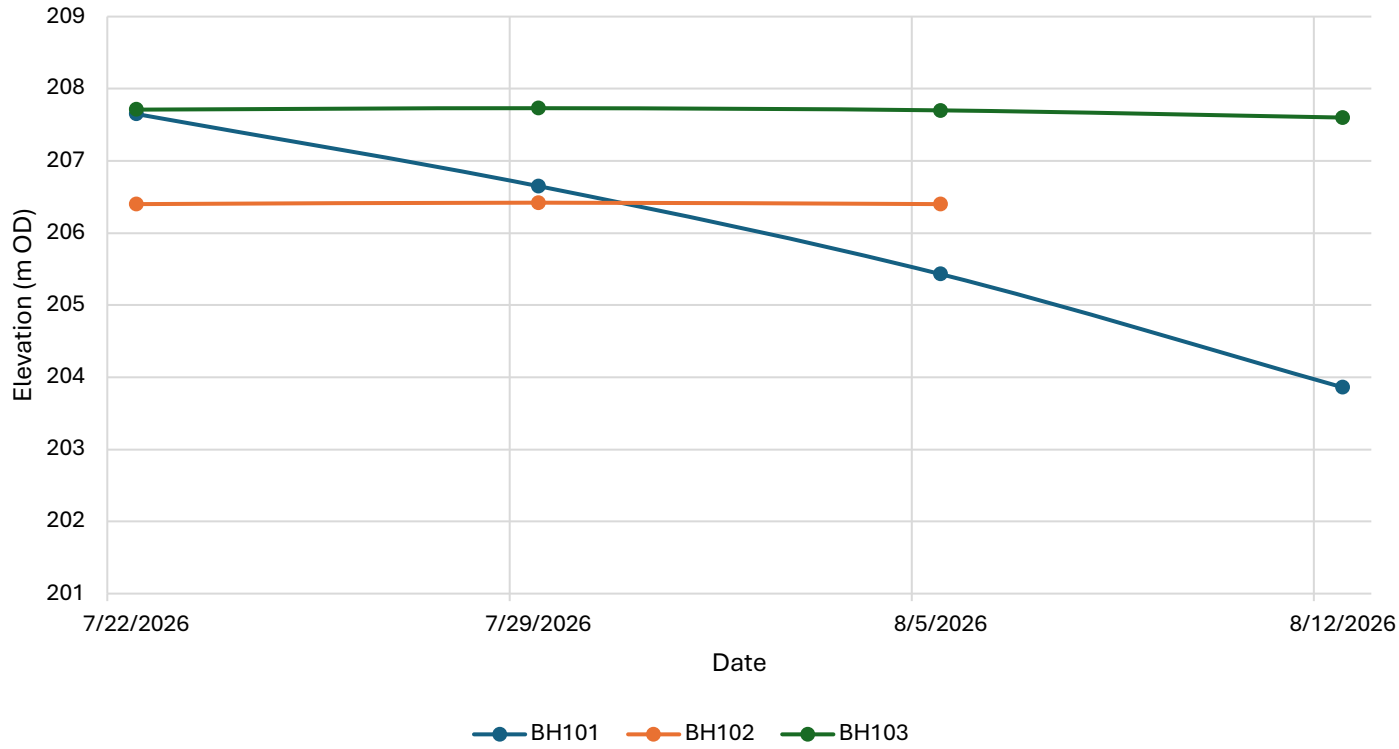
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Site Walkover Photo Location Plan

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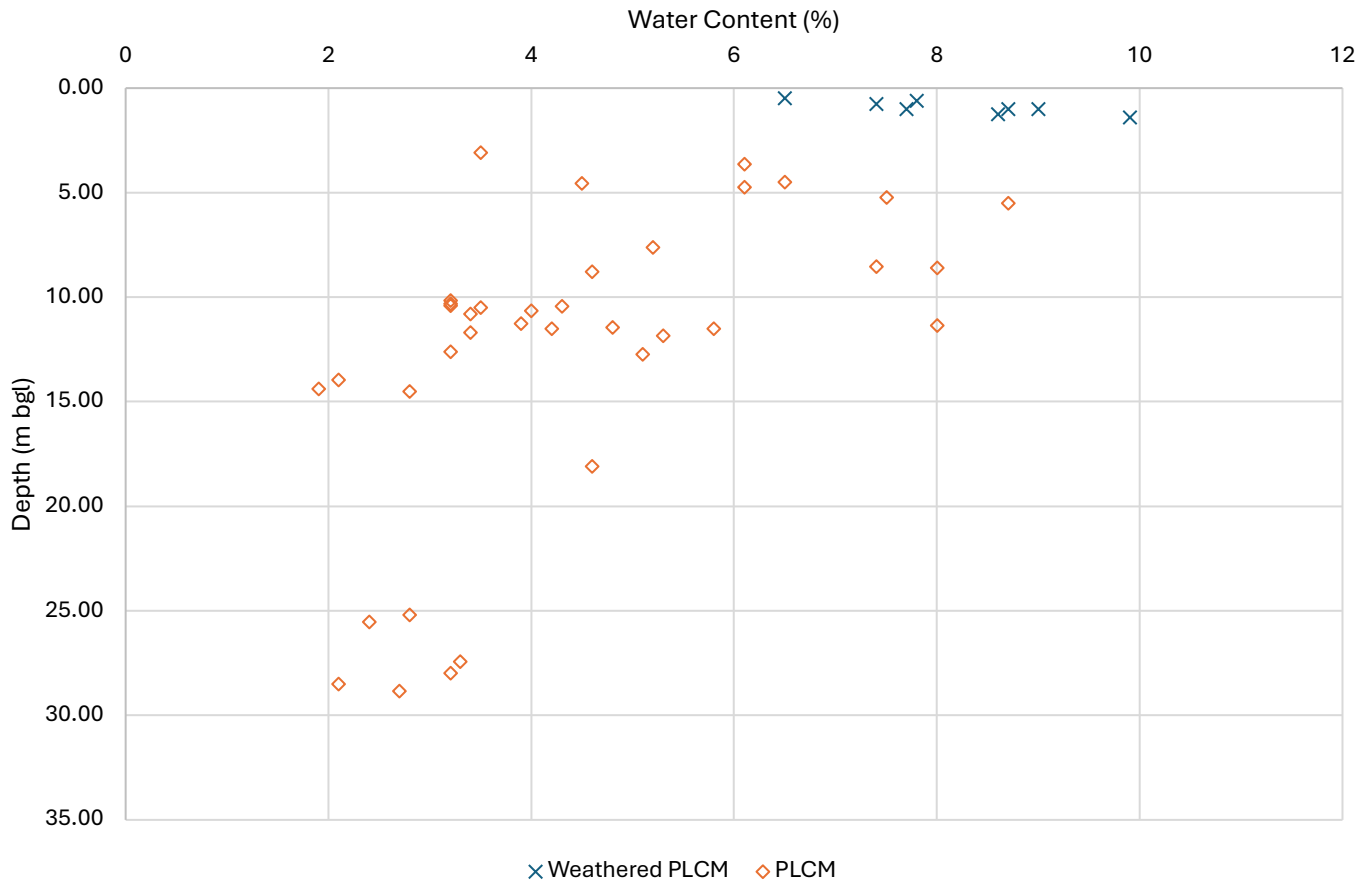
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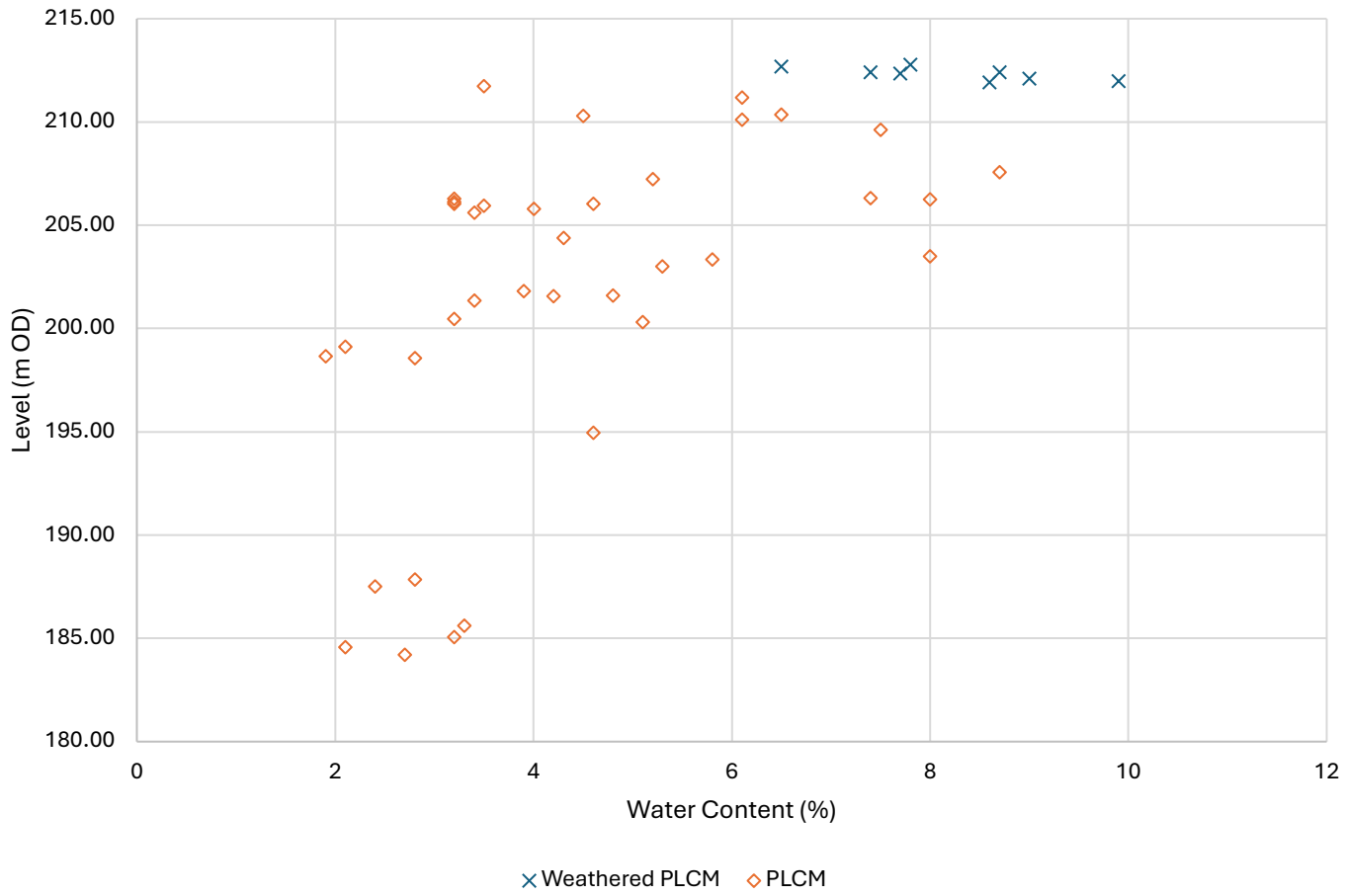
Appendix B Figures



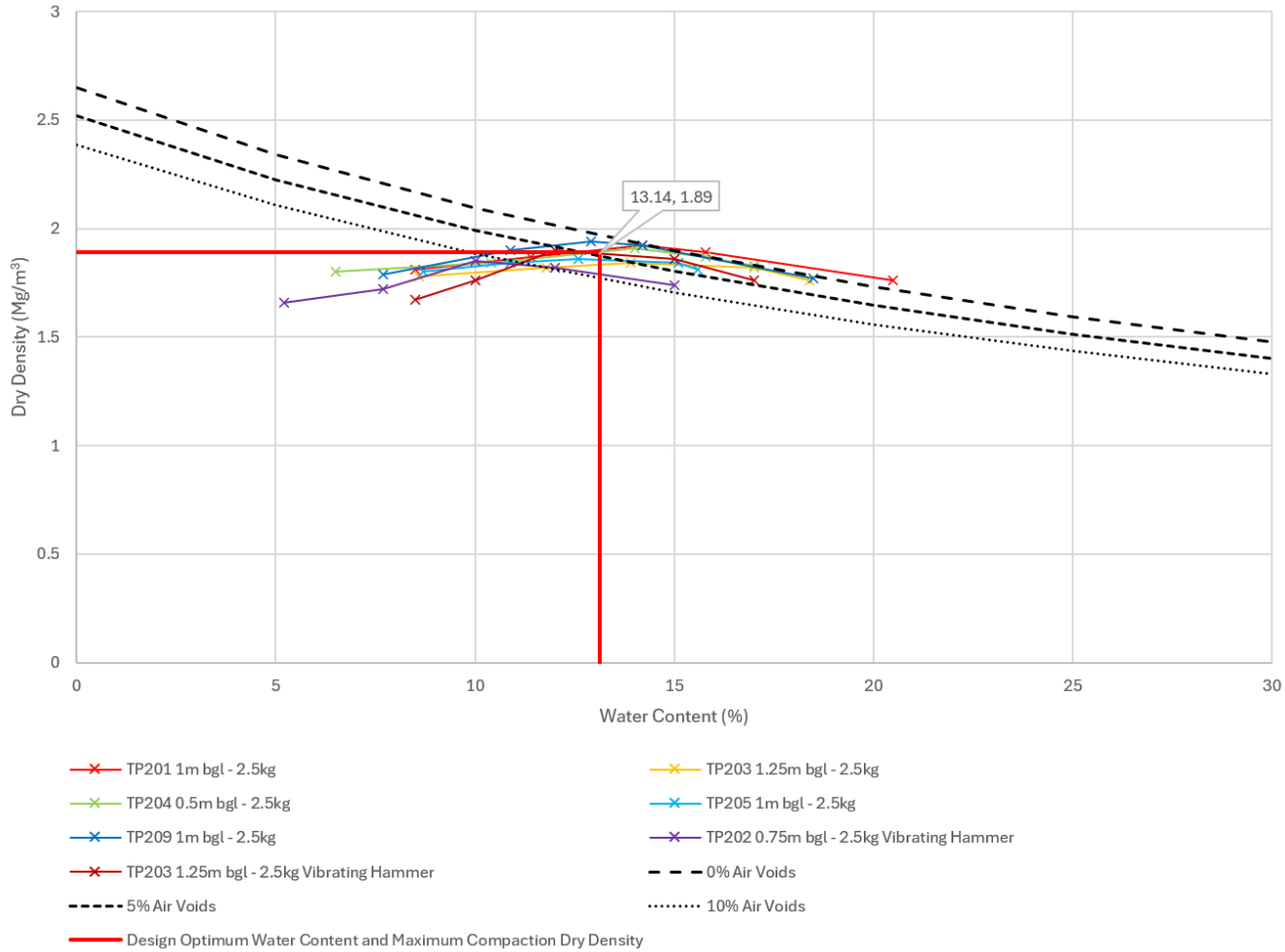
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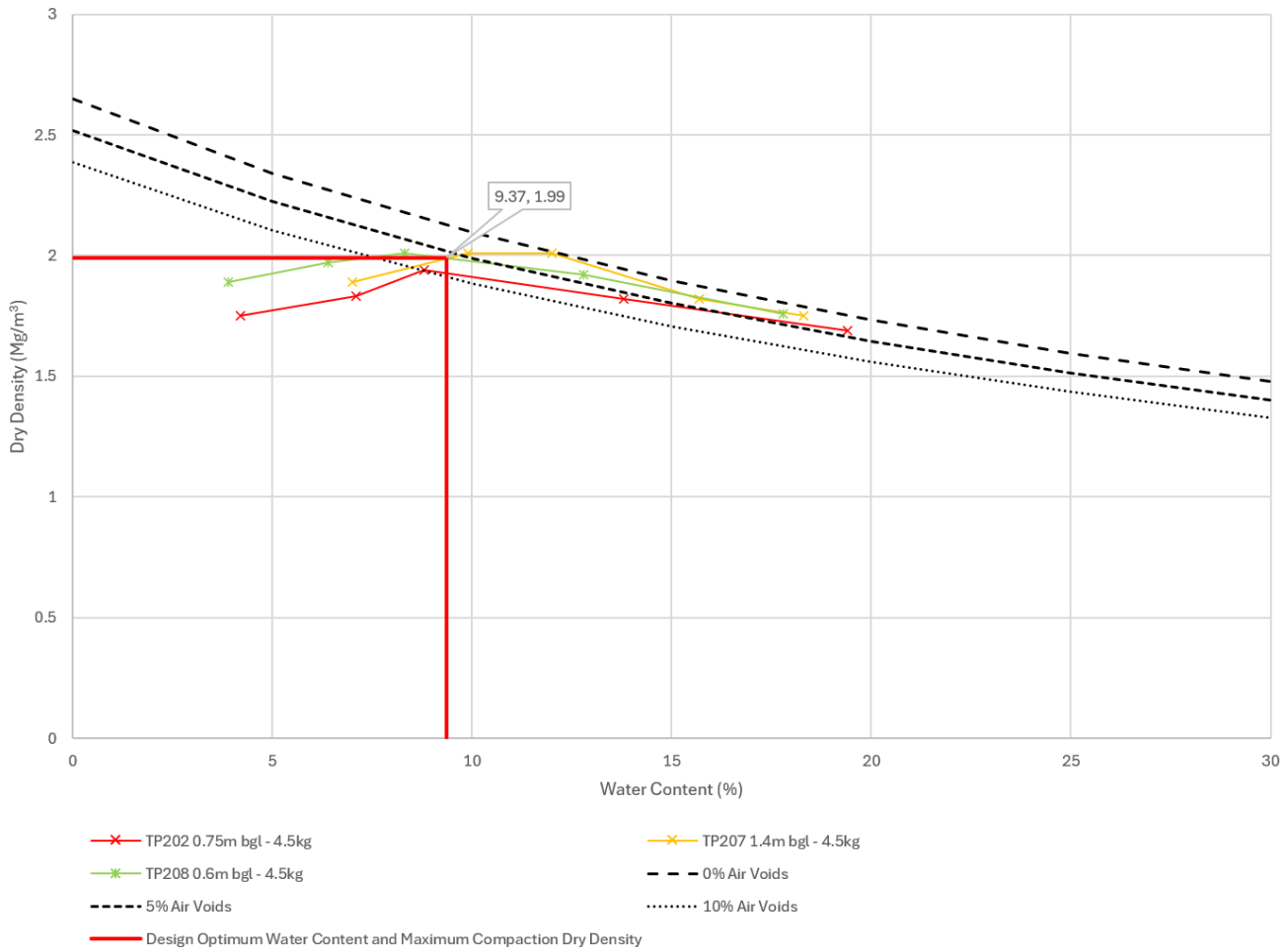
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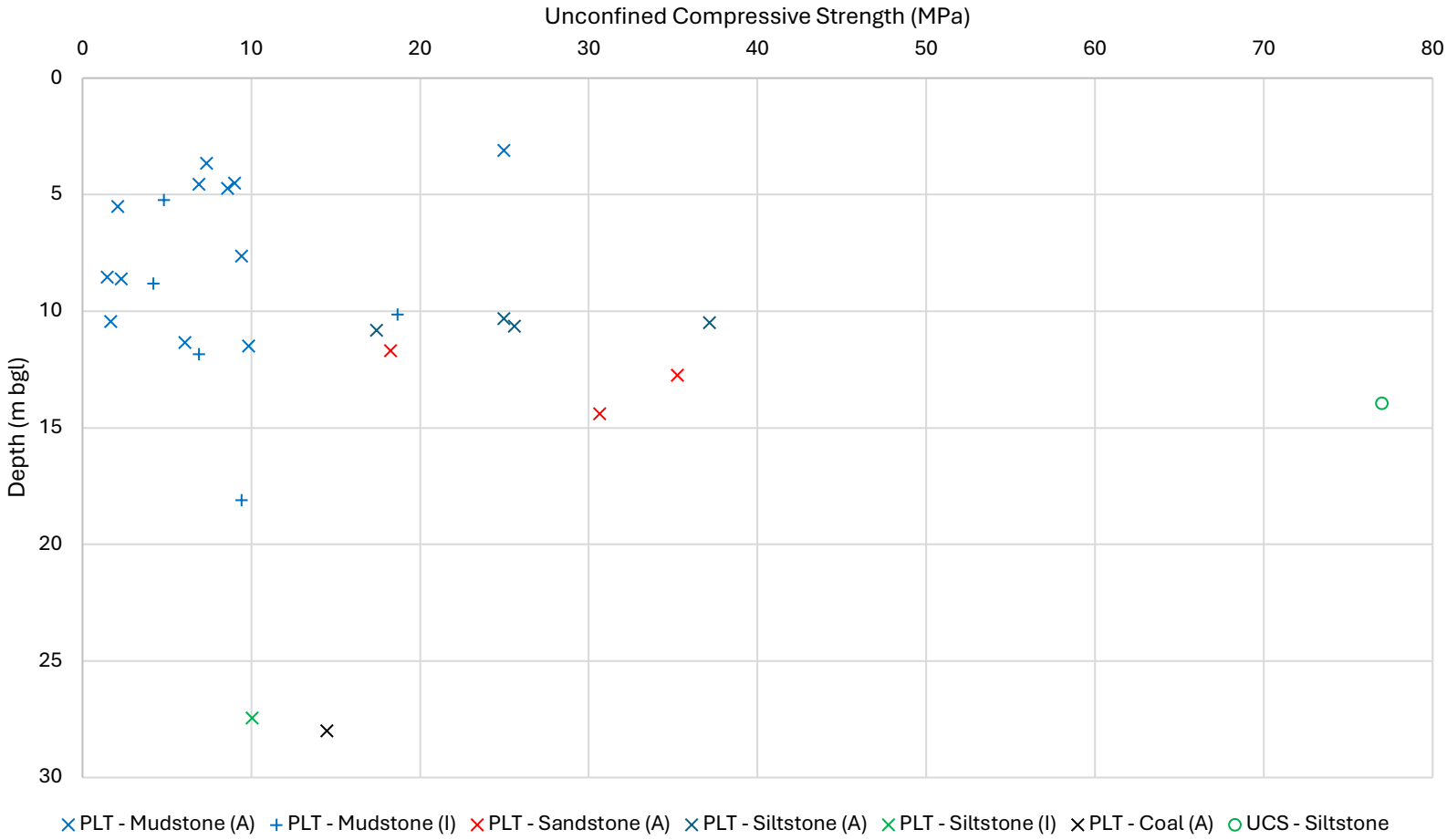
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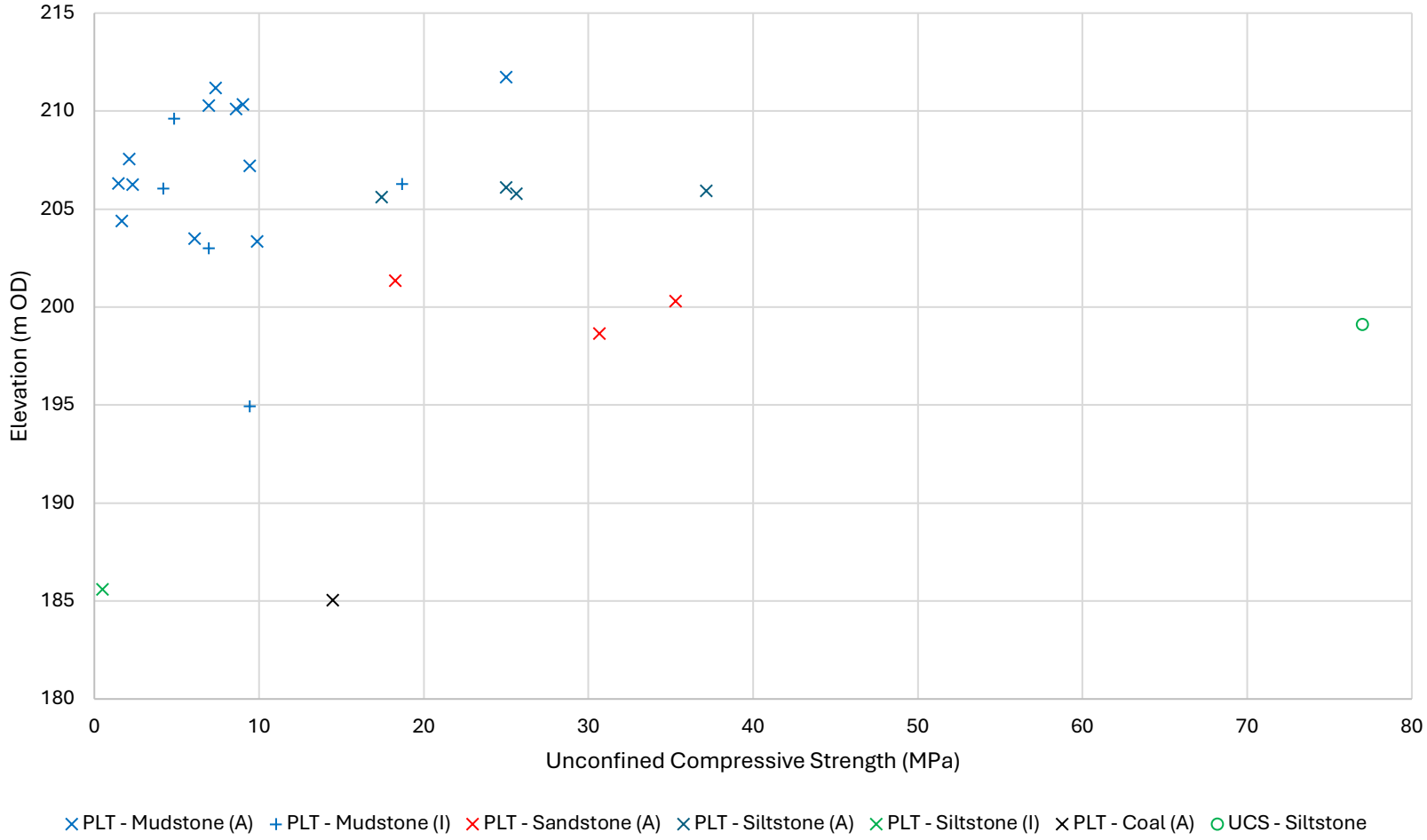
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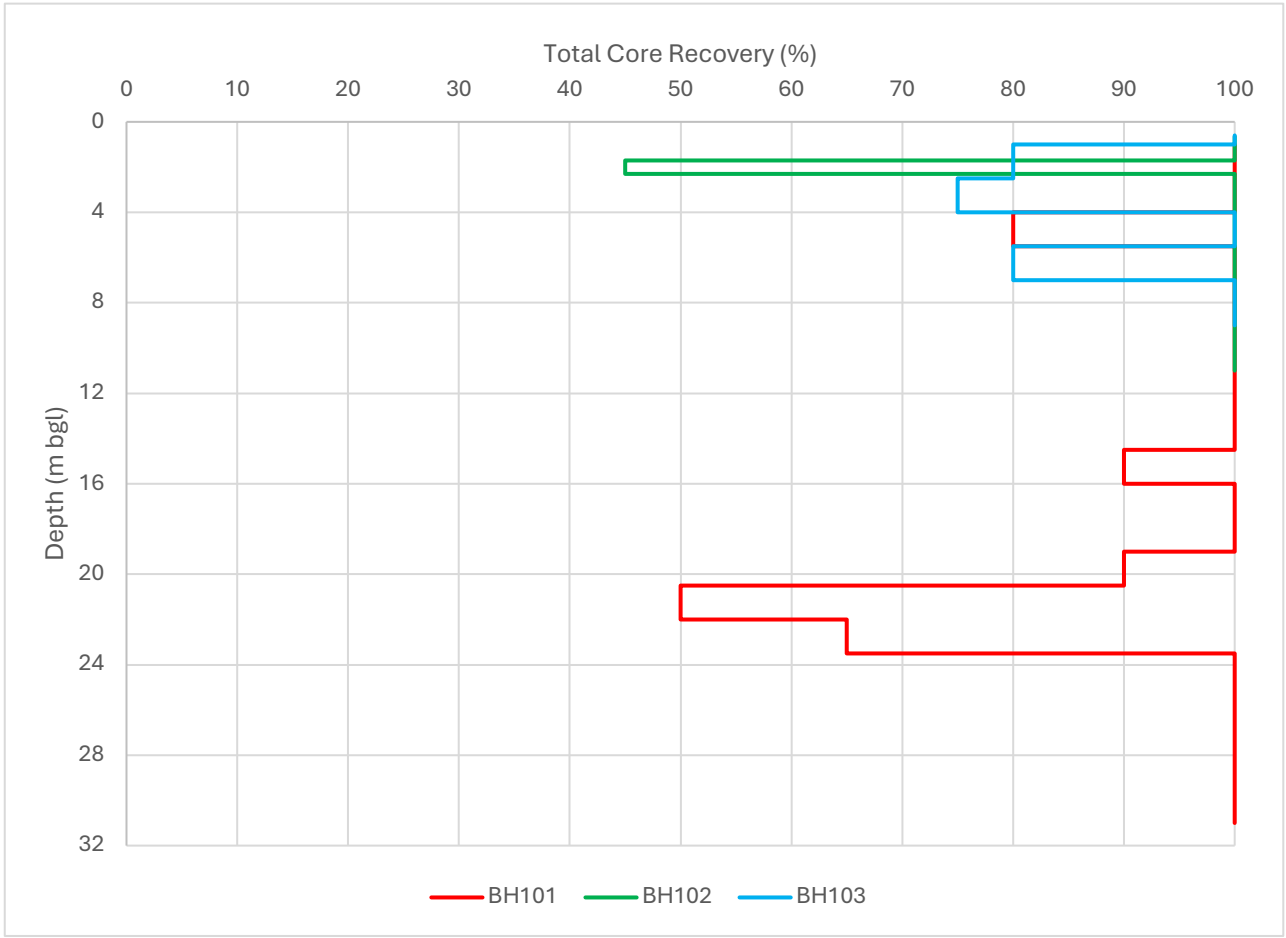
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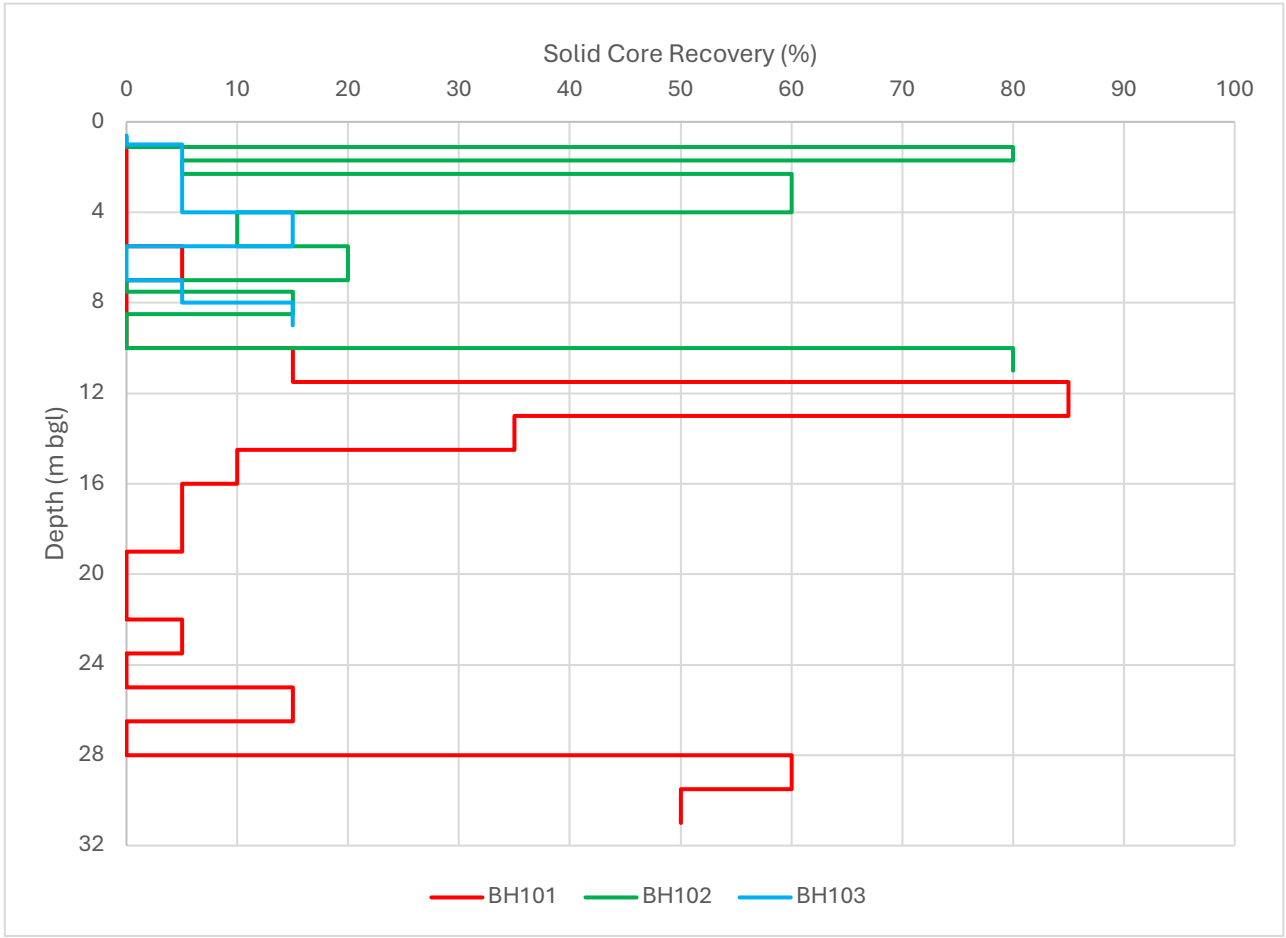
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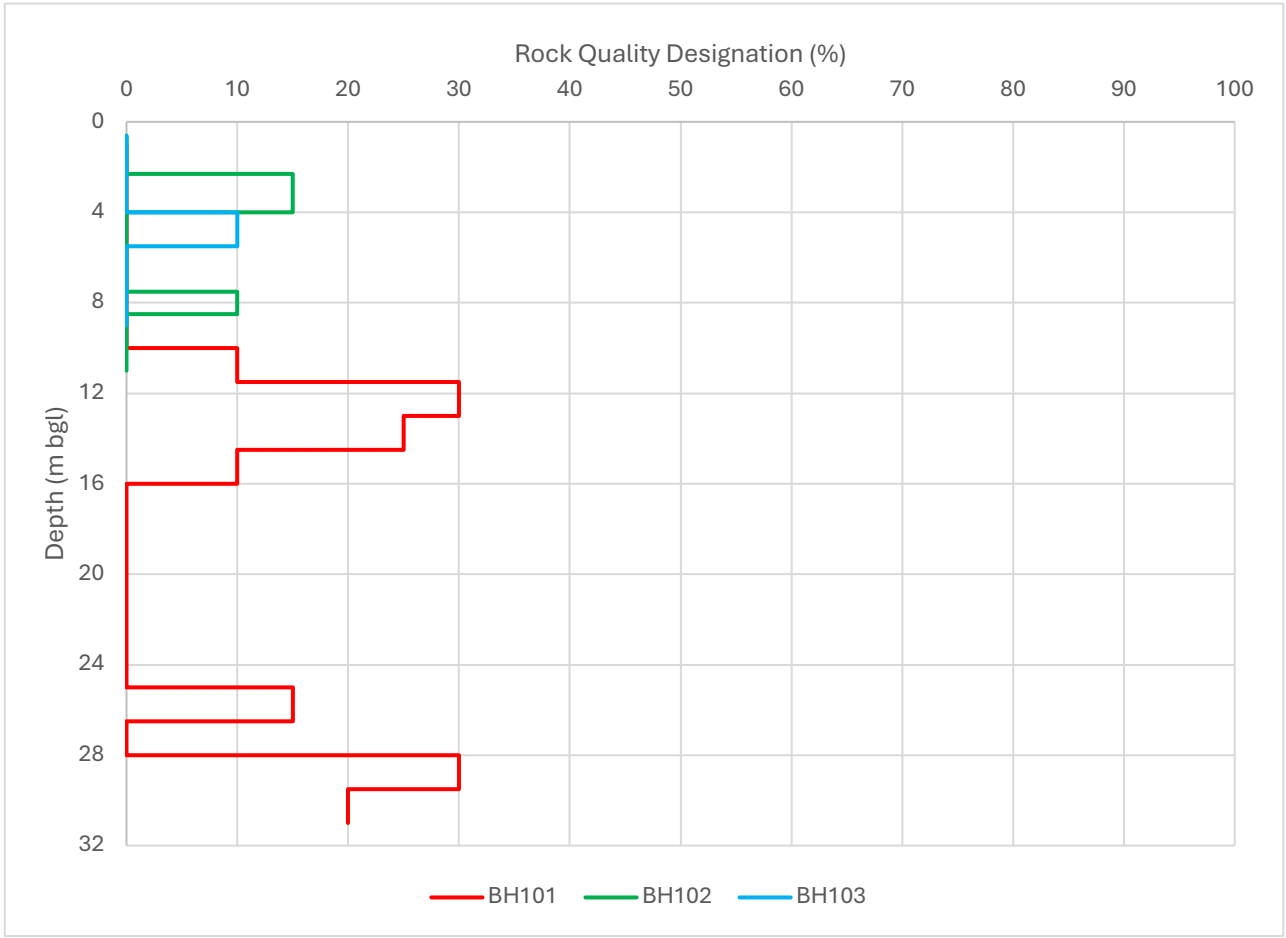
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Client:	SLC	Date:	07/10/2026



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Project Number:	1002	Author:	MW
Location:	Penistone, South Yorkshire	Checked:	HA
Client:	SLC	Date:	07/10/2026



Title:	Solid Core Recovery vs Depth	Figure Number:	9
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Location:	Penistone, South Yorkshire	Checked:	HA
Client:	SLC	Date:	07/10/2026



Title:	Rock Quality Designation vs Depth	Figure Number:	10
Project:	Penistone Footbridge and Car Park	Revision:	P02
Project Number:	1002	Author:	MW
Location:	Penistone, South Yorkshire	Checked:	HA
Client:	SLC	Date:	07/10/2026

Appendix C Site Walkover Photographs

The following should be read in conjunction with Drawing SGL-1002-SLC-DRG-GI-004 (Appendix A).

Photo Number:	P-01	
Direction:	West	
Date & Time:	01/06/2026 09:59	
Description:	View of padlocked access gate off Laird's Way leading into car park site.	
Photo Number:	P-02	
Direction:	North	
Date & Time:	01/06/2026 09:59	
Description:	View of car park eastern boundary, demarcated by retaining wall, and Laird's Way.	

Photo Number:	P-03	
Direction:	North-West	
Date & Time:	01/06/2026 11:00	
Description:	Closer view of car park eastern boundary retaining wall.	
Photo Number:	P-04	
Direction:	North-West	
Date & Time:	01/06/2026 10:05	
Description:	Western half of car park site in foreground, Penistone Station in background.	

Photo Number:	P-05	
Direction:	North	
Date & Time:	01/06/2026 10:05	
Description:	Eastern half of car park site. Derelict steel frame structure and dense vegetation shown.	
Photo Number:	P-06	
Direction:	West	
Date & Time:	01/06/2026 10:09	
Description:	Western boundary of car park site in foreground, Penistone Station in background. Approximate location of proposed footbridge, lift and stairs.	

Photo Number:	P-07	
Direction:	North	
Date & Time:	01/06/2026 10:57	
Description:	Steel frame structure and dense vegetation covering eastern half of car park site.	
Photo Number:	P-08	
Direction:	South-East	
Date & Time:	01/06/2026 10:50	
Description:	Inside of derelict steel frame structure. Concrete slab remains intact.	

Photo Number:	P-09	
Direction:	South-East	
Date & Time:	01/06/2026 10:50	
Description:	View of concrete slab extending west from derelict steel frame structure.	
Photo Number:	P-10	
Direction:	South-East	
Date & Time:	01/06/2026 10:49	
Description:	Maintenance holes located between derelict steel frame structure and substation.	

Photo Number:	P-11	
Direction:	East	
Date & Time:	01/06/2026 10:48	
Description:	View of substation and dense tree cover on inaccessible half of car park site.	
Photo Number:	P-12	
Direction:	North-West	
Date & Time:	01/06/2026 10:57	
Description:	Car park site. Penistone Station can be seen on left-hand-side.	

Photo Number:	P-13	
Direction:	South-East	
Date & Time:	01/06/2026 10:48	
Description:	Car park site. Penistone Station can be seen on right-hand-side.	
Photo Number:	P-14	
Direction:	North-West	
Date & Time:	01/06/2026 09:46	
Description:	Trans Pennine Trail. Penistone Station can be seen on right-hand-side.	

Appendix D GI Contractor's Factual Report

Environmental
Geotechnical
Specialists

FACTUAL
REPORT

job number	C6144/26/E/9573
date	17/09/2026
site address	Land adjacent to Penistone Station, Penistone, Sheffield, South Yorkshire, S36 6HP
written by	T. Merry
checked by	R. Palmer
issued by	T. Merry

Please consider the environment before printing this report.

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CITATION APPROVED Registered Member

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<ENVIRONMENTAL><GEOTECHNICAL>

Rogers Geotechnical Services Ltd
Unit 1 Manorcroft Works, Commercial Road, Skelmanthorpe, Huddersfield, HD8 9DT
01484 604 354 www.rogersgeotech.co.uk Company No: 5130864

Contents

			Page
1.		Introduction	1
2.		Limitations	1
3.		Fieldworks	2
	3.1	Windowless Sample and Rotary Cored Boreholes	2
	3.2	Trial Pits (Mechanical Plant)	2
	3.3	Water Monitoring Standpipes	3
	3.4	Plate Load Testing	3
	3.5	Soakaway Tests	3
4.		Geology	4
5.		Strata Conditions	4
	5.1	General Strata	5
	5.2	Groundwater	5
6.		Insitu Testing	5
	6.1	Standard Penetration Tests	5
	6.2	Groundwater Monitoring	5
7.		Laboratory Testing - Geotechnical	6
8.		Laboratory Testing - Environmental	7
9.		References	7

Appendices

1.	Site Plan
2.	Windowless Sample and Rotary Cored Borehole Records
3.	Trial Pit Logs
4.	Water Monitoring Results
5.	Plate Load Testing Results
6.	Soakaway Results
7.	Laboratory Testing
8.	Photographs

Please consider the environment
before printing this report.

Factual Report on a Ground Investigation

Location:	Land adjacent to Penistone Station Penistone, Sheffield, South Yorkshire, S36 6HP
For:	Sable Leigh Consultancy Ltd
Report No:	C6144/26/E/9573 Report date: September 2026

For and on behalf of **Rogers Geotechnical Services Ltd**

Tobias Merry MSci (Hons), FGS Geo-environmental Engineer	**Rob Palmer** MSc FGS ACIEH Engineering Director

1. Introduction

Sable Leigh Consultancy Ltd (SLC) propose to develop the Land adjacent to Penistone Station, Penistone, Sheffield, South Yorkshire, S36 6HP by the demolition of the existing derelict structure, replacing it and the surrounding area with a large car park, as well as constructing a pedestrian bridge between each platform. Consequently, a site investigation has been undertaken in accordance with the instruction from the client. This work was required in order to determine the nature of the underlying soils and to assess their engineering properties. This report describes the work undertaken and presents the data obtained.

At the time of the investigation, the north-eastern area of the site was occupied by grassland and shrubbery, accessed from Lairds Way, with the southern area of the site occupied by the Pennine Way with some grassed areas off to the side, accessed by a gate from Eastfield Avenue.

2. Limitations

This report has been prepared in accordance with our understanding of current best practice. However, new information or legislation, or changes to best practice may necessitate revision of the report after the date of issue. No liability can be accepted for the incorrect interpretation of any of the factual data supplied, particularly between investigatory locations.

3. Fieldworks

The fieldworks were undertaken between the 1st and 10th August 2026 and included the following:

- Three dynamic sample boreholes with rotary core follow on.
- Standard Penetration Tests (SPTs) within each borehole.
- Installation of three water monitoring standpipes.
- Eight machine excavated trial pits.
- Four California Bearing Ratio (CBR) tests within trial pits.
- Two soakaway tests within trial pits.
- GPR site clearance by Seddon's Surveys.

The investigatory locations were specified by the client on site and are indicated on the site plan which is presented in Appendix 1 to this report. It is noted that despite site clearance prior to site attendance with the excavator, TP206 could not be undertaken due to responses picked up with the CAT4+ immediately before excavations were to take place.

3.1 Windowless Sample and Rotary Cored Boreholes

These boreholes were initially intended to be sunk using a drive-in windowless sampler through the near surface soils. However, upon excavating the service pit at each location refusal was met on rockhead below the safe-dig depth of 1.20m. Standard penetration tests (SPTs) were undertaken at regular intervals (at the end of each sampler drive). The SPTs were conducted in accordance with the procedures given in BS EN ISO 22476: Part 3: 2005 +A1: 2011, and the results are summarised on the borehole records. During this work an automatic trip hammer of 63.5kg falling through 750mm was employed to drive either a cone or split barrel sampler assembly into the ground, the barrel samples were retained in air-tight plastic containers.

On meeting refusal, the three boreholes were progressed by rotary cored drilling techniques utilising water flushing and a 92mm diameter barrel, which recovers an 85mm diameter core. Where necessary, a 103mm diameter casing was spun into the ground to support the sides of the bore.

The recovered cores were sealed and returned to the laboratory for logging and subsequent testing. The soils were described in general accordance with BS5930: 2015+A1: 2020, and full descriptions are given on the boreholes records which are presented in Appendix 2. Also included on these records are the sample depths, ground water levels, the percentages of *Total Core Recovery* (TCR) and, within rock, the *Solid Core Recovery* (SCR) and *Rock Quality Designation* (RQD).

3.2 Trial Pits (Mechanical Plant)

A total of eight trial pits were excavated in order to reveal the nature of the near surface soils using a 13-ton tracked 360° excavator. The soils were logged on site in general accordance with BS5930: 2015+A1: 2020, and full descriptions are given on the trial pit records which are presented in Appendix 3. At regular intervals throughout the excavation of the pits, samples were taken for chemical and geotechnical testing. The test specimens were retained in the appropriate air-tight containers within cool boxes for onward transition to the geotechnical and chemical laboratories.

Once excavations were completed, the trial pits were carefully re-instated with the arisings. Whilst every care was taken during the infilling process, including compacting of the infill at regular intervals with the back-acting arm of the excavator, it should be appreciated that some mounding of the surface may have resulted. Moreover, the infilled soils may be subjected to settlement over time, such that a depression in the surface may also occur. Therefore, the locations of any pits undertaken in this investigation should be conveyed to the current site user, as the mounds or depressions associated with the pits may present a risk to current site operations. Furthermore, it must be realised that the infilled pits represent an area of disturbance within the site soils, thus the soils at the pit locations may vary characteristically compared to the undisturbed ground. As such, foundations placed in this disturbed material may not perform as anticipated.

3.3 Water Monitoring Standpipes

Borehole monitoring standpipes were installed in each of the rotary boreholes and the details of the installations are shown on the appropriate borehole records. The monitoring standpipes consisted of a perforated pipe from 10m depth to between 1.5m and 1.0m below ground level. The response zone was filled with pea gravel, with a bentonite seal above, and the installation was capped with a stop box cover in a concrete surround.

3.4 Plate Load Testing

Plate load testing was undertaken within four of the excavated trial pits. At the elected test depths, the pit was trimmed and flattened as much as practicable. The plate load testing equipment was then placed underneath the excavator, whereupon the excavator was ‘jacked up’ as a dead weight to provide downward pressure upon the underlying plate. The downward movement of the plate was then monitored constantly, and the test was completed in general accordance with the method given in BS1377: Part 9: 1990: 4.1. These tests are presented in Appendix 5.

3.5 Soakaway Tests

Soakaway tests were conducted within two of the trial pits excavated. At the elected test depths, the pit was trimmed and squared as much as practicable. Water was then pumped into the pit and the level monitored at timed intervals relative to a reference bar at ground level. These tests were conducted and calculated in general accordance with the method given by BRE Digest 365 and the results are presented in Appendix 6.

4. Geology

The available published geological data for the site has been examined, and the following table presents the anticipated geology.

Table 1: Geological Data for the Site

Strata Type	Strata Name[1]	Previous Name[2]	Description[2]
Superficial Geology	-	-	Not anticipated to underly the site.
Solid Geology	Pennine Lower Coal Measures Formation	Grey Measures of Yorkshire and Nottingham	Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.
	Penistone Flags	-	Sandstone.

5. Strata Conditions

The investigation revealed the following strata:

Table 2: Generalised Strata Profile

Depth m below ground level to underside of layer	Strata Type	Encountered in	Groundwater Strikes m below ground level
0.20 – 0.75	Topsoil (Dark brown silty very sandy GRAVEL).	BH101, TP201, TP202, TP203, TP204, TP205, TP207, TP208, TP209	None
0.40	Topsoil (Dark greyish brown silty gravelly SAND with low cobble content).	BH102	None
0.60 – 0.65	Made Ground (Very silty gravelly SAND with low cobble content).	BH102, BH103	None
1.10	Silty very sandy GRAVEL. Residual Pennine Lower Coal Measures Formation	BH101	None
+1.10 – 21.40	MUDSTONE. Pennine Lower Coal Measures Formation	ALL	BH101 at 7.00m, BH103 at 1.20m and 2.00m
+11.00 – +31.00	SILTSTONE. Pennine Lower Coal Measures Formation	BH101, BH102	None
3.45 – 14.70	SANDSTONE. Pennine Lower Coal Measures Formation	BH101, BH102	None
28.85	COAL.	BH101	None

'+' denotes that the strata extended below the termination depth of the investigated positions, thus the extent of the deposit is only proven to the depths indicated.

[1] Sources: British Geological Survey (NERC) Map Sheets 86; Glossop; Solid and Drift Edition, and Geology of Britain Viewer [*online resource from www.bgs.ac.uk*]
[2] Sources: British Geological Survey (NERC) Lexicon of Named Rock Units [*online resource from www.bgs.ac.uk*]

5.1 General Strata

The investigation has revealed that below a thin capping of topsoil and made ground, silty very sandy gravel was recorded to 1.10m below existing ground level (begl) within position BH101. However, underlying this capping within position BH102, sandstone was observed to a depth of 3.45m begl.

Underneath the capping of made ground, and below the sandstone and gravel with BH102 and BH101, mudstone was exposed to a depth of 10.20m and 10.80m within BH102 and BH101 respectively, and to termination of all other positions. Below the mudstone within BH102, siltstone was uncovered to termination; however, within BH101 sandstone was exposed to a depth of 12.95m begl, followed by siltstone to 14.05m begl, then sandstone to 14.70m begl and siltstone to 17.00m begl.

Following on from the siltstone within BH101, mudstone was revealed to a depth of 21.40m begl followed by siltstone to termination of the borehole, with a small band of coal between 27.90m and 28.85m begl. Taking into consideration the available geological data for the site, these strata are anticipated to represent Pennine Lower Coal Measures Formation.

5.2 Groundwater

Groundwater strikes were observed within BH101 at 7.00m depth rising to 4.80m depth after 20 minutes of monitoring, and within BH103 at 1.20m and 2.00m depth remaining static after 20 minutes of monitoring. However, it should be appreciated that the normal rate of boring does not permit the recording of an equilibrium water level for any one strike. Moreover, groundwater levels are subject to seasonal variation or changes on local drainage conditions.

6. Insitu Testing

6.1 Standard Penetration Tests

The standard penetration tests undertaken are summarised in the following table:

Table 3: Summary of Standard Penetration Tests

Strata	Depth Range (m)	SPT 'N' (Blows/300mm)	Comments
		Rock	
Mudstone	0.60 – 8.00	85 to 121	Indicative of rock.

6.2 Groundwater Monitoring

The standpipes were monitored between the 22nd July and the 12th August 2026. The results of the groundwater monitoring undertaken are tabulated below and sull results are presented in Appendix 4.

Table 4: Summary of Standard Penetration Tests			
Location	**Date**	**Water Level (m)**	**Standpipe Depth (m)**
BH101	22/07/2026	5.40	10.73
	29/07/2026	6.40	
	05/08/2026	7.62	
	12/08/2026	9.19	
BH102	22/07/2026	10.03	10.11
	29/07/2026	10.01	
	05/08/2026	10.03	
	12/08/2026	DRY	
BH103	22/07/2026	7.13	8.38
	29/07/2026	7.11	
	05/08/2026	7.14	
	12/08/2026	7.24	

7. Laboratory Testing - Geotechnical

The following programme of laboratory testing has been undertaken on samples obtained during this investigation:

- Determination of water content of rock — BS EN ISO 17892-1:2014+A1:2022
- Dry density/water content relationship light — BS 1377: Pt 4:1990, clause 3.3, 2.5kg
- Dry density/water content relationship heavy — BS 1377: Pt 2:2022
- Uniaxial Compressive Strength — ASTM: D2938-95 (2002)
- Point Load Strength Index Test — ISRM (1984)
- Determination of total sulphur — BS 1377-3:2018+A1:2021: Pt3: 7.10
- Soluble sulphate content — BS 1377-3:2018+A1:2021: Pt3: 7.3
- pH value — BS 1377-3:2018+A1:2021: Pt3: 12

The test results are presented in Appendix 7 and are summarised below:

Table 5: Summary of Geotechnical Test Results				
Test type	**Number of tests**	**Range of results**		**Comments**
Moisture content of soil determinations	8	6.5% to 9.9%		Generally increasing with depth.
Moisture content of rock determinations	44	1.9% to 8.7%		Variable with depth
Dry density/water content relationship – light compaction	5	Max. Dry Density Optimum Water Content	1.84 to 1.94 Mg/m^3 13% to 14%	

Dry density/water content relationship – heavy compaction	3	Max. Dry Density Optimum Water Content	1.94 to 2.02 Mg/m^3 8.8% to 11%	
Dry density/water content relationship – vibrating hammer compaction	2	Max. Dry Density Optimum Water Content	1.85 to 1.90 Mg/m^3 11% to 13%	
Point load	43	$Is_{(50)}$Axial	0.06 to 3.51 MPa	Assume UCS = $Is_{(50)}$*20
Uniaxial compressive strength	1	77 MPa		
Determination of total sulphur	6	0.006% to 0.016%		
Soluble sulphate	6	SO_4	0.00979 & 0.0201g/l	
pH	27	6.1 – 8.7		

*Additional results will be provided in due course.

9. Laboratory Testing - Environmental

A number of testing suites were conducted on samples from across the site and the following regimes were undertaken.

- Suite E1 – As, Cd, Cr (total), Cr^{VI}, Cu, Pb, Hg, Ni, Zn, Sb, Be, V, CN^- (total),pH, B (soluble), phenols (total) and total organic carbon.
- Suite E2 – Asbestos presence and identification, asbestos quantification.
- Suite E3 – Petroleum hydrocarbons (TPHCWG).
- Suite E4 – Polycyclic aromatic hydrocarbons (PAHs).
- Suite E5 – Total BTEX, benzene, toluene, ethyl benzene, m & p xylene, o xylene, MTBE.
- Suite E6 – Volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).
- Suite E7 – Polychlorinated biphenyls (PCBs).

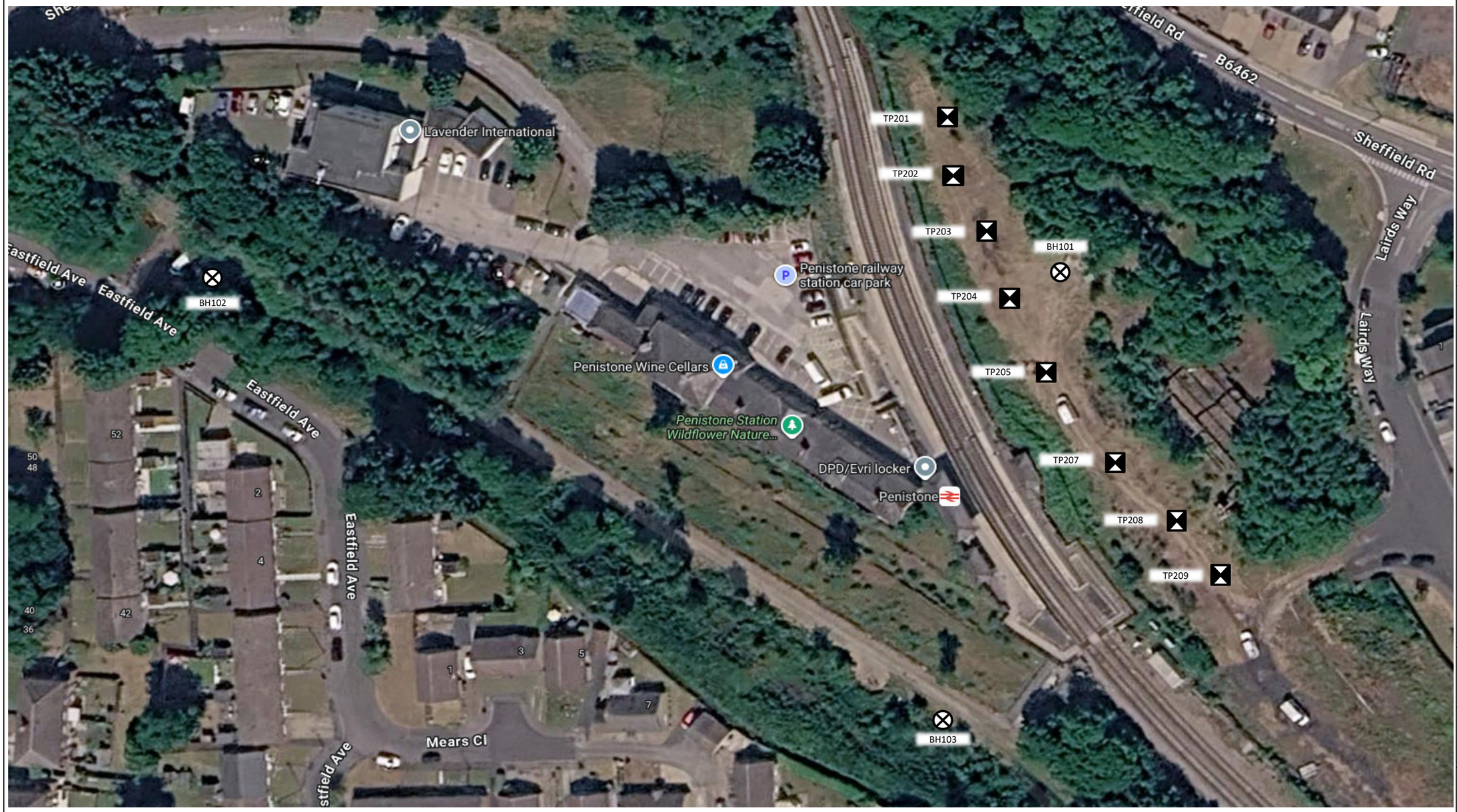
This testing was undertaken by i2 Analytical Ltd and the results of the chemical testing are presented in Appendix 7 of this report.

9. References

- British Standards Institution (1990) BS1377: *British standard methods of test for soils for civil engineering purposes,* B.S.I., London.
- British Standard Institution (2005 +A1: 2011) EN ISO 22476-3: *Geotechnical investigation and testing – Field testing, Part 3: Standard penetration test,* B.S.I., London.
- British Standards Institution (2015+ A1: 2020) BS5930: *Code of practice for ground investigations*, B.S.I., London.
- British Geological Survey (NERC) (2026), BGS, Keyworth.
  - Geology of Britain Viewer: (*http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html)*
  - Lexicon of Named Rock Units: (*http://www.bgs.ac.uk/lexicon/)*

Appendix 1

Site Plan



Notes:

Investigation positions approximated from site operative's notes.

RGS Environmental Geotechnical Specialists

Rogers Geotechnical Services Ltd

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Client:

Sable Leigh Consultancy Ltd

Job Number:

C6144/26/E/9573

Project Details:

Land adjacent to Penistone Station

Scale:	Not to scale - reference only

ground investigation | drilling & excavation | insitu testing
laboratory testing & gas monitoring | engineering consultancy
surveying & flood risk assessments | training, CPD & expert witness
... delivered using our own drilling rigs / crews / soils lab / engineers

Appendix 2

Windowless Sample and Rotary Cored Borehole Logs

Borehole Log

RGS Environmental Geotechnical Specialists

Borehole No. **BH101** Sheet 1 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.20	ES						0.25	212.80		TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
		0.40 - 0.60	ES									Yellowish brown becoming brown, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of sandstone. Sand is fine to coarse.
		0.80 - 1.00	ES									Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
									1.10	211.95		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION
				85	100	0	0	3 10 60	1.50	211.55		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
									2.50	210.55		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION
								15 30 50	2.75	210.30		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
				85	100	0	0	20 35 75	2.95	210.10		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION
		4.00	C						4.00	209.05		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
		4.00 - 4.60	D	85	80	0	0		4.60	208.45		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining,
	▼	4.80 (20 mins)										

Remarks

AGS

Borehole Log

Environmental Geotechnical Specialists

Borehole No. **BH101**

Sheet 2 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description	
								25 60 170				Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	
		5.50 5.50 - 5.60	C C									*5.05m to 5.25m: No recovery.*	
		6.00 (0 mins)		85	100	5	0	40 85 120	6.00	207.05		Extremely weak, thickly laminated, grey laminated dark grey MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to 70°, smooth planar to smooth undulating, clean with iron staining. PENNINE LOWER COAL MEASURES FORMATION	6
								20 55 110	6.60	206.45		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	
		7.00 7.00 - 7.55 7.00	C D						7.00	206.05		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION	7
				85	100	0	0		7.55	205.50		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	8
								10 35 80					
		8.95 - 9.05	C						8.95	204.10		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION	9
				85	100	0	0		9.05	204.00		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	
								5 25 60					10

Remarks

AGS

Borehole Log

Environmental Geotechnical Specialists

Borehole No. **BH101**

Sheet 3 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
				85	100	15	10					Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION
									10.90	202.15		
		11.10 - 11.26	C					55				Medium strong, thinly bedded, dark grey fine- to medium-grained SANDSTONE. Fractures are closely spaced, sub-horizontal , rough undulating. closed to open and clean. PENNINE LOWER COAL MEASURES FORMATION
		11.26 - 11.35	C					100 160				
		11.45 - 11.50	C									
		11.50 - 11.70	C									
		11.70 - 11.75	C									
				85	100	85	30	20 180 420				
		12.60 - 12.75	C									
		12.75 - 12.80	C									
									12.95	200.10		Extremely weak, thinly bedded, dark grey laminated grey SILTSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, rough undulating, closed to open, commonly clean, uncommonly infilled with silty gravel. PENNINE LOWER COAL MEASURES FORMATION
				85	100	35	25	30 50 90				
		13.95 - 14.40	C									
									14.05	199.00		Medium strong, thinly to medium bedded, grey to dark grey SANDSTONE. Fractures are closely to medium spaced, sub-horizontal, rough undulating, open and clean. PENNINE LOWER COAL MEASURES FORMATION
		14.40 - 14.50	C					100 205 350				
		14.50 - 14.70	C									Extremely weak, thinly bedded, dark grey laminated grey SILTSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, rough undulating, closed to open and clean. PENNINE LOWER COAL MEASURES FORMATION
									14.70	198.35		

Depth ticks: 11, 12, 13, 14, 15

Remarks

AGS

Borehole Log

Environmental Geotechnical Specialists

Borehole No. **BH101**

Sheet 4 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description	
				85	90	10	10	10 70 200				Extremely weak, thinly bedded, dark grey laminated grey SILTSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, rough undulating, closed to open and clean. PENNINE LOWER COAL MEASURES FORMATION	16
				85	100	5	0		17.00	196.05		Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	17
		18.10 - 18.26	C	85	100	5	0	5 15 40 20 90 160	17.50 17.90	195.55 195.15		Extremely weak, thinly laminated, brown and grey MUDSTONE, recovered as silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION Extremely weak, thinly to thickly laminated, greyish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth planar to rough undulating, closed to open, commonly clean with iron staining, uncommonly infilled with silty gravel of mudstone. PENNINE LOWER COAL MEASURES FORMATION	18
				85	90	0	0	1 10 60	19.00	194.05		Extremely weak, thinly laminated grey and brown heavily fractured MUDSTONE.	19 20

Remarks

AGS

Borehole Log

Borehole No. **BH101**

Sheet 5 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
												Extremely weak, thinly laminated grey and brown heavily fractured MUDSTONE.
												20.50m to 21.20m: No recovery.
				85	50	0	0					
									21.40	191.65		Extremely weak, thickly laminated, dark grey SILTSTONE. Fractures are very closely spaced, sub-horizontal and sub-vertical, smooth undulating, closed, commonly clean, uncommonly infilled with silty gravel. PENNINE LOWER COAL MEASURES FORMATION
												22.00m to 22.50m: No recovery.
				85	65	5	0					
								5 35 140				
				85	100	0	0					

21 22 23 24 25

Remarks

AGS

Borehole Log

Environmental Geotechnical Specialists

Borehole No. **BH101**

Sheet 6 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing							Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)					
		25.20 - 25.35	C									Extremely weak, thickly laminated, dark grey SILTSTONE. Fractures are very closely spaced, sub-horizontal and sub-vertical, smooth undulating, closed, commonly clean, uncommonly infilled with silty gravel. PENNINE LOWER COAL MEASURES FORMATION	
		25.55 - 25.70	C	85	100	15	15					*25.00m to 25.20m: Recovered as gravel.* *25.35m to 25.55m: Recovered as gravel.*	26
		27.45 - 27.65	C	85	100	0	0						27
		28.00 - 28.20	C					10 100 200	27.90	185.15		Extremely weak, very thinly to thinly bedded, dark grey to black COAL. Fractures are closely spaced, sub-horizontal and sub-vertical, rough stepped, open, commonly infilled with gravel, uncommonly clean.	28
		28.50 - 28.85	C	85	100	60	30					*28.70m to 28.75m: Grey mudstone band.*	
		28.85 - 29.10	C					15 90 250	28.85	184.20		Extremely weak, very thinly bedded to thinly bedded, grey to dark grey SILTSTONE. Fractures are closely spaced, sub-horizontal, rough stepped, open and commonly infilled with gravel.	29
													30

Remarks

AGS

Borehole Log

Borehole No. **BH101**

Sheet 7 of 7

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403315.54 - 425134.22	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	213.05m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	01/07/2026 - 02/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
				85	100	50	20		31.00	182.05		Extremely weak, very thinly bedded to thinly bedded, grey to dark grey SILTSTONE. Fractures are closely spaced, sub-horizontal, rough stepped, open and commonly infilled with gravel.
												End of Borehole at 31.00m

31
32
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Remarks

Borehole Log

RGS Environmental Geotechnical Specialists

Borehole No. **BH102**

Sheet 1 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403313.15 - 424974.52	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	216.43m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	08/07/2026 - 09/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.20	ES									TOPSOIL (Dark greyish brown, silty, gravelly fine to coarse SAND, with low cobble content. Gravel is angular to sub-angular and fine to coarse of various lithologies, brick, concrete and slag. Cobbles are angular to sub-rounded <110mm of sandstone).
		0.40 - 0.60	ES						0.40	216.03		MADE GROUND (Dark brown, very silty, gravelly fine to coarse SAND, with low cobble content. Gravel is angular to sub-angular and fine to coarse of various lithologies, brick, concrete and slag. Cobbles are angular to sub-angular and <250mm of sandstone and concrete).
		0.65 - 0.90	ES	85	100	0	0		0.65	215.78		Orangish brown, fine-medium grained SANDSTONE, recovered as sandy, silty clay. PENISTONE FLAGS
		1.25 - 1.35	C						0.90	215.53		Medium strong, very thinly to thinly bedded, orangish brown, fine- to medium-grained SANDSTONE. Fractures are very closely to closely spaced, sub-horizontal, rough undulating, open and clean. PENISTONE FLAGS
		1.40 - 1.50	C	85	100	80	0	20				
		1.50 - 1.57	C					85				
		1.57 - 1.76	C					110				
				85	45	5	0					
									2.30	214.13		Medium strong, very thinly to thinly bedded, orangish brown, fine- to medium-grained SANDSTONE, recovered as silty, sandy GRAVEL. PENISTONE FLAGS
									2.50	213.93		Medium strong, very thinly to thinly bedded, orangish brown, fine- to medium-grained SANDSTONE. Fractures are very closely to closely spaced, sub-horizontal, rough undulating, open, commonly clean, uncommonly infilled with silty gravel. PENISTONE FLAGS
		2.85 - 2.90	C					30				
								45				
				85	100	60	15	190				
		3.20 - 3.40	C									
		3.45 - 3.53	C						3.45	212.98		Extremely weak, thickly laminated to very thinly bedded, dark grey locally grey MUDSTONE. Fractures are very closely spaced, sub-horizontal, locally sub-vertical, smooth stepped, closed to open, commonly clean, uncommonly infilled with silty gravel, with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		3.53 - 3.59	C									
								5				
								55				
								80				
				85	100	10	0					

1 2 3 4 5

Remarks

AGS

Borehole Log

RGS Environmental Geotechnical Specialists

Borehole No. **BH102**

Sheet 2 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403313.15 - 424974.52	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	216.43m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	08/07/2026 - 09/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
												Extremely weak, thickly laminated to very thinly bedded, dark grey locally grey MUDSTONE. Fractures are very closely spaced, sub-horizontal, locally sub-vertical, smooth stepped, closed to open, commonly clean, uncommonly infilled with silty gravel, with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		6.20 - 6.30	C	85	100	20	0		6.20	210.23		Extremely weak, very thinly bedded, dark grey MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal and sub-vertical, smooth stepped and rough undulating, commonly clean, rarely infilled with silty gravel, with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		6.73 - 6.84	C					40 60 110				Extremely weak, very thinly bedded, dark grey MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
				85	100	0	0		7.05	209.38		Extremely weak, very thinly bedded, dark grey locally orangish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal, smooth stepped, closed and clean with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
								25	7.50	208.93		Extremely weak, very thinly bedded, dark grey locally orangish brown MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
								25 30 30 35 40	7.60 7.70 7.75	208.83 208.73 208.68		Extremely weak, very thinly bedded, dark grey locally orangish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal, smooth stepped, closed and clean with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		8.20 - 8.33	C	85	100	15	10					
								50 90 130	8.20 8.40	208.23 208.03		Extremely weak, very thinly bedded, dark grey locally orangish brown MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
									8.70	207.73		Extremely weak, very thinly to thinly bedded, dark grey locally orangish brown MUDSTONE. Fractures are very closely spaced, sub-horizontal, smooth stepped, closed and clean with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
				85	100	0	0	30 80 110				
									9.45	206.98		Extremely weak, very thinly bedded, dark grey locally orangish brown MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
								5 20 110				Extremely weak, very thinly to thinly bedded, dark grey and brown MUDSTONE. Fractures are very closely to
									10.00	206.43		

Remarks

AGS

Borehole Log

Environmental Geotechnical Specialists

Borehole No. **BH102**

Sheet 3 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403313.15 - 424974.52	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	216.43m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	08/07/2026 - 09/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
		10.15 - 10.21	C						10.10	206.33		Extremely weak, very thinly to thinly bedded, dark grey and brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, rough stepped, closed to open, commonly infilled with silty gravel, uncommonly clean with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		10.32 - 10.40	C									
		10.40 - 10.49	C	85	100	80	0	30				
		10.64 - 10.72	C					70 90				
		10.82 - 10.87	C									
									11.00	205.43		Extremely weak, thickly laminated to very thinly bedded, greyish brown locally orangish brown MUDSTONE. Fractures are extremely closely to closely spaced, sub-horizontal to sub-vertical, rough and smooth stepped, closed to open, commonly clean and rarely infilled with silty gravel with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
												Extremely weak, thickly laminated to very thinly bedded, greyish brown locally orangish brown MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
												Extremely weak, very thinly to thinly bedded, dark grey and brown interlaminated SILTSTONE. Fractures are very closely to closely spaced, sub-horizontal to 80°, rough undulating and stepped, closed to open and clean.
												End of Borehole at 11.00m

11 12 13 14 15

Remarks

AGS

Borehole Log

Borehole No. **BH103**

Sheet 1 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403232.19 - 425095.03	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	214.84m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	03/07/2026 - 07/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.20	ES									MADE GROUND (Brownish grey, silty, very gravelly fine to coarse SAND, with low cobble content. Gravel is angular to sub-angular and fine to coarse of various lithologies, brick and concrete. Cobbles are angular to sub-angular and <200mm of sandstone, bricks and concrete).
		0.40 - 0.60	ES						0.60	214.24		Extremely weak, thickly laminated, brownish grey MUDSTONE, recovered as very silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
		0.80 - 1.00	ES	85	100	0	0					*1.00m to 1.30m: No recovery.*
	▼	1.20 1.20 (0 mins)										
				85	80	5	0	15 35 80	1.50	213.34		Extremely weak, thickly laminated grey and brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal and sub-vertical, rough stepped and rough planar, closed to open, commonly infilled with silty gravel, uncommonly clean. PENNINE LOWER COAL MEASURES FORMATION
	▼	2.00 2.00 (0 mins)										
									2.50	212.34		Extremely weak, thickly laminated, brownish grey MUDSTONE, recovered as very silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
		3.10 - 3.25	C	85	75	5	0	15 60 150	3.10	211.74		*2.50m to 2.80m: No recovery.* Extremely weak, thickly laminated grey and brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal and sub-vertical, rough stepped and rough planar, closed to open, commonly infilled with silty gravel, uncommonly clean. PENNINE LOWER COAL MEASURES FORMATION
		3.65 - 3.70	C									
		4.00 - 4.40	C						4.00	210.84		Extremely weak, thickly laminated grey and brown MUDSTONE, recovered as gravelly, silty clay. PENNINE LOWER COAL MEASURES FORMATION
		4.50 - 4.55	C	85	100	15	10	10 60 180	4.40	210.44		Extremely weak, thickly laminated grey and brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal and sub-vertical, rough stepped and rough planar, closed to open, commonly infilled with silty gravel, uncommonly clean. PENNINE LOWER COAL MEASURES FORMATION
		4.73 - 4.89	C									

Remarks

Borehole Log

RGS Environmental Geotechnical Specialists

Borehole No. **BH103**

Sheet 2 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403232.19 - 425095.03	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	214.84m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	03/07/2026 - 07/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)	Depth (m)	Level (m)	Legend	Stratum Description
		5.23 - 5.35	C									Extremely weak, thickly laminated grey and brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal and sub-vertical, rough stepped and rough planar, closed to open, commonly infilled with silty gravel, uncommonly clean. PENNINE LOWER COAL MEASURES FORMATION
									5.50	209.34		Extremely weak, thickly laminated, dark grey locally orangish brown MUDSTONE, recovered as very silty, sandy gravel. PENNINE LOWER COAL MEASURES FORMATION
				85	80	0	0					*5.50m to 5.80m: No recovery.*
									6.80	208.04		Extremely weak, thickly laminated, dark grey locally orangish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth stepped, open and commonly clean locally uncommonly infilled with silty gravel with local iron staining. PENNINE LOWER COAL MEASURES FORMATION
		7.63 - 7.70	C	85	100	5	0	10 25 110				
		8.53 - 8.60 8.60 - 8.70 8.80 - 8.92	C C C	85	100	15	0					
									9.00	205.84		Extremely weak, thickly laminated, dark grey locally orangish brown MUDSTONE, recovered as silty gravel. PENNINE LOWER COAL MEASURES FORMATION
									9.60	205.24		Extremely weak, thickly laminated, dark grey locally orangish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth stepped, open and commonly clean locally uncommonly infilled with silty gravel with local iron staining. PENNINE LOWER COAL MEASURES FORMATION
		9.90 - 9.95	C									

6 7 8 9 10

Remarks

AGS

Borehole Log

Borehole No. **BH103**

Sheet 3 of 3

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords:	403232.19 - 425095.03	Hole Type RC
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Level:	214.84m aOD	Scale 1:25
Client:	Sable Leigh Consultancy Ltd		Dates:	03/07/2026 - 07/07/2026	Logged By TM

Well	Water Strikes	Samples and In Situ Testing							Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Dia. (mm)	TCR (%)	SCR (%)	RQD (%)	FS (mm)				
		10.07 - 10.14	C									Extremely weak, thickly laminated, dark grey locally orangish brown MUDSTONE. Fractures are very closely to closely spaced, sub-horizontal to sub-vertical, smooth stepped, open and commonly clean locally uncommonly infilled with silty gravel with local iron staining. PENNINE LOWER COAL MEASURES FORMATION
		10.45 - 10.50	C						10.50	204.34		
												Extremely weak, thinly to thickly laminated, dark grey locally orangish brown MUDSTONE. Fractures are extremely closely to very closely spaced, sub-horizontal and sub-vertical, smooth stepped, closed to open, commonly clean, uncommonly infilled with silty gravel, with local iron staining. PENNINE LOWER COAL MEASURES FORMATION
		11.35 - 11.44	C						11.35	203.48		
		11.50 - 11.55	C									
									11.65	203.18		Extremely weak, very thinly to thinly bedded, dark grey MUDSTONE. Fractures are very closely spaced, sub-horizontal to 40°, smooth stepped, closed to open and clean, with localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
		11.85 - 11.90	C									
									12.00	202.84		Extremely weak, thinly bedded, dark grey locally orangish brown MUDSTONE. Fractures are closely spaced, sub-horizontal and sub-vertical, smooth stepped and rough undulating, open and clean, within localised iron staining. PENNINE LOWER COAL MEASURES FORMATION
												End of Borehole at 12.00m

11 12 13 14 15

Remarks

Appendix 3

Trial Pit Logs

Trial Pit Log

Trialpit No **TP201** Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403346.89 - 425113.77 Level: 213.08
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 1.50	2.1 × 0.7
Client:	Sable Leigh Consultancy Ltd		

Date 10/07/2026 | Scale 1:25 | Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.50	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.50	212.58		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
	1.00 - 1.50 1.00 - 1.50	B ES					
				1.50	211.58		End of pit at 1.50 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP202**

Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403329.64 - 425116.36 Level: 213.14
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 1.10	2.3 / 1
Client:	Sable Leigh Consultancy Ltd		

Date 10/07/2026

Scale 1:25

Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.50	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.75	212.39		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
	0.75 - 1.25 0.75 - 1.25	B ES		1.10	212.04		End of pit at 1.10 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP203**

Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403323.74 - 425118.04 Level: 213.15
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 2.60	3.7 × 0.7
Client:	Sable Leigh Consultancy Ltd		

Date 08/07/2026

Scale 1:25

Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.40	ES		0.40	212.75		TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
	1.25 - 1.35 1.25 - 1.35	B ES		2.60	210.55		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION End of pit at 2.60 m

1 2 3 4 5

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP204** Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403308.91 - 425121.93 Level: 213.19	Date 09/07/2026
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP		Dimensions (m): Depth 1.60 (2.2 × 0.7)	Scale 1:25
Client:	Sable Leigh Consultancy Ltd			Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.20	ES		0.20	212.98		TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
	0.50 - 1.00 0.50 - 1.00	B ES					Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
				1.60	211.58		End of pit at 1.60 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP205**

Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403273.93 - 425126.82 Level: 213.39
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 2.40	1.6 × 1.2
Client:	Sable Leigh Consultancy Ltd		

Date 10/07/2026

Scale 1:25

Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.25	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.40	212.99		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
	1.00 - 1.60 1.00 - 1.60	B ES					
				2.40	210.99		End of pit at 2.40 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP207** Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403275.64 - 425145.94 Level: 213.38	Date 08/07/2026
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 2.10	2.2 × 0.7	Scale 1:25
Client:	Sable Leigh Consultancy Ltd			Logged TM

Water Strike	Samples and In Situ Testing Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.70	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.70	212.68		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.
	1.40 - 1.50 1.40 - 1.50	B ES					
				2.10	211.28		End of pit at 2.10 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP208**

Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403270.44 - 425147.67 Level: 213.38
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 1.60	2.6 × 1.2
Client:	Sable Leigh Consultancy Ltd		

Date 09/07/2026

Scale 1:25

Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.40	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.60	212.78		
	0.60 - 1.00	B					Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
	0.60 - 1.00	ES					
				1.60	211.78		End of pit at 1.60 m

Remarks:

Stability: Stable

Trial Pit Log

Trialpit No **TP209** Sheet 1 of 1

Project Name:	Land adjacent to Penistone Station	Project No. C6144/26/E/9573	Co-ords: 403258.98 - 425156.07 Level: 213.35
Location:	Penistone, Sheffield, South Yorkshire, S36 6HP	Dimensions (m): Depth 2.40	2.9 × 0.8
Client:	Sable Leigh Consultancy Ltd		Date 10/07/2026 Scale 1:25 Logged TM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.35	ES					TOPSOIL (Dark brown, organic, silty, very sandy angular to sub-angular and fine to coarse GRAVEL of various lithologies, brick, slag and concrete. Sand is fine to coarse).
				0.35	213.00		Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles. PENNINE LOWER COAL MEASURES FORMATION
	1.00 - 1.50	B					
	1.00 - 1.50	ES					
				2.40	210.95		End of pit at 2.40 m

Remarks:

Stability: Stable

Appendix 4

Water Monitoring Results

Post Fieldworks Discrete Well Monitoring Site Record

Job No:	C/6144/26/E/9573	Client:	SLC Rail	Visit:	1	Of	4
Site:	LandAdjacentPenistoneStation S36 6HP	Date:	22.07.2026				

Rogers Geotechnical Services Ltd , Offices 1 & 2
Barncliffe Business Park, Shelley, Huddersfield, HD8 8LU

Tel: 01484 604 354
enquiries@rogersgeotech.co.uk

Location ID	Methane (%)		Carbon Dioxide (%)		Carbon Monoxide (ppm)		Hydrogen Sulphide (ppm)		Oxygen (%)		VOCs (ppm)		Flowrate (l/hr)		Water Depth (m)	Well Depth (m)	Installed Depth (m)	Comments
	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady	Peak	Steady	Peak				
BH101															5.40		10.73	
BH102															10.03		10.11	
BH103															7.13		8.65	
Max.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.03			
Min.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.40			

ND - Not detected DRY - No water in well NM - Not Monitored (State Reason in comments)

Meteorological & Site Information	
General Ground Condition	
Precipitation	
Wind	
Temperature	
Barometric Pressure	
Pressure Trend	

Monitor Technical Specifications								
Gas Monitor Used:	GA 5000							
Serial No:	G504785							
Monitor Gas Range	CH_4	5>60	CO_2	5<40	O_2	21.2		
Gas Flow Range	0-10 l/hr							
Date of Calibration	19.02.2026							
PID Monitor (If used)								
PID Monitor Serial No.								
Calibration Date.								

Monitoring Period Summary (All Visits)	Peak	Steady
Max CH_4	0.0	0.0
Max CO_2	0.0	0.0
Max CO	0.0	0.0
Max H_2S	0.0	0.0
Max O_2	0.0	0.0
Min O_2	0.0	0.0
Flow rate	0.0	0.0

	Start	End
Barometric Pressure		

Operative Details.	M.Tuck

Post Fieldworks Discrete Well Monitoring Site Record

Job No:	C/6144/26/E/9573	Client:	SLC Rail	Visit:	2	Of	4
Site:	LandAdjacentPenistoneStation S36 6HP	Date:	29.07.2026				

Environmental Geotechnical Specialists

Rogers Geotechnical Services Ltd , Offices 1 & 2
Barncliffe Business Park, Shelley, Huddersfield, HD8 8LU

Tel: 01484 604 354
enquiries@rogersgeotech.co.uk

Location ID	Methane (%)		Carbon Dioxide (%)		Carbon Monoxide (ppm)		Hydrogen Sulphide (ppm)		Oxygen (%)		VOCs (ppm)		Flowrate (l/hr)		Water Depth (m)	Well Depth (m)	Installed Depth (m)	Comments
	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady	Peak	Steady	Peak				
BH101															6.40		10.74	
BH102															10.01		10.13	
BH103															7.11		8.71	
Max.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.01			
Min.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.40			

ND - Not detected DRY - No water in well NM - Not Monitored (State Reason in comments)

Meteorological & Site Information	
General Ground Condition	
Precipitation	
Wind	
Temperature	
Barometric Pressure	
Pressure Trend	

Monitor Technical Specifications								
Gas Monitor Used:	GA 5000							
Serial No:	G504785							
Monitor Gas Range	CH_4	5>60	CO_2	5<40	O_2	21.2		
Gas Flow Range	0-10 l/hr							
Date of Calibration	19.02.2026							
PID Monitor (If used)								
PID Monitor Serial No.								
Calibration Date.								

Monitoring Period Summary (All Visits)		
	Peak	Steady
Max CH_4	0.0	0.0
Max CO_2	0.0	0.0
Max CO	0.0	0.0
Max H_2S	0.0	0.0
Max O_2	0.0	0.0
Min O_2	0.0	0.0
Flow rate	0.0	0.0

	Start	End
Barometric Pressure		

Operative Details.	M.Tuck

Post Fieldworks Discrete Well Monitoring Site Record

Job No:	C/6144/26/E/9573	Client:	SLC Rail	Visit:	3	Of	4
Site:	LandAdjacentPenistoneStation S36 6HP	Date:	05.08.2026				

Rogers Geotechnical Services Ltd , Offices 1 & 2
Barncliffe Business Park, Shelley, Huddersfield, HD8 8LU

Tel: 01484 604 354
enquiries@rogersgeotech.co.uk

Location ID	Methane (%)		Carbon Dioxide (%)		Carbon Monoxide (ppm)		Hydrogen Sulphide (ppm)		Oxygen (%)		VOCs (ppm)		Flowrate (l/hr)		Water Depth (m)	Well Depth (m)	Installed Depth (m)	Comments
	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady	Peak	Steady	Peak				
BH101															7.62		10.82	
BH102															10.03		10.12	
BH103															7.14		8.38	
Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.03			
Min.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.14			

ND - Not detected DRY - No water in well NM - Not Monitored (State Reason in comments)

Meteorological & Site Information	
General Ground Condition	
Precipitation	
Wind	
Temperature	
Barometric Pressure	
Pressure Trend	

Monitor Technical Specifications								
Gas Monitor Used:	GA 5000							
Serial No:	G504785							
Monitor Gas Range	CH_4	5>60	CO_2	5<40	O_2	21.2		
Gas Flow Range	0-10 l/hr							
Date of Calibration	19.02.2026							
PID Monitor (If used)								
PID Monitor Serial No.								
Calibration Date.								

Monitoring Period Summary (All Visits)		
	Peak	Steady
Max CH_4	0.0	0.0
Max CO_2	0.0	0.0
Max CO	0.0	0.0
Max H_2S	0.0	0.0
Max O_2	0.0	0.0
Min O_2	0.0	0.0
Flow rate	0.0	0.0

	Start	End
Barometric Pressure		

Operative Details.	M.Tuck

Post Fieldworks Discrete Well Monitoring Site Record

Job No:	C/6144/26/E/9573	Client:	SLC Rail	Visit:	4	Of	4
Site:	LandAdjacentPenistoneStation S36 6HP	Date:	12.08.2026				

Rogers Geotechnical Services Ltd , Offices 1 & 2
Barncliffe Business Park, Shelley, Huddersfield, HD8 8LU

Tel: 01484 604 354
enquiries@rogersgeotech.co.uk

Location ID	Methane (%)		Carbon Dioxide (%)		Carbon Monoxide (ppm)		Hydrogen Sulphide (ppm)		Oxygen (%)		VOCs (ppm)		Flowrate (l/hr)		Water Depth (m)	Well Depth (m)	Installed Depth (m)	Comments
	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady	Peak	Steady	Peak				
BH101															9.19		10.76	
BH102															DRY		10.12	
BH103															7.24		8.38	
Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.19			
Min.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.24			

ND - Not detected DRY - No water in well NM - Not Monitored (State Reason in comments)

Meteorological & Site Information	
General Ground Condition	
Precipitation	
Wind	
Temperature	
Barometric Pressure	
Pressure Trend	

Monitor Technical Specifications								
Gas Monitor Used:	GA 5000							
Serial No:	G504785							
Monitor Gas Range	CH_4	5>60	CO_2	5<40	O_2	21.2		
Gas Flow Range	0-10 l/hr							
Date of Calibration	19.02.2026							
PID Monitor (If used)								
PID Monitor Serial No.								
Calibration Date.								

Monitoring Period Summary (All Visits)		
	Peak	Steady
Max CH_4	0.0	0.0
Max CO_2	0.0	0.0
Max CO	0.0	0.0
Max H_2S	0.0	0.0
Max O_2	0.0	0.0
Min O_2	0.0	0.0
Flow rate	0.0	0.0

	Start	End
Barometric Pressure		

Operative Details.	M.Tuck

Appendix 5

Plate Load Testing Results

Rogers Geotechnical Services Ltd
Offices 1 & 2, Barncliffe Business Park, Near Bank, Shelley, Huddersfield HD8 8LU
www.rogersgeotech.co.uk
Tel : 0843 50 666 87 **Fax : 0843 51 599 30**

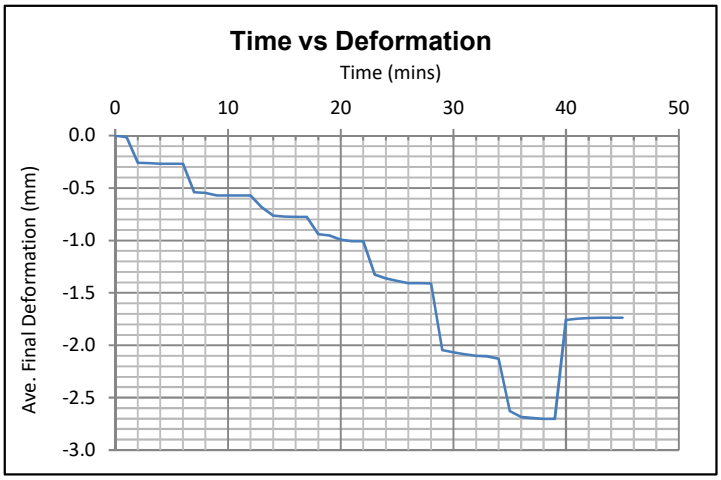
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Penistone Station	SLC Rail
Test Date:	Test Identification:
10/07/2026	TP202

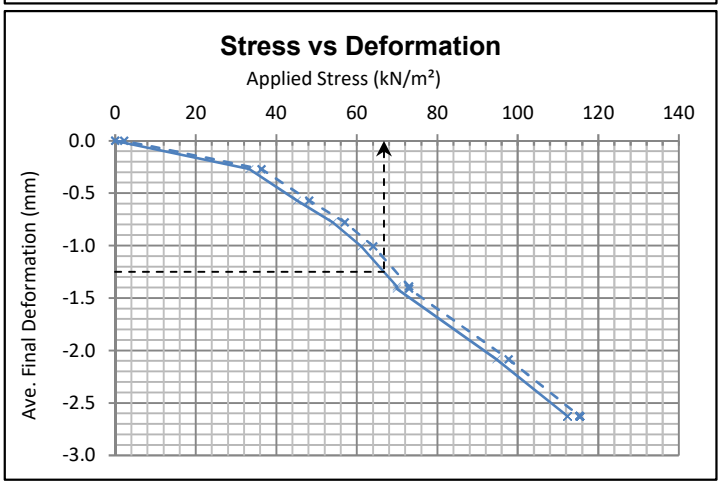
Determination of the vertical deformation and strength characteristics of soil by the plate loading test

BS. 1377 : PART 9 : 1990 : 4.1 - Incremental loading test

Test subject	Light brown mudstone recovered as sandy GRAVEL.		
Test Depth	0.4 m	Material under test	Light brown mudstone recovered as sandy GRAVEL.
Description of reaction	15t 360° Excavator	Moisture Content of material	- %
Plate Diameter	600 mm	In-situ density of material	- kN/m³
Plate Area	0.283 m²	Groundwater level	- m
Mass of test apparatus	64.2 kg	Weather Conditions	Dry and Sunny
Distance between the edge of the loaded plate and the edge of excavation or platform			m

Load Cell (kN)	Applied Load (kN)	Applied Stress (kN/m²)	Average Final Deformation (mm)
0	0.63	2.23	0.00
9.65	10.28	36.36	-0.27
13	13.63	48.21	-0.57
15.5	16.13	57.05	-0.78
17.5	18.13	64.12	-1.01
20	20.63	72.96	-1.39
20	20.63	72.96	-1.41
27	27.63	97.72	-2.08
32	32.63	115.40	-2.63





Original data shown as dashed line. Solid line shows adjusted applied stress which has been considered due to initial unrepresentative movements. Derived CBR value based on applied stress that has been adjusted by 3.01kN/m²

Conversion Factor to a 762mm dia. plate :		0.80
Applied Stress at	1.25 mm Deformation:	67 kN/m²
Modulus of Subgrade Reaction (k_{762}):		43 MN/m²/m
Equivalent CBR by Plate Loading :		7 %
Moisture Content :		- %

Remarks:

Rogers Geotechnical Services Ltd
Offices 1 & 2, Barncliffe Business Park, Near Bank, Shelley, Huddersfield HD8 8LU
www.rogersgeotech.co.uk
Tel : 0843 50 666 87 **Fax : 0843 51 599 30**

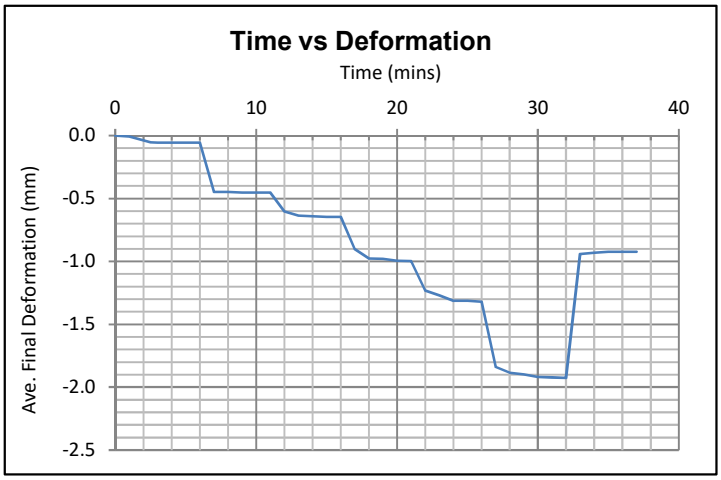
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Penistone Station	SLC Rail
Test Date:	Test Identification:
10/07/2026	TP204

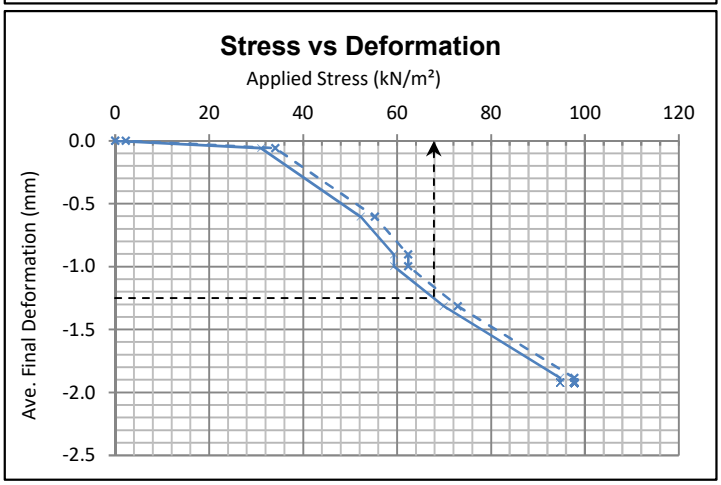
Determination of the vertical deformation and strength characteristics of soil by the plate loading test

BS. 1377 : PART 9 : 1990 : 4.1 - Incremental loading test

Test subject	Light brown mudstone recovered as sandy GRAVEL.		
Test Depth	0.4 m	Material under test	Light brown mudstone recovered as sandy GRAVEL.
Description of reaction	15t 360° Excavator	Moisture Content of material	- %
Plate Diameter	600 mm	In-situ density of material	- kN/m³
Plate Area	0.283 m²	Groundwater level	- m
Mass of test apparatus	64.2 kg	Weather Conditions	Dry and Sunny
Distance between the edge of the loaded plate and the edge of excavation or platform			m

Load Cell (kN)	Applied Load (kN)	Applied Stress (kN/m²)	Average Final Deformation (mm)
0	0.63	2.23	0.00
9	9.63	34.06	-0.06
15	15.63	55.28	-0.60
17	17.63	62.35	-0.90
17	17.63	62.35	-1.00
20	20.63	72.96	-1.31
27	27.63	97.72	-1.88
27	27.63	97.72	-1.92





Original data shown as dashed line. Solid line shows adjusted applied stress which has been considered due to initial unrepresentative movements. Derived CBR value based on applied stress that has been adjusted by 3.01kN/m²

Conversion Factor to a 762mm dia. plate :	0.80	
Applied Stress at 1.25 mm Deformation:	68	kN/m²
Modulus of Subgrade Reaction (k_{762}):	44	MN/m²/m
Equivalent CBR by Plate Loading :	7	%
Moisture Content :	-	%

Remarks:

Rogers Geotechnical Services Ltd
Offices 1 & 2, Barncliffe Business Park, Near Bank, Shelley, Huddersfield HD8 8LU
www.rogersgeotech.co.uk
Tel : 0843 50 666 87 **Fax : 0843 51 599 30**

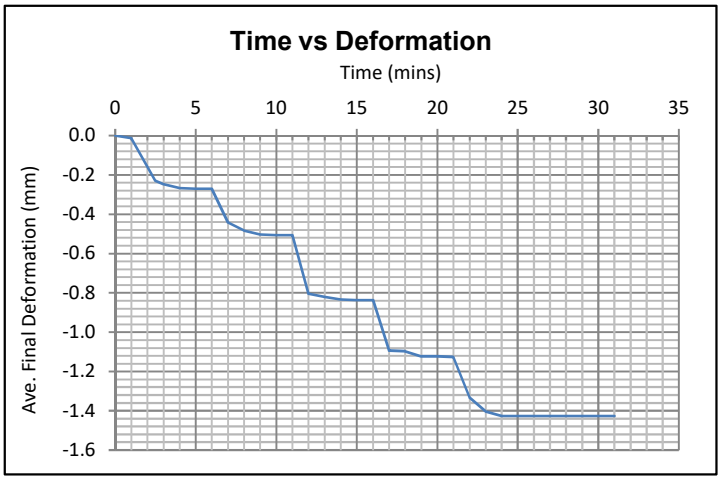
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Site:	Client:
Penistone Station	SLC Rail
Test Date:	Test Identification:
10/07/2026	TP205

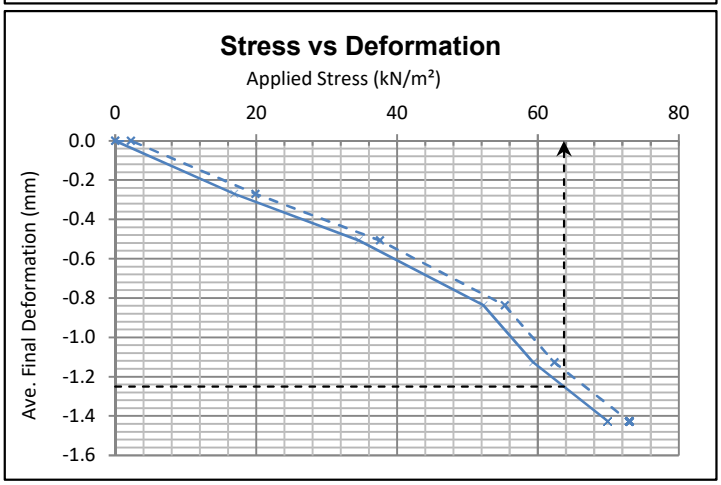
Determination of the vertical deformation and strength characteristics of soil by the plate loading test

BS. 1377 : PART 9 : 1990 : 4.1 - Incremental loading test

Test subject	Light brown mudstone recovered as sandy GRAVEL.		
Test Depth	0.4 m	Material under test	Light brown mudstone recovered as sandy GRAVEL.
Description of reaction	15t 360° Excavator	Moisture Content of material	- %
Plate Diameter	600 mm	In-situ density of material	- kN/m³
Plate Area	0.283 m²	Groundwater level	- m
Mass of test apparatus	64.2 kg	Weather Conditions	Dry and Sunny
Distance between the edge of the loaded plate and the edge of excavation or platform			m

Load Cell (kN)	Applied Load (kN)	Applied Stress (kN/m²)	Average Final Deformation (mm)
0	0.63	2.23	0.00
5	5.63	19.91	-0.27
10	10.63	37.60	-0.51
15	15.63	55.28	-0.84
17	17.63	62.35	-1.13
20	20.63	72.96	-1.43





Original data shown as dashed line. Solid line shows adjusted applied stress which has been considered due to initial unrepresentative movements. Derived CBR value based on applied stress that has been adjusted by 3.01kN/m²

Conversion Factor to a 762mm dia. plate :	0.80	
Applied Stress at 1.25 mm Deformation:	64	kN/m²
Modulus of Subgrade Reaction (k_{762}):	41	MN/m²/m
Equivalent CBR by Plate Loading :	6	%
Moisture Content :	-	%

Remarks:

Rogers Geotechnical Services Ltd
Offices 1 & 2, Barncliffe Business Park, Near Bank, Shelley, Huddersfield HD8 8LU
www.rogersgeotech.co.uk
Tel : 0843 50 666 87 **Fax : 0843 51 599 30**

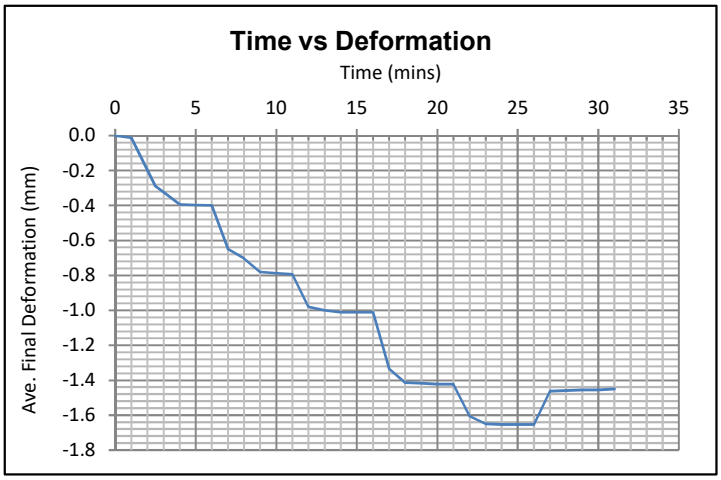
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C6144/26/E/9573	4
Site:	Client:
Penistone Station	SLC Rail
Test Date:	Test Identification:
10/07/2026	TP208

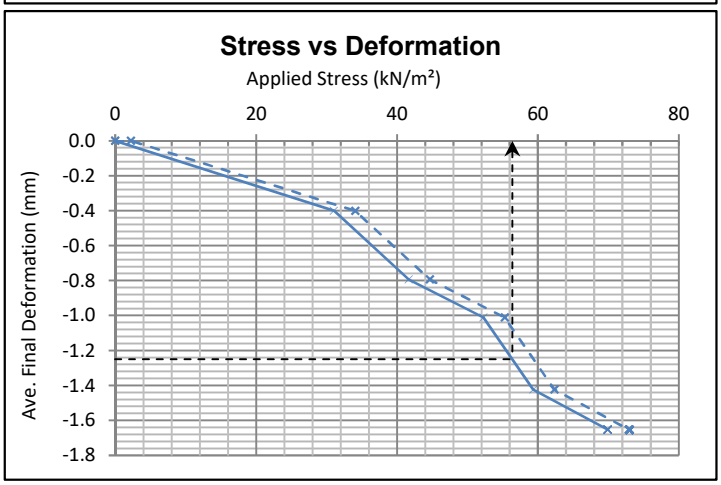
Determination of the vertical deformation and strength characteristics of soil by the plate loading test

BS. 1377 : PART 9 : 1990 : 4.1 - Incremental loading test

Test subject	Light brown mudstone recovered as sandy GRAVEL.		
Test Depth	0.4 m	Material under test	Light brown mudstone recovered as sandy GRAVEL.
Description of reaction	15t 360° Excavator	Moisture Content of material	- %
Plate Diameter	600 mm	In-situ density of material	- kN/m³
Plate Area	0.283 m²	Groundwater level	- m
Mass of test apparatus	64.2 kg	Weather Conditions	Dry and Sunny
Distance between the edge of the loaded plate and the edge of excavation or platform			m

Load Cell (kN)	Applied Load (kN)	Applied Stress (kN/m²)	Average Final Deformation (mm)
0	0.63	2.23	0.00
9	9.63	34.06	-0.40
12	12.63	44.67	-0.79
15	15.63	55.28	-1.01
17	17.63	62.35	-1.42
20	20.63	72.96	-1.65





Original data shown as dashed line. Solid line shows adjusted applied stress which has been considered due to initial unrepresentative movements. Derived CBR value based on applied stress that has been adjusted by 3.01kN/m²

Conversion Factor to a 762mm dia. plate :	0.80	
Applied Stress at 1.25 mm Deformation:	56	kN/m²
Modulus of Subgrade Reaction (k_{762}):	36	MN/m²/m
Equivalent CBR by Plate Loading :	5	%
Moisture Content :	-	%

Remarks:

Appendix 6

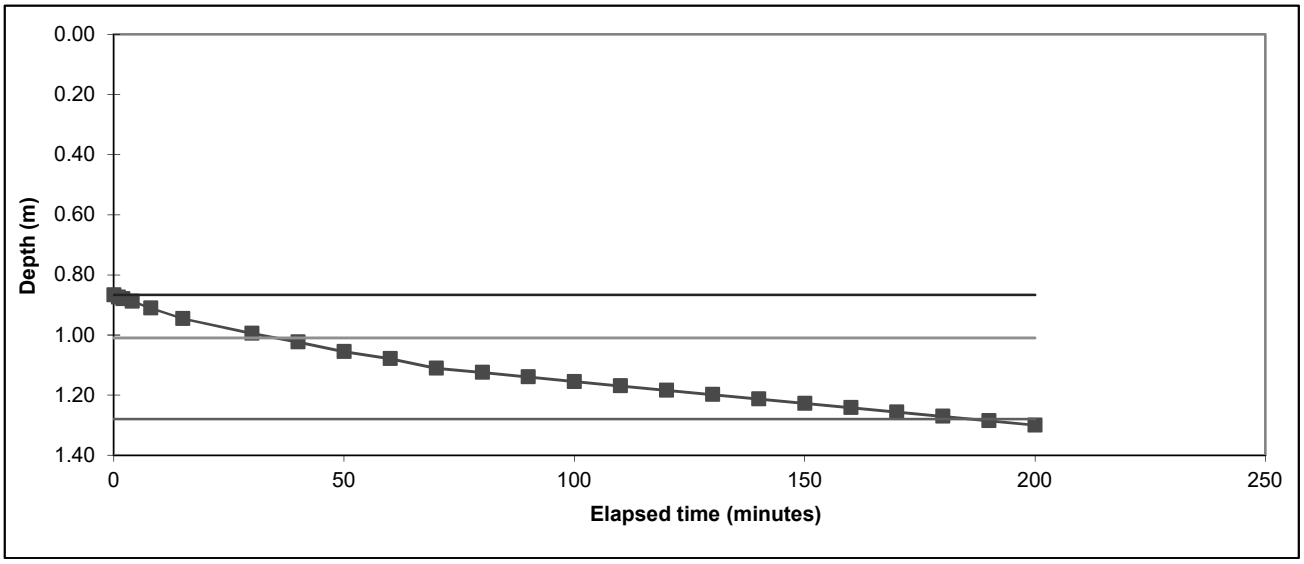
Soakaway Results

Rogers Geotechnical Services Ltd

Soakaway Test

Trial Pit No:	TP201	Test No:	1	Date:	10/07/2026
Length (m):	2.100		Datum Height:	0.00	m agl
Width (m):	0.70		Granular infill:	None	
Depth (m):	1.42		Porosity of infill:	1	(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.867	110	1.170
1	0.875	120	1.184
2	0.880	130	1.198
4	0.888	140	1.213
8	0.911	150	1.228
15	0.946	160	1.242
30	0.995	170	1.257
40	1.024	180	1.271
50	1.056	190	1.286
60	1.079	200	1.300
70	1.111		
80	1.125		
90	1.140		
100	1.156		



Start water depth for analysis (mbgl):	0.87		
75% effective depth (mbgl):	1.01	Elapsed time (mins):	35.2
50% effective depth (mbgl):	1.14		
25% effective depth (mbgl):	1.28	Elapsed time (mins):	186.0
Base of soakage zone (mbgl):	1.42		

Volume outflow between 75% and 25% effective depth (m^3):	0.397
Mean surface area of outflow (m^2): (side area at 50% effective depth + base area)	3.04
Time for outflow between 75% and 25% effective depth (mins):	150.8

Soil infiltration rate (m/s):	**1.4E-5**

Remarks Results processed following BRE 365 (2007).
Unable to run test at specified depth due to refusal on mudstone.

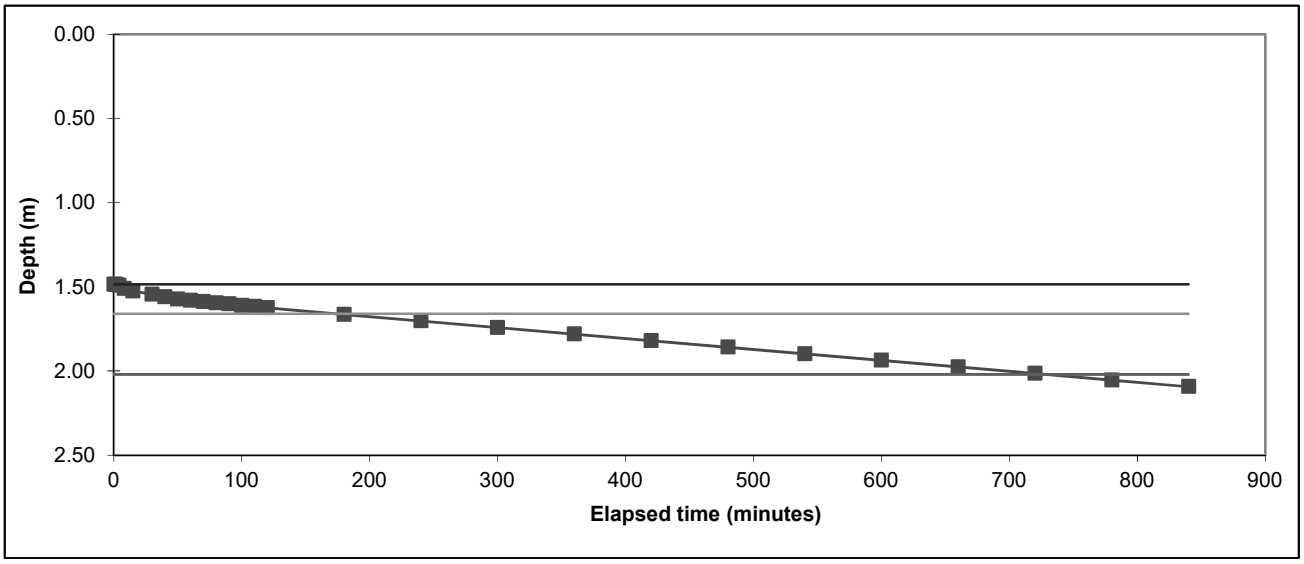
Client:	Sable Leigh Consultancy Ltd	**Job No:**
Site:	Land adjacent to Penistone Station	C6144/26/E/9573

Rogers Geotechnical Services Ltd

Soakaway Test

Trial Pit No:	TP209	Test No:	1	Date:	10/07/2026
Length (m):	2.900		Datum Height:	0.00	m agl
Width (m):	0.80		Granular infill:	None	
Depth (m):	2.20		Porosity of infill:	1	(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	1.485	110	1.618
1	1.486	120	1.625
2	1.488	180	1.664
4	1.492	240	1.703
8	1.511	300	1.742
15	1.525	360	1.781
30	1.545	420	1.820
40	1.560	480	1.859
50	1.574	540	1.898
60	1.580	600	1.937
70	1.588	660	1.976
80	1.595	720	2.015
90	1.602	780	2.054
100	1.611	840	2.093



Start water depth for analysis (mbgl):	1.49		
75% effective depth (mbgl):	1.66	Elapsed time (mins):	173.8
50% effective depth (mbgl):	1.84		
25% effective depth (mbgl):	2.02	Elapsed time (mins):	727.7
Base of soakage zone (mbgl):	2.20		

Volume outflow between 75% and 25% effective depth (m^3):	0.835
Mean surface area of outflow (m^2): (side area at 50% effective depth + base area)	4.98
Time for outflow between 75% and 25% effective depth (mins):	553.9

Soil infiltration rate (m/s):	**5.0E-6**

Remarks Results processed following BRE 365 (2007).
Unable to run test at specified depth due to refusal on mudstone.

Client:	Sable Leigh Consultancy Ltd	**Job No:**
Site:	Land adjacent to Penistone Station	C6144/26/E/9573

Appendix 7

Laboratory Testing

Summary of Classification Test Results

Project No.	Project Name
C6144/26/E/9573	Land adjacent to Penistone Station

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m³	Density dry Mg/m³	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m³	Date Tested	Remarks
TP201	3	1.00	1.50	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			9.0						28-Jul	
TP202	3	0.75	1.25	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			7.4						28-Jul	
TP203	3	1.25	1.35	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			8.6						28-Jul	
TP204	3	0.50	1.00	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			6.5						28-Jul	
TP205	3	1.00	1.60	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			8.7						28-Jul	
TP207	3	1.40	1.50	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			9.9						28-Jul	
TP208	3	0.60	1.00	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			7.8						28-Jul	
TP209	3	1.00	1.50	B	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.			7.7						28-Jul	

All Water Content Tests perfromed to BS EN ISO 17892-1:2014+A1:2022 Unless specified Otherwise
All Index Property testing preformed to BS EN ISO 17892-12 2018+A2:2022 Unless Specified Otherwise
All Liquid Limit Tests performed on a 80g/30 Degree Cone unless specified otherwise

Key

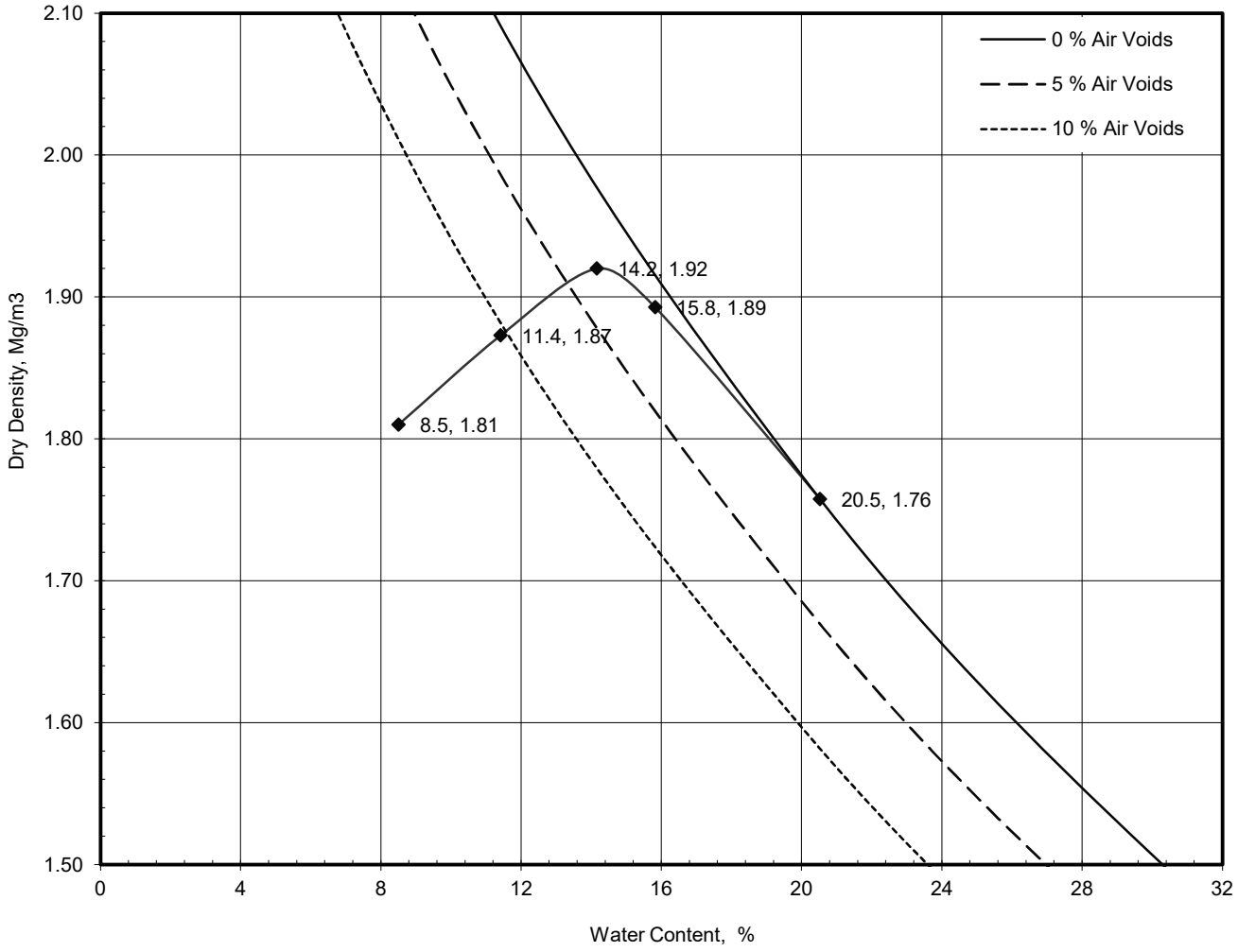
Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table / sheet
06/08/2026	Harry	1 / 1

	Dry Density / Water Content Relationship Light Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP201
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	1.00 m
Specimen Ref.	3	Specimen Depth	1	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer				Keylab ID	RGS_2026072853
					Compaction Test Reference/No.	1

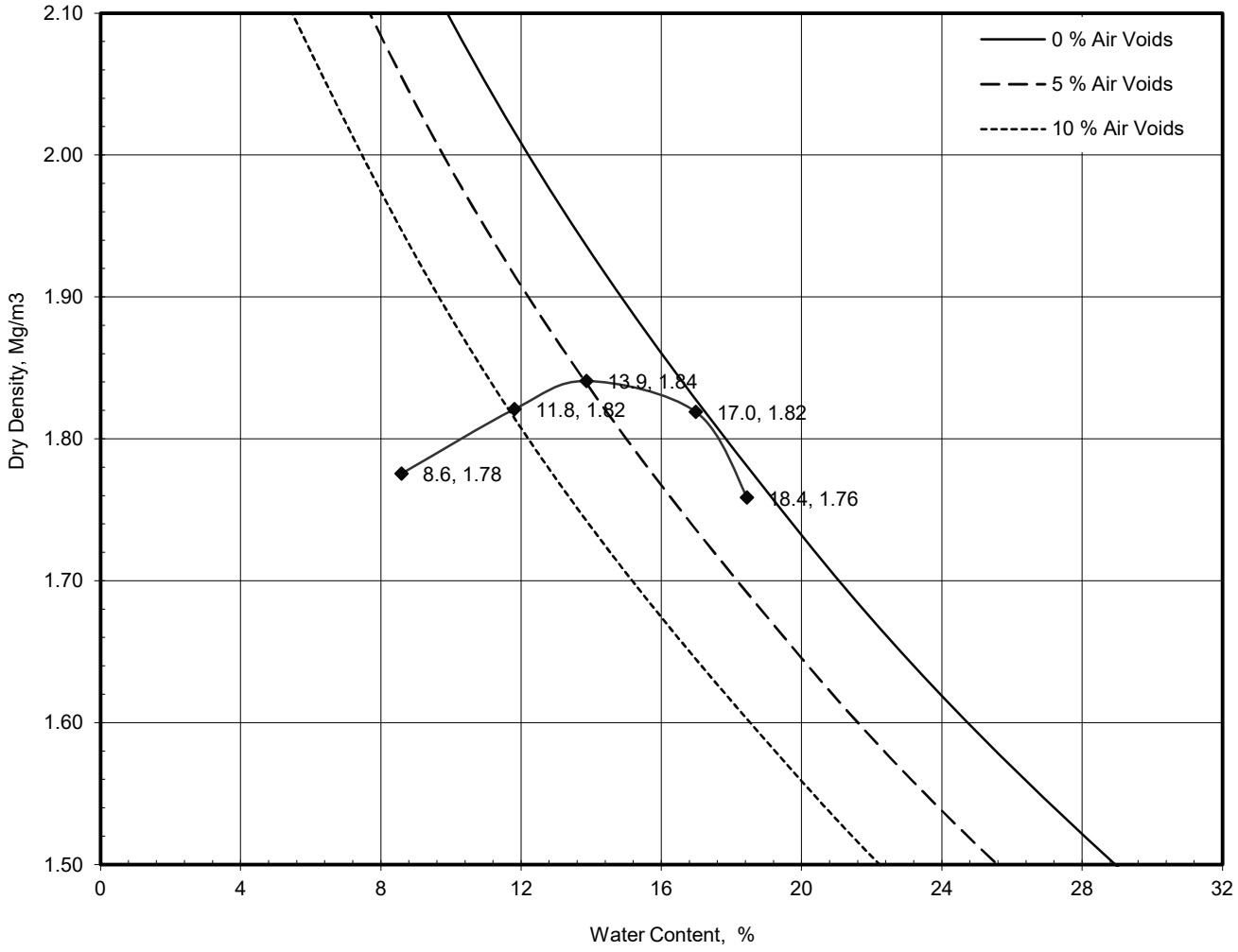


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	31
Material Retained on 20.0 mm Sieve	%	17
Particle Density - Assumed	Mg/m³	2.75
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.92**

Optimum Water Content	%	**14**

Operator	Checked	Approved	Remarks	Fig 2
EC	Harry	Harry		Sheet 1 of 5

	Dry Density / Water Content Relationship Light Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP203
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	1.25 m
Specimen Ref.	3	Specimen Depth	1.25	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer				Keylab ID	RGS_2026072855
					Compaction Test Reference/No.	2

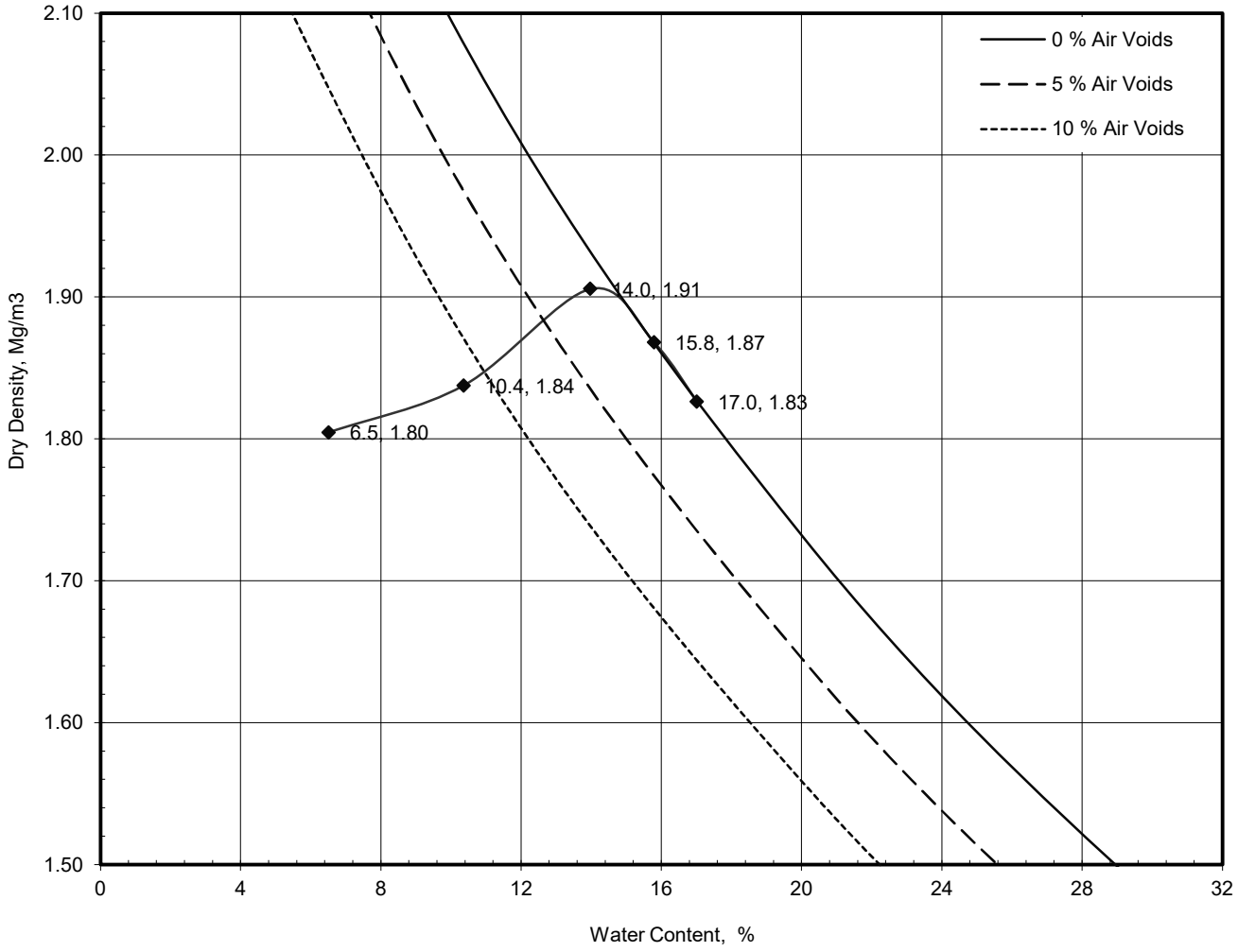


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	24
Material Retained on 20.0 mm Sieve	%	20
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.84**

Optimum Water Content	%	**14**

Operator	Checked	Approved	Remarks	Fig 2
Harry	Harry	Harry		Sheet 2 of 5

	Dry Density / Water Content Relationship Light Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP204
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	0.50 m
Specimen Ref.	3	Specimen Depth	0.5	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer				Keylab ID	RGS_2026072856
					Compaction Test Reference/No.	3

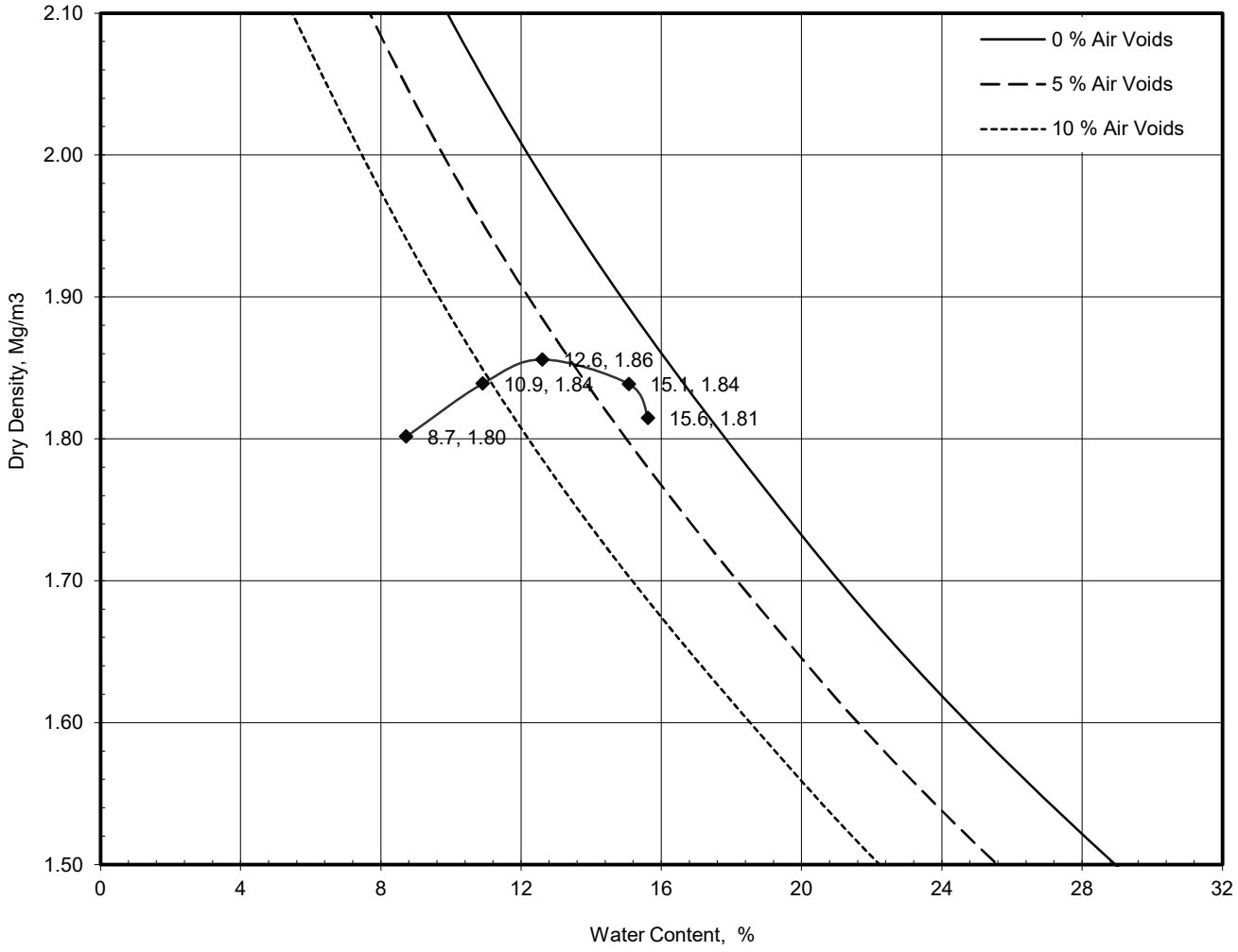


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	28
Material Retained on 20.0 mm Sieve	%	20
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.91**

Optimum Water Content	%	**14**

Operator	Checked	Approved	Remarks	Fig 2
EC	Harry	Harry		Sheet 3 of 5

	Dry Density / Water Content Relationship Light Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP205
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	1.00 m
Specimen Ref.	3	Specimen Depth	1	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer				Keylab ID	RGS_2026072857
					Compaction Test Reference/No.	4

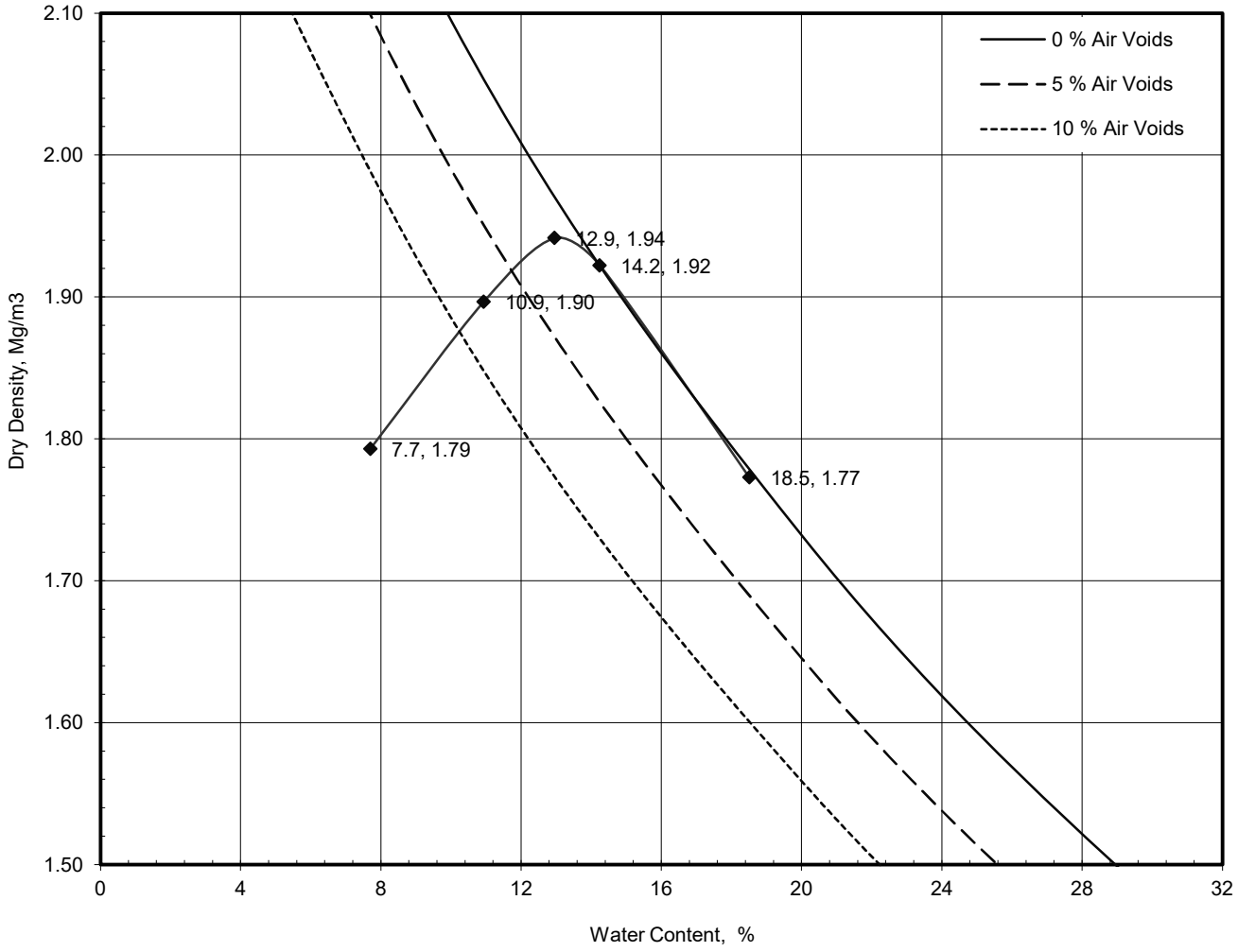


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	20
Material Retained on 20.0 mm Sieve	%	11
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.86**

Optimum Water Content	%	**13**

Operator	Checked	Approved	Remarks	Fig 2
MH	Harry	Harry		Sheet 4 of 5

	Dry Density / Water Content Relationship Light Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP209
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	1.00 m
Specimen Ref.	3	Specimen Depth	1	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer				Keylab ID	RGS_2026072860
					Compaction Test Reference/No.	5

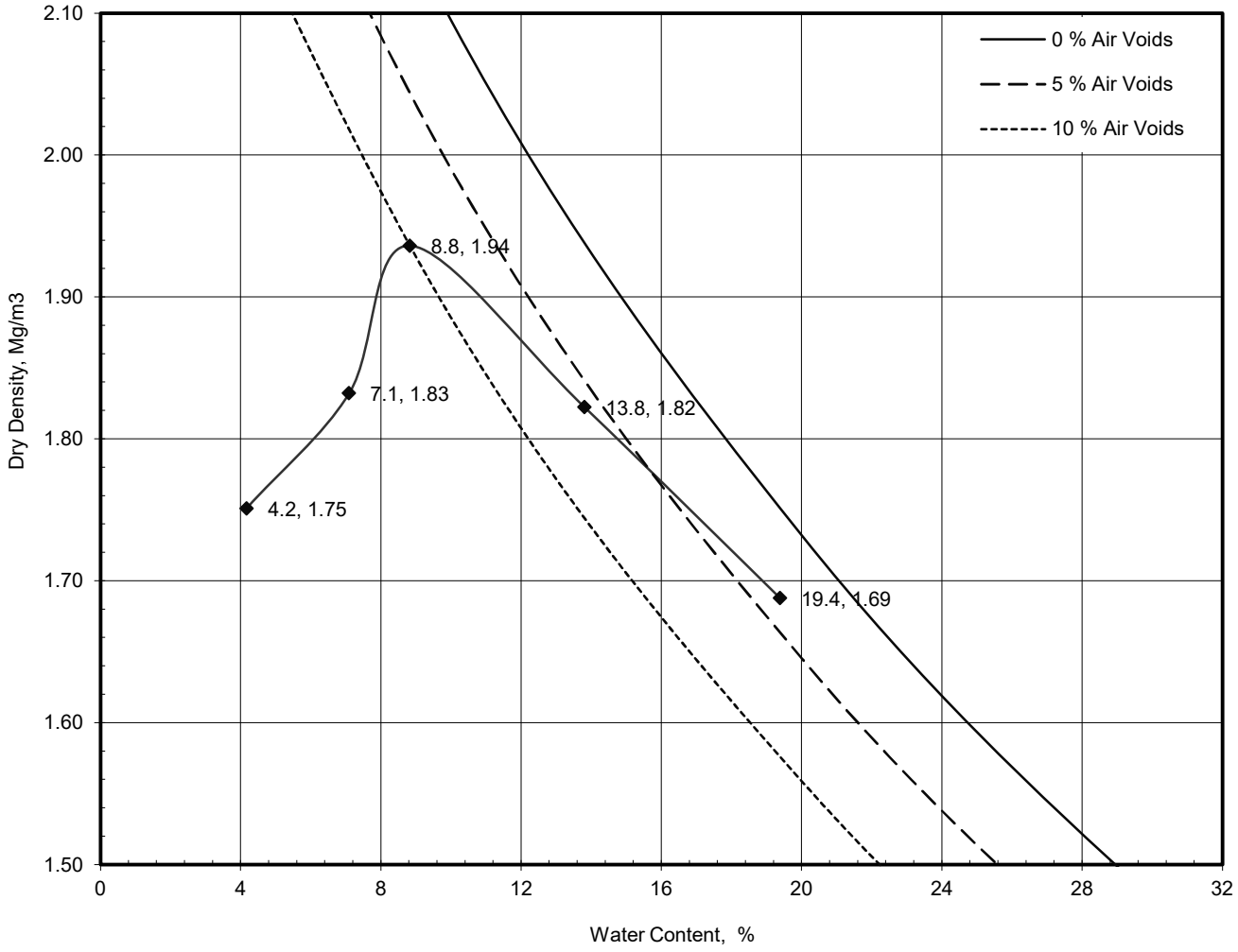


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	14
Material Retained on 20.0 mm Sieve	%	24
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.94**

Optimum Water Content	%	**13**

Operator	Checked	Approved	Remarks	Fig 2
EC	Harry	Harry		Sheet 5 of 5

	Dry Density / Water Content Relationship Heavy Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP202
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	0.75 m
Specimen Ref.	3	Specimen Depth	0.75	m	Sample Type	B
Test Method	BS1377:Part 2:2022				Keylab ID	RGS_2026072854
					Compaction Test Reference/No.	1

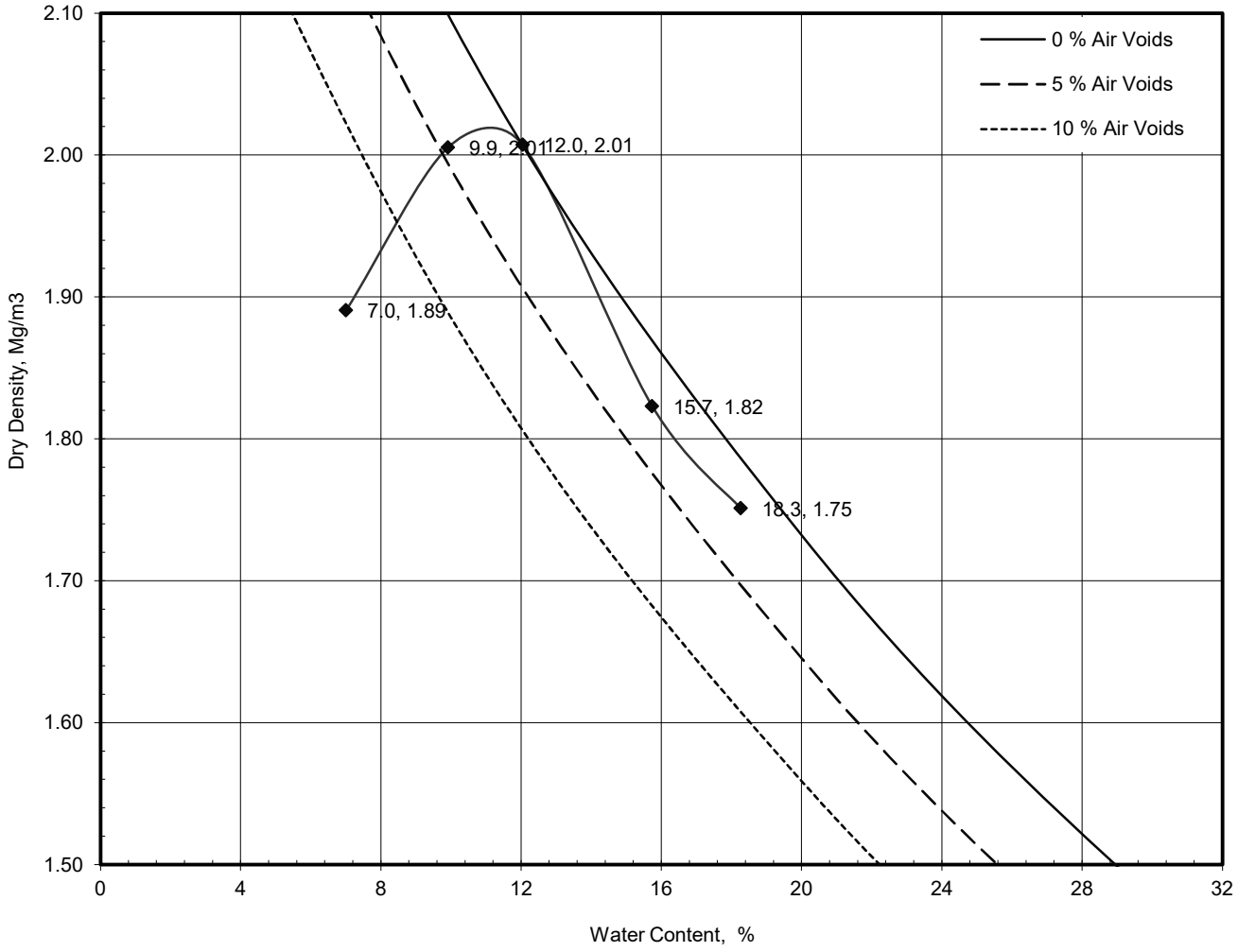


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	41
Material Retained on 20.0 mm Sieve	%	17
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**1.94**

Optimum Water Content	%	**8.8**

Operator	Checked	Approved	Remarks	Fig 3
Harry	Harry	Harry		Sheet 1 of 3

	Dry Density / Water Content Relationship Heavy Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP207
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	1.40 m
Specimen Ref.	3	Specimen Depth	1.4	m	Sample Type	B
Test Method	BS1377:Part 2:2022				Keylab ID	RGS_2026072858
					Compaction Test Reference/No.	2

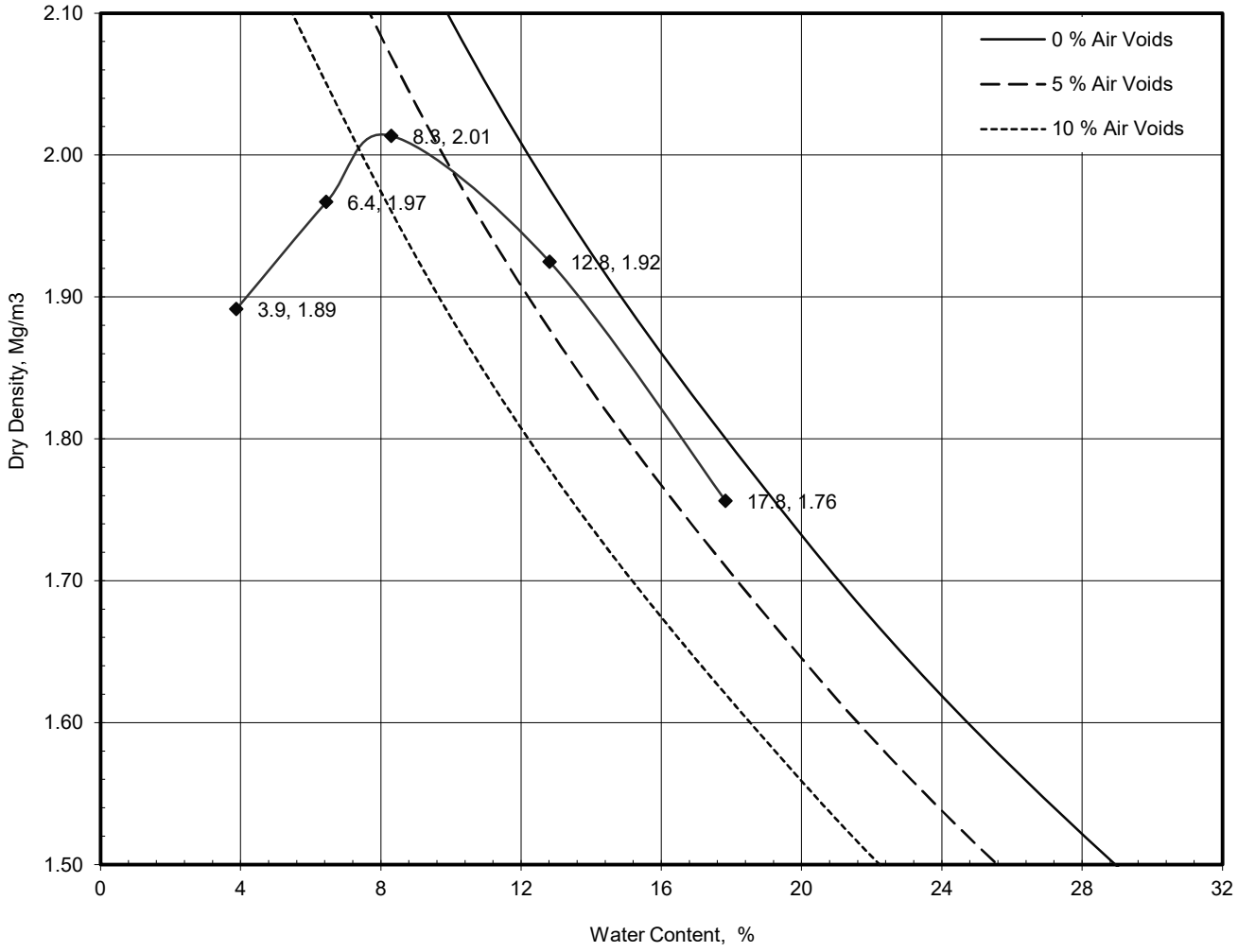


Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	17
Material Retained on 20.0 mm Sieve	%	21
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**2.02**

Optimum Water Content	%	**11**

Operator	Checked	Approved	Remarks	Fig 3
EC	Harry	Harry		Sheet 2 of 3

	Dry Density / Water Content Relationship Heavy Compaction				Job Ref	C6144/26/E/9573
					Borehole / Pit No	TP208
Site Name	**Land adjacent to Penistone Station**				Sample No	3
Soil Description	Extremely weak, greyish brown MUDSTONE, recovered as silty, sandy, gravelly cobbles.				Depth	0.60 m
Specimen Ref.	3	Specimen Depth	0.6	m	Sample Type	B
Test Method	BS1377:Part 2:2022				Keylab ID	RGS_2026072859
					Compaction Test Reference/No.	3



Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	17
Material Retained on 20.0 mm Sieve	%	22
Particle Density - Assumed	Mg/m³	2.65
Grading Zone		X
Maximum Dry Density	Mg/m³	**2.01**

Optimum Water Content	%	**8.3**

Operator	Checked	Approved	Remarks	Fig 3
EC	Harry	Harry		Sheet 3 of 3

4041

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/WATER CONTENT RELATIONSHIP METHOD USING VIBRATING HAMMER

Tested in Accordance with: BS 1377-2:2022, Cl. 11.7

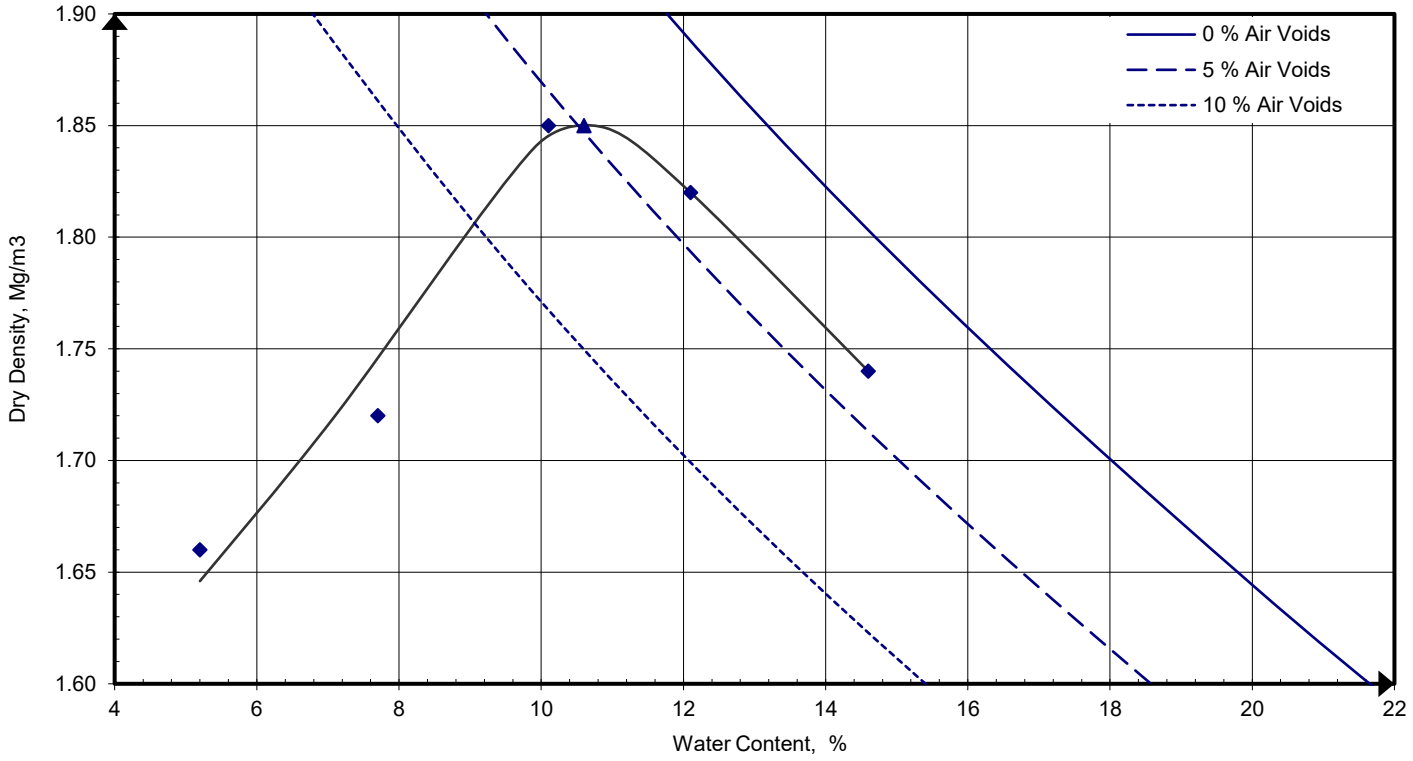
Normec i2 Analytical

Client:	Rogers Geotechnical Services Ltd	Client Reference:	C6144/26/E/9573
Client Address:	Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU	Job Number:	26-041913-1
		Date Sampled:	Not Given
		Date Received:	04/08/2026
Contact:	Harry Letch	Date Tested:	18/08/2026
Site Address:	Land Adjacent to Penistone Station	Sampled By:	Not Given

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

Test Results:

Laboratory Reference:	1002790	Depth Top [m]:	0.75
Hole No.:	TP202	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Dark brown sandy CLAY with siltstones		
Sample Preparation:	Sample was quartered and broken down by hand. Material used was natural.		



Compaction Point No.		1	2	3	4	5
Water Content	%	5.2	7.7	10	12	15
Dry Density	Mg/m³	1.66	1.72	1.85	1.82	1.74

Grading Zone		3
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	29
Particle Density - Assumed	Mg/m³	2.45
As received Water Content	%	3.8
Maximum Dry Density	Mg/m³	**1.85**

Optimum Water Content	%	**11**

Remarks:

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

Signed: Monika Siewior

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/08/2026

GF 603.2

4041

TEST CERTIFICATE

DETERMINATION OF DRY DENSITY/WATER CONTENT RELATIONSHIP METHOD USING VIBRATING HAMMER

Tested in Accordance with: BS 1377-2:2022, Cl. 11.7

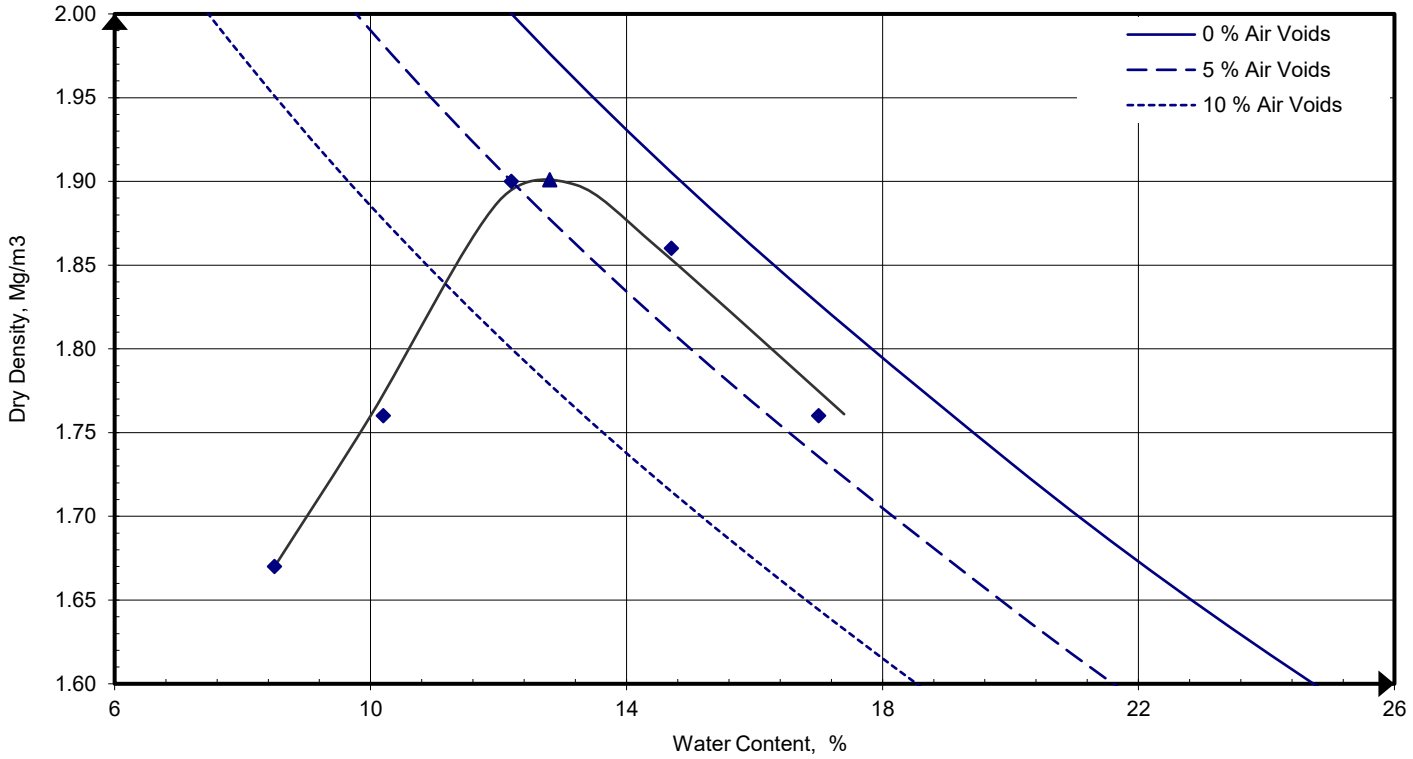
Normec i2 Analytical

Client:	Rogers Geotechnical Services Ltd	Client Reference:	C6144/26/E/9573
Client Address:	Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU	Job Number:	26-041913-1
		Date Sampled:	Not Given
		Date Received:	04/08/2026
Contact:	Harry Letch	Date Tested:	18/08/2026
Site Address:	Land Adjacent to Penistone Station	Sampled By:	Not Given

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

Test Results:

Laboratory Reference:	1002791	Depth Top [m]:	1.25
Hole No.:	TP203	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Dark brown sandy CLAY with siltstones		
Sample Preparation:	Sample was quartered and broken down by hand. Material used was natural.		



Compaction Point No.		1	2	3	4	5
Water Content	%	8.5	10	12	15	17
Dry Density	Mg/m³	1.67	1.76	1.90	1.86	1.76

Grading Zone		X
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	23
Material Retained on 20.0 mm Sieve	%	42
Particle Density - Assumed	Mg/m³	2.65
As received Water Content	%	8.5
Maximum Dry Density	Mg/m³	**1.90**

Optimum Water Content	%	**13**

Remarks: Zone X - test carried out with clients consent.

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

Signed: Monika Siewior

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/08/2026

GF 603.2

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

SUMMARY REPORT

METHOD FOR DETERMINATION OF THE WATER CONTENT OF A ROCK SAMPLE

Tested in Accordance with: ISRM:2007, page 87

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top m	Depth Base m	Type			%											
1000734	BH101	Not Given	11.26	11.35	C	Greyish brown SILTSTONE		3.9											

Note:

Comments:

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

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/08/2026

GF 480.4

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

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

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN	mm	Is MPa	Is(50) MPa
1000731	BH101	Not Given	5.50	5.60	C	Greyish brown MUDSTONE	WC = 8.7%	1	A	U	YES	-	86.1	79.0	63.0	0.6	83.1	0.08	0.10
1000734	BH101	Not Given	11.26	11.35	C	Greyish brown SILTSTONE	WC = 3.9%	1	D	U	YES	71.9	86.0	86.0	81.0	1.3	83.5	0.18	0.23
1000735	BH101	Not Given	11.45	11.50	C	Grey SILTSTONE	WC = 4.8%	1	D	U	YES	57.8	85.8	86.0	82.0	0.9	83.9	0.12	0.15
1000736	BH101	Not Given	11.50	11.70	C	Light brown SILTSTONE	WC = 4.2%	1	D	U	YES	74.9	86.7	87.0	84.0	2.1	85.4	0.29	0.37
1000737	BH101	Not Given	11.70	11.75	C	Light brown SILTSTONE	WC = 3.4%	1	A	U	YES	-	86.0	69.0	46.0	3.8	71.0	0.74	0.87
1000738	BH101	Not Given	12.60	12.75	C	Light brown SILTSTONE	WC = 3.2%	1	D	U	YES	70.8	86.0	86.0	83.0	0.8	84.5	0.11	0.13
1000739	BH101	Not Given	12.75	12.80	C	Greyish brown SILTSTONE	WC = 5.1%	1	A	U	YES	-	87.0	60.0	6.0	1.5	25.8	2.26	1.68
1000740	BH101	Not Given	13.95	14.40	C	Light brown SILTSTONE	WC = 2.1%	1	D	U	YES	53.2	86.1	86.0	81.0	16.2	83.5	2.32	2.92
1000741	BH101	Not Given	14.40	14.50	C	Light brown SILTSTONE	WC = 1.9%	1	A	U	YES	-	86.1	68.0	60.0	7.8	81.1	1.18	1.46
1000742	BH101	Not Given	14.50	14.70	C	Greyish brown SILTSTONE	WC = 2.8%	1	D	U	YES	57.0	87.2	87.0	80.0	2.3	83.5	0.33	0.42

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random; Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P; Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2026 - 10/03/2027

Comments:

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 19/08/2026 **GF 134.17**

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

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

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN	mm	Is MPa	Is(50) MPa
1000743	BH101	Not Given	18.10	18.26	C	Greyish brown SILTSTONE	WC = 4.6%	1	I	U	YES	43.1	78.6	63.0	52.0	2.0	72.1	0.38	0.45
1000744	BH101	Not Given	25.20	25.35	C	Grey MUDSTONE	WC = 2.8%	1	D	U	YES	57.0	85.9	86.0	79.0	2.7	82.4	0.39	0.49
1000745	BH101	Not Given	25.55	25.70	C	Grey MUDSTONE	WC = 2.4%	1	D	U	YES	47.5	85.5	85.0	82.0	2.4	83.8	0.34	0.43
1000746	BH101	Not Given	27.45	27.65	C	Grey MUDSTONE	WC = 3.3%	1	I	U	YES	54.2	86.4	72.0	67.0	2.8	85.8	0.37	0.48
1000747	BH101	Not Given	28.00	28.20	C	Grey MUDSTONE	WC = 3.2%	1	A	U	YES	-	85.8	63.0	57.0	3.5	78.9	0.56	0.69
1000748	BH101	Not Given	28.50	28.85	C	Grey MUDSTONE	WC = 2.1%	1	D	U	YES	61.9	86.0	86.0	80.0	4.3	82.9	0.62	0.78
1000749	BH101	Not Given	28.85	29.10	C	Grey MUDSTONE	WC = 2.7%	1	D	U	YES	80.4	86.1	86.0	83.0	3.4	84.5	0.47	0.59
1000750	BH102	Not Given	1.25	1.35	C	Brown SILTSTONE	WC = 4.7%	1	D	U	YES	47.2	86.1	86.0	83.0	8.7	84.5	1.21	1.53
1000751	BH102	Not Given	1.40	1.50	C	Brown SILTSTONE	WC = 4.4%	1	D	U	YES	65.0	86.0	86.0	83.0	2.7	84.5	0.38	0.48
1000752	BH102	Not Given	1.50	1.57	C	Brown SILTSTONE	WC = 4.6%	1	A	U	YES	-	86.1	83.0	66.0	14.9	85.1	2.05	2.61

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random; Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P; Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2026 - 10/03/2027

Comments:

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 19/08/2026 **GF 134.17**

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

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

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)
			m	m								mm	mm	mm	mm	kN	mm	MPa	MPa
1000753	BH102	Not Given	1.57	1.76	C	Brown SILTSTONE	WC = 5.1%	1	A	U	YES	-	86.5	78.0	56.0	17.7	78.6	2.86	3.51
1000754	BH102	Not Given	6.73	6.84	C	Brown SILTSTONE	WC = 4.0%	1	I	U	YES	47.3	85.5	80.0	30.0	6.8	57.2	2.07	2.19
1000755	BH102	Not Given	8.20	8.33	C	Brown SILTSTONE	WC = 4.6%	1	A	U	YES	-	85.7	45.0	36.0	3.4	62.7	0.87	0.96
1000756	BH102	Not Given	10.15	10.21	C	Brown SILTSTONE	WC = 3.2%	1	I	U	YES	43.2	82.2	53.0	51.0	4.0	73.1	0.75	0.89
1000757	BH102	Not Given	10.32	10.40	C	Brown SILTSTONE	WC = 3.2%	1	A	U	YES	-	85.5	69.0	62.0	6.4	82.1	0.95	1.19
1000758	BH102	Not Given	10.40	10.49	C	Brown SILTSTONE	WC = 3.2%	1	D	U	YES	47.0	85.5	86.0	83.0	0.4	84.3	0.05	0.06
1000759	BH102	Not Given	10.49	10.55	C	Brown SILTSTONE	WC = 3.5%	1	A	U	YES	-	85.8	53.0	43.0	7.2	68.5	1.53	1.77
1000760	BH102	Not Given	10.64	10.72	C	Brown SILTSTONE	WC = 4.0%	1	A	U	YES	-	85.5	37.0	30.0	3.8	57.1	1.15	1.22
1000761	BH102	Not Given	10.82	10.87	C	Brown SILTSTONE	WC = 3.4%	1	A	U	YES	-	85.8	30.0	27.0	2.4	54.3	0.80	0.83
1000762	BH103	Not Given	3.10	3.25	C	Brown SILTSTONE	WC = 3.5%	1	A	U	YES	-	85.6	79.0	41.0	4.7	66.8	1.04	1.19

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random; Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P; Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2026 - 10/03/2027

Comments:

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 19/08/2026 **GF 134.17**

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

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

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN	mm	Is MPa	Is(50) MPa
1000763	BH103	Not Given	3.65	3.70	C	Brown SILTSTONE	WC = 6.1%	1	A	U	YES	-	85.7	31.0	24.0	0.9	51.2	0.34	0.35
1000764	BH103	Not Given	4.50	4.55	C	Brown SILTSTONE	WC = 6.5%	1	A	U	YES	-	84.6	43.0	34.0	1.5	60.5	0.40	0.43
1000765	BH103	Not Given	4.55	4.63	C	Brown SILTSTONE	WC = 4.5%	1	A	U	YES	-	86.7	56.0	51.0	1.6	75.0	0.28	0.33
1000766	BH103	Not Given	4.73	4.89	C	Brown SILTSTONE	WC = 6.1%	1	A	U	YES	-	85.6	42.0	39.0	1.6	65.2	0.36	0.41
1000767	BH103	Not Given	5.23	5.35	C	Brown SILTSTONE	WC = 7.5%	1	I	U	YES	44.1	79.1	70.0	47.0	1.0	68.8	0.20	0.23
1000768	BH103	Not Given	7.63	7.70	C	Grey MUDSTONE	WC = 5.2%	1	A	U	YES	-	84.3	45.0	34.0	1.5	60.4	0.41	0.45
1000769	BH103	Not Given	8.53	8.60	C	Grey MUDSTONE	WC = 7.4%	1	A	U	YES	-	87.3	60.0	55.0	0.4	78.2	0.06	0.07
1000770	BH103	Not Given	8.60	8.70	C	Grey MUDSTONE	WC = 8.0%	1	A	U	YES	-	84.5	73.0	44.0	0.5	68.8	0.10	0.11
1000771	BH103	Not Given	8.80	8.92	C	Grey MUDSTONE	WC = 4.6%	1	I	U	YES	85.1	82.7	72.0	67.0	1.1	84.0	0.16	0.20
1000772	BH103	Not Given	10.45	10.50	C	Grey MUDSTONE	WC = 4.3%	1	A	U	YES	-	86.3	53.0	45.0	0.4	70.3	0.07	0.08

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random; Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P; Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2026 - 10/03/2027

Comments:

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 19/08/2026 **GF 134.17**

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

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

Client Reference: C6144-26-E-9573

Job Number: 26-041499-1

Date Sampled: 24/07/2026

Date Received: 29/07/2026

Date Tested: 18/08/2026

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN	mm	Is MPa	Is(50) MPa
1000773	BH103	Not Given	11.35	11.44	C	Grey MUDSTONE	WC = 8.0%	1	A	U	YES	-	80.1	78.0	46.0	1.2	68.5	0.26	0.29
1000774	BH103	Not Given	11.50	11.55	C	Grey MUDSTONE	WC = 5.8%	1	A	U	YES	-	81.7	49.0	40.0	1.8	64.5	0.42	0.47
1000775	BH103	Not Given	11.85	11.90	C	Brown SILTSTONE	WC = 5.3%	1	I	U	YES	47.0	85.9	70.0	67.0	1.9	85.6	0.26	0.33

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random; Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P; Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2026 - 10/03/2027

Comments:

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Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/08/2026 **GF 134.17**

SUMMARY REPORT

DETERMINATION OF UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Tested in Accordance with: ISRM, 2007, p153, part 1

4041

Client: Rogers Geotechnical Services Ltd

Client Address: Offices 1&2 Barncliffe Business Pk, Near Bank, Shelley, Huddersfield, West Yorkshire, HD8 8LU

Contact: Harry Letch

Site Address: Land Adjacent to Penistone Station

Client Reference: C6144-26-E-9573
Job Number: 26-041499-1
Date Sampled: 24/07/2026
Date Received: 29/07/2026
Date Tested: 18/08/2026
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Specimen Dimensions (2)				Bulk density (2)	Water Content (1)	Uniaxial Compression (3)			
		Reference	Depth Top m	Depth Base m	Type			Diameter mm	Length mm	H/D	Orientation of sample	Mg/m3	%	Condition	Stress Rate Mpa/s	Mode of failure	UCS Mpa
1000740	BH101	Not Given	13.95	14.40	C	Light brown SILTSTONE		86.0	219.2	2.5	Vertical	2.53	2.1	as received	0.1723	AC	77.0

Note: 1 - ISRM p87 test 1, water content at 105 ± 3 °C, specimen as tested for UCS, 2 - ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density, 3 - ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials, above notes apply unless annotated otherwise in the remarks. Compaction machine: VJ Tech AUTOCON - VJT 51-3011; Mode of failure legend: S - Single shear, MS - multiple shear, AC - Axial cleavage, F - Fragmented

Comments:

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

Signed:

Monika Siewior
Senior Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/08/2026

GF 223.18

Rogers Geotechnical Services Ltd
Unit 1 Manorcroft Works
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7 Woodshots Meadow,
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Analytical Report Number : 26-038216

Project / Site name:	Land Adjacent to Penistone Station	**Samples received on:**	15/07/2026
Your job number:	C6144/26/E/9573	**Samples instructed on/ Analysis started on:**	15/07/2026
Your order number:		**Analysis completed by:**	29/07/2026
Report Issue Number:	1	**Report issued on:**	29/07/2026
Samples Analysed:	4 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-038216
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				983615	983616	983617	983618
Sample Reference				TP204	TP204	TP208	TP208
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00
Date Sampled				09/07/2026	09/07/2026	09/07/2026	09/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Mass of stone >10mm	%	0.1	NONE	< 0.1	55.8	30	43.6
Moisture Content	%	0.01	NONE	1.9	4.8	4.1	6
Total mass of sample received	kg	0.1	NONE	2	2	2	2
Whole Sample Crushed	N/A	N/A	NONE	-	Crushed	-	-
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	KWB	KWB
Analysis completed	N/A	N/A	N/A	24/07/2026	24/07/2026	24/07/2026	24/07/2026
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	8.7	7.2	6.4	7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	5.4	0.8	6.2	1.1
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	1.1	-	3.8	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	-	0.2	-
Acenaphthene	mg/kg	0.05	MCERTS	0.27	-	1.1	-
Fluorene	mg/kg	0.05	MCERTS	0.22	-	0.74	-
Phenanthrene	mg/kg	0.05	MCERTS	2.9	-	7.7	-
Anthracene	mg/kg	0.05	MCERTS	0.69	-	1.3	-
Fluoranthene	mg/kg	0.05	MCERTS	4.3	-	9.9	-
Pyrene	mg/kg	0.05	MCERTS	4.1	-	9.1	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	-	5.2	-
Chrysene	mg/kg	0.05	MCERTS	3.1	-	5.7	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	4.1	-	6.7	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.3	-	2.1	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3	-	4.6	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.7	-	2.4	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.43	-	0.65	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2	-	2.7	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	32	-	64	-

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Analytical Report Number: 26-038216
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				983615	983616	983617	983618
Sample Reference				TP204	TP204	TP208	TP208
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00
Date Sampled				09/07/2026	09/07/2026	09/07/2026	09/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	17	< 1.0	17	< 1.0
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	42	11	52	11
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2	1.1	1.8	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.2	0.6	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	0.6	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	68	26	25	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	270	54	460	110
Lead (aqua regia extractable)	mg/kg	1	MCERTS	380	32	380	46
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	51	39	49	35
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	69	29	50	28
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	88	130	100
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	1.5	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	5.4	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	13	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	14	-	100	-
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	-	28	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	14	-	120	-
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	14	-	150	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	2.2	-	3	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	11	-	13	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	30	-	48	-
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	10	-	12	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	43	-	64	-
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	53	-	76	-
VOCs							
Chloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-

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Analytical Report Number: 26-038216
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				983615	983616	983617	983618
Sample Reference				TP204	TP204	TP208	TP208
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00
Date Sampled				09/07/2026	09/07/2026	09/07/2026	09/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	-
Chloroform	µg/kg	5	MCERTS	< 5.0	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	-	-
Trichloroethene	µg/kg	10	MCERTS	< 10	-	-	-
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	< 8.0	-
Styrene	µg/kg	5	MCERTS	< 5.0	-	-	-
Bromoform	µg/kg	5	MCERTS	< 5.0	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	-
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-

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Analytical Report Number: 26-038216
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				983615	983616	983617	983618
Sample Reference				TP204	TP204	TP208	TP208
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00
Date Sampled				09/07/2026	09/07/2026	09/07/2026	09/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	< 0.005	-	-	-
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
p & m-xylene	mg/kg	0.008	MCERTS	< 0.008	-	-	-
o-Xylene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	1.2	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	0.5	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	-	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	NONE	0.4	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	-	-

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Analytical Report Number: 26-038216
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				983615	983616	983617	983618
Sample Reference				TP204	TP204	TP208	TP208
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00
Date Sampled				09/07/2026	09/07/2026	09/07/2026	09/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
PCBs							
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	-	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 26-038216
Project / Site name: Land Adjacent to Penistone Station

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
983615	TP204	None Supplied	0.00-0.20	Brown sand with gravel and vegetation
983616	TP204	None Supplied	0.50-1.00	Brown loam and sand with gravel and stones
983617	TP208	None Supplied	0.00-0.40	Brown sand with vegetation and stones
983618	TP208	None Supplied	0.60-1.00	Brown sand with gravel and stones

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Analytical Report Number : 26-038216
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS	In-house method based on USEPA 8082	L027B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

Analytical Report Number : 26-038216
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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Analytical Report Number : 26-038562

Project / Site name:	Land Adjacent to Penistone Station	**Samples received on:**	15/07/2026
Your job number:	C6144 26 E 9573	**Samples instructed on/ Analysis started on:**	15/07/2026
Your order number:		**Analysis completed by:**	27/07/2026
Report Issue Number:	1	**Report issued on:**	27/07/2026
Samples Analysed:	4 soil samples		



Signed:

Claire Bancroft
Customer Service and Accounts Support
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

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Analytical Report Number: 26-038562
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985323	985324	985325	985326
Sample Reference				TP203	TP203	TP207	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Mass of stone >10mm	%	0.1	NONE	28.7	63.9	71	70.9
Moisture Content	%	0.01	NONE	5.1	5.7	4.4	5.4
Total mass of sample received	kg	0.1	NONE	1	1.4	1.7	2
Whole Sample Crushed	N/A	N/A	NONE	-	Crushed	Crushed	Crushed
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO
Analysis completed	N/A	N/A	N/A	24/07/2026	24/07/2026	24/07/2026	24/07/2026
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	7.5	7.5	7.5	6.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	6.1	0.9	3	0.5
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	1	-	0.94	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	-	0.19	-
Acenaphthene	mg/kg	0.05	MCERTS	0.14	-	0.17	-
Fluorene	mg/kg	0.05	MCERTS	0.14	-	0.15	-
Phenanthrene	mg/kg	0.05	MCERTS	2	-	2	-
Anthracene	mg/kg	0.05	MCERTS	0.49	-	0.49	-
Fluoranthene	mg/kg	0.05	MCERTS	2.8	-	3	-
Pyrene	mg/kg	0.05	MCERTS	2.7	-	2.8	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.6	-	1.6	-
Chrysene	mg/kg	0.05	MCERTS	1.8	-	1.6	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2	-	1.8	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.72	-	0.91	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.3	-	1.4	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.72	-	0.8	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.2	-	0.18	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.74	-	0.81	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	18.5	-	18.8	-

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Analytical Report Number: 26-038562
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985323	985324	985325	985326
Sample Reference				TP203	TP203	TP207	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	11	3.2	9.3	< 1.0
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	32	11	26	6.3
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.8	1.1	1.4	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.3	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.3	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	27	21	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	280	59	170	43
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	25	180	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	39	34	39
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	52	28	34	26
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	69	130	110
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	35	-	39	-
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	-	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	35	-	39	-
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	35	-	39	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	18	-
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	< 8.4	-	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	18	-
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	18	-
VOCs							
Chloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-

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Analytical Report Number: 26-038562
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985323	985324	985325	985326
Sample Reference				TP203	TP203	TP207	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	< 5.0	-
Chloroform	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	< 7.0	-
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	< 6.0	-
Trichloroethene	µg/kg	10	MCERTS	< 10	-	< 10	-
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	< 10	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	< 6.0	-
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	< 8.0	-
Styrene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Bromoform	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	< 8.0	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-

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Analytical Report Number: 26-038562
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985323	985324	985325	985326
Sample Reference				TP203	TP203	TP207	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
p & m-xylene	mg/kg	0.008	MCERTS	< 0.008	-	< 0.008	-
o-Xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	1	-	1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	0.4	-	0.4	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	< 0.30	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	0.3	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-

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Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985323	985324	985325	985326
Sample Reference				TP203	TP203	TP207	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
PCBs							
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	< 0.012	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 26-038562
Project / Site name: Land Adjacent to Penistone Station

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
985323	TP203	None Supplied	0.10-0.40	Brown sandy clay with vegetation and stones
985324	TP203	None Supplied	0.60-1.00	Brown sand with gravel and stones
985325	TP207	None Supplied	0.00-0.70	Brown loam and sand with gravel and stones
985326	TP207	None Supplied	0.70-1.00	Brown sandy clay with gravel and stones

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Analytical Report Number : 26-038562
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS	In-house method based on USEPA 8082	L027B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

Analytical Report Number : 26-038562
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 26-038566

Project / Site name:	Land Adjacent to Penistone Station	**Samples received on:**	15/07/2026
Your job number:	C6144 26 E 9573	**Samples instructed on/ Analysis started on:**	15/07/2026
Your order number:		**Analysis completed by:**	25/07/2026
Report Issue Number:	1	**Report issued on:**	25/07/2026
Samples Analysed:	2 soil samples		

Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-038566
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985351	985352
Sample Reference				BH101	BH101
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.00-0.20	0.40-0.60
Date Sampled				01/07/2026	01/07/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Mass of stone >10mm	%	0.1	NONE	75.5	39.8
Moisture Content	%	0.01	NONE	2.1	5
Total mass of sample received	kg	0.1	NONE	2	2
Whole Sample Crushed	N/A	N/A	NONE	Crushed	-
Asbestos					
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PKU	PKU
Analysis completed	N/A	N/A	N/A	24/07/2026	24/07/2026
General Inorganics					
pH (L099)	pH Units	N/A	MCERTS	8.6	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	0.4
Total Phenols					
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
Heavy Metals / Metalloids					
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	13	3.6
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	22	9.7
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.8	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	91	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	150	44
Lead (aqua regia extractable)	mg/kg	1	MCERTS	89	27
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	42
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	66	28
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	110
PCBs					
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	< 0.001
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	< 0.001

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Analytical Report Number: 26-038566
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				985351	985352
Sample Reference				BH101	BH101
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.00-0.20	0.40-0.60
Date Sampled				01/07/2026	01/07/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Total PCBs	mg/kg	0.012	NONE	< 0.012	< 0.012

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 26-038566
Project / Site name: Land Adjacent to Penistone Station

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
985351	BH101	None Supplied	0.00-0.20	Brown sand with gravel and stones
985352	BH101	None Supplied	0.40-0.60	Brown sand with gravel and stones

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Analytical Report Number : 26-038566
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS	In-house method based on USEPA 8082	L027B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-038566
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Analytical Report Number : 26-038566
Project / Site name: Land Adjacent to Penistone Station

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	N/A	S	985351	c	Monohydric phenols in soil	L080-PL	c
BH101	N/A	S	985351	c	Total cyanide in soil	L080-PL	c
BH101	N/A	S	985351	c	pH in soil (automated)	L099-PL	c
BH101	N/A	S	985352	c	Monohydric phenols in soil	L080-PL	c
BH101	N/A	S	985352	c	Total cyanide in soil	L080-PL	c
BH101	N/A	S	985352	c	pH in soil (automated)	L099-PL	c

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 26-041294

Project / Site name:	Land Adjacent to Penistone Station	**Samples received on:**	29/07/2026
Your job number:	C6144/26/E/9573	**Samples instructed on/ Analysis started on:**	29/07/2026
Your order number:		**Analysis completed by:**	11/08/2026
Report Issue Number:	1	**Report issued on:**	11/08/2026
Samples Analysed:	11 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999782	999783	999784	999785	999786
Sample Reference				BH101	BH102	BH103	TP201	TP201
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Mass of stone >10mm	%	0.1	NONE	81.5	< 0.1	< 0.1	59.1	< 0.1
Moisture Content	%	0.01	NONE	4.1	9	5.9	5.9	5.2
Total mass of sample received	kg	0.1	NONE	2	0.4	0.3	2	2
Whole Sample Crushed	N/A	N/A	NONE	Crushed	-	-	Crushed	-
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	MBI	MBI
Analysis completed	N/A	N/A	N/A	-	-	-	05/08/2026	05/08/2026
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	6.1	7.6	8.2	7.6	8
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Total Sulphate as SO_4	%	0.005	MCERTS	0.024	0.016	0.007	-	-
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	40	42	20	-	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	20.1	20.8	9.79	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	0.8	1.5	2.3	-	-
Total Sulphur	mg/kg	50	MCERTS	160	67	59	-	-
Total Sulphur	%	0.005	MCERTS	0.016	0.007	0.006	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	3.8	1.1
Nitrate as NO_3 (Water Soluble) (2:1)	mg/kg	0.9	NONE	< 0.90	< 0.90	< 0.90	-	-
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	0.9	N/A	< 0.90	< 0.90	< 0.90	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	0.99	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	0.1	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	0.09	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	1.5	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	0.27	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	1.8	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	1.6	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	0.83	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	1.2	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	1.3	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	0.6	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	0.79	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	0.52	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	0.17	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	0.56	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	12.2	-
Heavy Metals / Metalloids								

Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999782	999783	999784	999785	999786
Sample Reference				BH101	BH102	BH103	TP201	TP201
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	-	9.1	4.3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	24	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	1	1.1
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.6	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	22	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	190	80
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	87	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	32	40
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	36	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	99	96
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	4.9	27	-	-
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	9.9	53	-	-
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-	-	33	-
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	-	-	-	9.2	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	-	-	33	-
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	-	-	42	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	-	-	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-	-	14	-
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	-	-	14	-
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	-	-	14	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999782	999783	999784	999785	999786
Sample Reference				BH101	BH102	BH103	TP201	TP201
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-

MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	-	-	-	-	-
Benzene	mg/kg	0.005	MCERTS	-	-	-	-	-
Toluene	mg/kg	0.005	MCERTS	-	-	-	-	-
Ethylbenzene	mg/kg	0.005	MCERTS	-	-	-	-	-
p & m-xylene	mg/kg	0.008	MCERTS	-	-	-	-	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999782	999783	999784	999785	999786
Sample Reference				BH101	BH102	BH103	TP201	TP201
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
o-Xylene	mg/kg	0.005	MCERTS	-	-	-	-	-
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999782	999783	999784	999785	999786
Sample Reference				BH101	BH102	BH103	TP201	TP201
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999787	999788	999789	999790	999791
Sample Reference				TP202	TP202	TP205	TP205	TP209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	61.5	< 0.1	46.5
Moisture Content	%	0.01	NONE	5.7	4.6	6.7	5.4	4.9
Total mass of sample received	kg	0.1	NONE	1.9	2	2	2	2
Whole Sample Crushed	N/A	N/A	NONE	-	-	Crushed	-	-
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MBI	MBI	MBI	MBI	MBI
Analysis completed	N/A	N/A	N/A	05/08/2026	05/08/2026	05/08/2026	05/08/2026	05/08/2026
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.4	7.8	7.5	7.4	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO_4	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	7.1	1.3	2.1	1	5.6
Nitrate as NO_3 (Water Soluble) (2:1)	mg/kg	0.9	NONE	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	0.9	N/A	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	2.6	-	0.47	-	1.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	-	0.05	-	0.22
Acenaphthene	mg/kg	0.05	MCERTS	0.2	-	< 0.05	-	0.16
Fluorene	mg/kg	0.05	MCERTS	0.21	-	< 0.05	-	0.19
Phenanthrene	mg/kg	0.05	MCERTS	2.9	-	0.68	-	3
Anthracene	mg/kg	0.05	MCERTS	0.45	-	0.17	-	0.79
Fluoranthene	mg/kg	0.05	MCERTS	3.2	-	0.96	-	6.1
Pyrene	mg/kg	0.05	MCERTS	3	-	0.86	-	5.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.8	-	0.63	-	3.2
Chrysene	mg/kg	0.05	MCERTS	1.9	-	0.72	-	3.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2	-	0.89	-	4.2
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.74	-	0.4	-	1.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.4	-	0.71	-	3.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.69	-	0.48	-	1.8
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.2	-	0.13	-	0.52
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.72	-	0.53	-	2.1
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	22.1	-	7.69	-	37.8
Heavy Metals / Metalloids								

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999787	999788	999789	999790	999791
Sample Reference				TP202	TP202	TP205	TP205	TP209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	17	4.9	7.2	4.8	16
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	41	12	18	14	46
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.7	1	1.2	1.1	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.6	< 0.2	0.7	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	< 0.2	< 0.2	< 0.2	0.6
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	25	18	26	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	380	76	200	66	320
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	33	59	35	320
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	0.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	39	36	37	39
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	51	28	38	29	53
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	100	81	87	170
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	21
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	59	-	< 8.0	-	250
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	15	-	< 8.4	-	45
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	59	-	< 10	-	270
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	74	-	< 10	-	310
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	-	< 10	-	17
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	19	-	< 10	-	120
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	< 8.4	-	< 8.4	-	38
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	19	-	< 10	-	140
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	19	-	< 10	-	170

VOCs

Chloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0

Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999787	999788	999789	999790	999791
Sample Reference				TP202	TP202	TP205	TP205	TP209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Chloroform	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	< 7.0	-	< 7.0
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	< 6.0	-	< 6.0
Trichloroethene	µg/kg	10	MCERTS	< 10	-	< 10	-	< 10
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	< 10	-	< 10
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	< 6.0	-	< 6.0
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	< 8.0	-	< 8.0
Styrene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Bromoform	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	< 8.0	-	< 8.0
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0

MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-	< 0.005
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-	< 0.005
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-	< 0.005
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-	< 0.005
p & m-xylene	mg/kg	0.008	MCERTS	< 0.008	-	< 0.008	-	< 0.008

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999787	999788	999789	999790	999791
Sample Reference				TP202	TP202	TP205	TP205	TP209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
o-Xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-	< 0.005
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	2.8	-	0.5	-	1.2
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	1	-	0.2	-	0.6
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	< 0.30	-	< 0.30
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	1
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	-	-	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999787	999788	999789	999790	999791
Sample Reference				TP202	TP202	TP205	TP205	TP209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32
Date Sampled				24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999792
Sample Reference				TP209
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				1.00-1.50
Date Sampled				24/07/2026
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Mass of stone >10mm	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	5.3
Total mass of sample received	kg	0.1	NONE	2
Whole Sample Crushed	N/A	N/A	NONE	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MBI
Analysis completed	N/A	N/A	N/A	05/08/2026

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO_4	%	0.005	MCERTS	-
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-
Total Sulphur	mg/kg	50	MCERTS	-
Total Sulphur	%	0.005	MCERTS	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.3
Nitrate as NO_3 (Water Soluble) (2:1)	mg/kg	0.9	NONE	-
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	0.9	N/A	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-

Heavy Metals / Metalloids

Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999792
Sample Reference				TP209
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				1.00-1.50
Date Sampled				24/07/2026
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3.3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	41
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-
Magnesium (water soluble)	mg/kg	5	NONE	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	-

VOCs

Chloromethane	µg/kg	5	MCERTS	-
Chloroethane	µg/kg	5	MCERTS	-
Bromomethane	µg/kg	5	MCERTS	-
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-
2,2-Dichloropropane	µg/kg	5	NONE	-

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999792
Sample Reference				TP209
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				1.00-1.50
Date Sampled				24/07/2026
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Chloroform	µg/kg	5	MCERTS	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-
Benzene	µg/kg	5	MCERTS	-
Carbontetrachloride	µg/kg	5	MCERTS	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-
Trichloroethene	µg/kg	10	MCERTS	-
Dibromomethane	µg/kg	5	MCERTS	-
Bromodichloromethane	µg/kg	5	MCERTS	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-
Dibromochloromethane	µg/kg	5	MCERTS	-
Tetrachloroethene	µg/kg	5	MCERTS	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-
Chlorobenzene	µg/kg	5	MCERTS	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	8	MCERTS	-
Styrene	µg/kg	5	MCERTS	-
Bromoform	µg/kg	5	MCERTS	-
o-Xylene	µg/kg	5	MCERTS	-
Isopropylbenzene	µg/kg	5	MCERTS	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-
Bromobenzene	µg/kg	5	MCERTS	-
n-Propylbenzene	µg/kg	5	MCERTS	-
2-Chlorotoluene	µg/kg	5	MCERTS	-
4-Chlorotoluene	µg/kg	5	MCERTS	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-
tert-Butylbenzene	µg/kg	5	MCERTS	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-
sec-Butylbenzene	µg/kg	5	MCERTS	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-
Butylbenzene	µg/kg	5	MCERTS	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-

MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	-
Benzene	mg/kg	0.005	MCERTS	-
Toluene	mg/kg	0.005	MCERTS	-
Ethylbenzene	mg/kg	0.005	MCERTS	-
p & m-xylene	mg/kg	0.008	MCERTS	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999792
Sample Reference				TP209
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				1.00-1.50
Date Sampled				24/07/2026
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
o-Xylene	mg/kg	0.005	MCERTS	-

SVOCs

Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	NONE	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	NONE	-
Azobenzene	mg/kg	0.3	NONE	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	NONE	-
Anthraquinone	mg/kg	0.3	NONE	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-
PCB Congener 081	mg/kg	0.001	NONE	-
PCB Congener 105	mg/kg	0.001	NONE	-
PCB Congener 114	mg/kg	0.001	NONE	-
PCB Congener 118	mg/kg	0.001	NONE	-
PCB Congener 123	mg/kg	0.001	NONE	-
PCB Congener 126	mg/kg	0.001	NONE	-

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Analytical Report Number: 26-041294
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				999792
Sample Reference				TP209
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				1.00-1.50
Date Sampled				24/07/2026
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
PCB Congener 156	mg/kg	0.001	NONE	-
PCB Congener 157	mg/kg	0.001	NONE	-
PCB Congener 167	mg/kg	0.001	NONE	-
PCB Congener 169	mg/kg	0.001	NONE	-
PCB Congener 189	mg/kg	0.001	NONE	-

Total PCBs	mg/kg	0.012	NONE	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 26-041294
Project / Site name: Land Adjacent to Penistone Station

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
999782	BH101	None Supplied	0.80-1.00	Brown gravelly sand with stones
999783	BH102	None Supplied	0.65-0.90	Brown sandy clay
999784	BH103	None Supplied	0.80-1.00	Brown sandy clay
999785	TP201	None Supplied	0.00-0.50	Brown sand with gravel and stones
999786	TP201	None Supplied	1.00-1.50	Brown clay and sand
999787	TP202	None Supplied	0.00-0.50	Brown clay and sand with gravel
999788	TP202	None Supplied	0.75-1.25	Brown clay and sand with gravel and vegetation
999789	TP205	None Supplied	0.00-0.25	Brown sand with gravel and stones
999790	TP205	None Supplied	1.00-1.60	Brown sandy clay
999791	TP209	None Supplied	0.00-0.32	Brown loam and sand with vegetation and stones
999792	TP209	None Supplied	1.00-1.50	Brown clay and sand

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Analytical Report Number : 26-041294
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Water Soluble Nitrate (2:1) as NO3 in soil	Determination of nitrate as NO3 in soil by discrete method	In-house method by discrete analyzer based on TON as N, Total Oxidized Nitrogen (Vanadium Chloride reduction), Thermo Fisher Scientific, MANUAL 2015-0	L082B	W	NONE
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS

Analytical Report Number : 26-041294
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS	In-house method based on USEPA 8082	L027B	D	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 26-041500

Project / Site name:	Land Adjacent to Penistone Station	**Samples received on:**	29/07/2026
Your job number:	C6144-26-E-9573	**Samples instructed on/ Analysis started on:**	29/07/2026
Your order number:		**Analysis completed by:**	19/08/2026
Report Issue Number:	1	**Report issued on:**	19/08/2026
Samples Analysed:	3 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

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Analytical Report Number: 26-041500
Project / Site name: Land Adjacent to Penistone Station

Lab Sample Number				1000776	1000777	1000778
Sample Reference				BH101	BH101	BH101
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				4.00-4.60	5.50-5.60	7.00-7.55
Date Sampled				24/07/2026	24/07/2026	24/07/2026
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	5.7	14
Total mass of sample received	kg	0.1	NONE	0.3	0.5	0.2

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.4	6.5	7.8
Total Sulphate as SO_4	%	0.005	MCERTS	0.015	0.014	0.015
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	48	90	86
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	24.1	44.8	42.9
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	3	3.8	2.7
Total Sulphur	mg/kg	50	MCERTS	< 50	71	72
Total Sulphur	%	0.005	MCERTS	< 0.005	0.007	0.007
Nitrate as NO_3 (Water Soluble) (2:1)	mg/kg	0.9	NONE	1.11	< 0.90	< 0.90
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	0.9	N/A	< 0.90	< 0.90	< 0.90

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	8.4	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	17	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 26-041500
Project / Site name: Land Adjacent to Penistone Station

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1000776	BH101	None Supplied	4.00-4.60	Brown clay
1000777	BH101	None Supplied	5.50-5.60	Brown clay and loam
1000778	BH101	None Supplied	7.00-7.55	Brown clay

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Analytical Report Number : 26-041500
Project / Site name: Land Adjacent to Penistone Station

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Water Soluble Nitrate (2:1) as NO3 in soil	Determination of nitrate as NO3 in soil by discrete method	In-house method by discrete analyzer based on TON as N, Total Oxidized Nitrogen (Vanadium Chloride reduction), Thermo Fisher Scientific, MANUAL 2015-0	L082B	W	NONE
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

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The result for sum should be interpreted with caution

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Appendix 8

Photographs

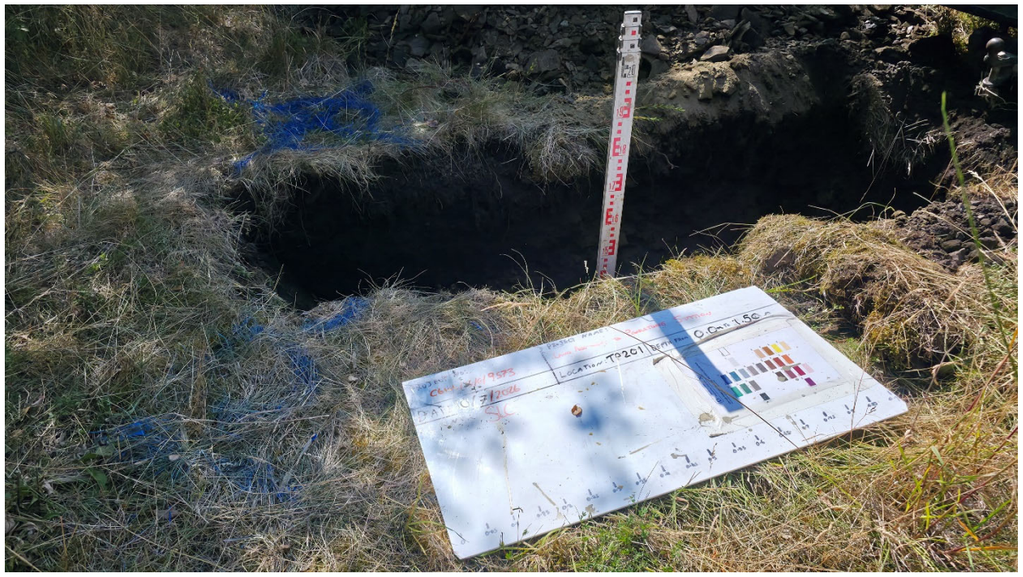


Photo 1: TP201 Overview - 0.00m - 1.50m



Photo 2: TP201 Downhole View 1



Photo 3: TP201 Downhole View 2



Photo 4: TP201 Topsoil



Photo 5: TP201 Natural Spoil



Photo 6: TP201 Soakaway Testing



Photo 7: TP201 Reinstatement

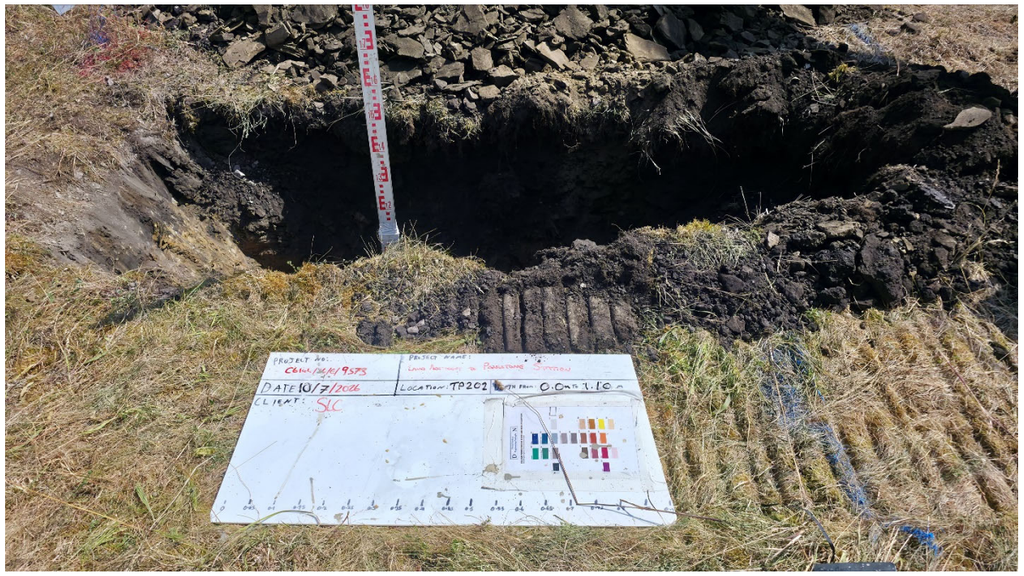


Photo 8: TP202 Overview - 0.00m - 1.10m



Photo 9: TP202 Downhole View



Photo 10: TP202 Topsoil Spoil



Photo 11: TP202 Natural Spoil



Photo 12: TP202 Reinstatement



Photo 13: TP203 Overview - 0.00m - 2.60m



Photo 14: TP203 Overview - 0.00m - 2.60m



Photo 15: TP203 Overview - 0.00m - 2.60m



Photo 16: TP203 Downhole View



Photo 17: TP203 Topsoil Spoil



Photo 18: TP203 Natural Spoil



Photo 19: TP203 Reinstatement

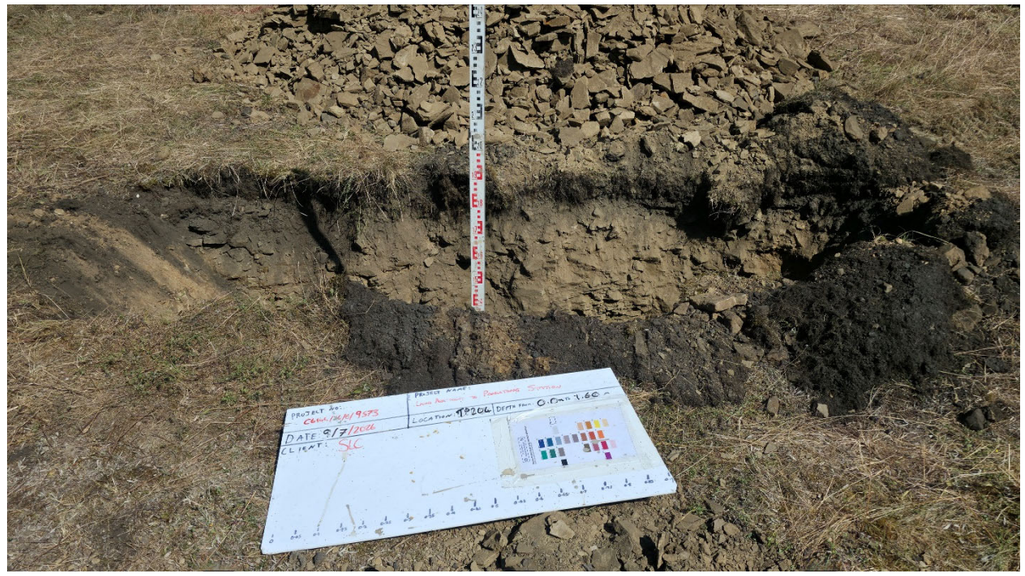


Photo 20: TP204 Overview - 0.00m - 1.60m



Photo 21: TP204 Downhole View 1



Photo 22: TP204 Downhole View 2



Photo 23: TP204 Topsoil Spoil



Photo 24: TP204 Natural Spoil



Photo 25: TP204 Reinstatement



Photo 26: TP205 Overview - 0.00m - 1.60m



Photo 27: TP205 Overview - 0.00m - 1.60m



Photo 28: TP205 Downhole View 1



Photo 29: TP205 Downhole View 2



Photo 30: TP205 Topsoil Spoil



Photo 31: TP205 Natural Spoil



Photo 32: TP205 Reinstatement



Photo 33: TP206 - Not undertaken



Photo 34: TP207 Overview - 0.00m - 2.10m



Photo 35: TP207 Overview - 0.00m - 2.10m



Photo 36: TP207 Overview - 0.00m - 2.10m



Photo 37: TP207 Downhole View



Photo 38: TP207 Topsoil Spoil



Photo 39: TP207 Natural Spoil



Photo 40: TP207 Reinstatement



Photo 41: TP208 Overview - 0.00m - 1.60m



Photo 42: TP208 Downhole View



Photo 43: TP208 Topsoil Spoil



Photo 44: TP208 Natural Spoil



Photo 45: TP208 Reinstatement

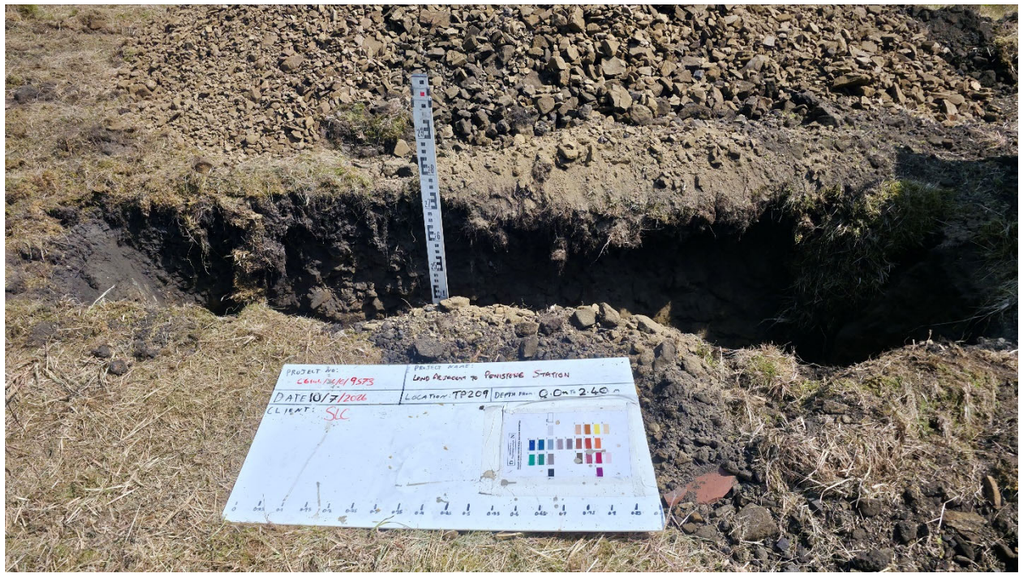


Photo 46: TP209 Overview - 0.00m - 2.40m



Photo 47: TP209 Overview - 0.00m - 2.40m



Photo 48: TP209 Overview - 0.00m - 2.40m



Photo 49: TP209 Downhole View



Photo 50: TP209 Topsoil



Photo 51: TP209 Natural Spoil



Photo 52: TP209 Soakaway Testing



Photo 53: TP209 Reinstatement



Photo 54: BH101 - 1.00m - 2.50m

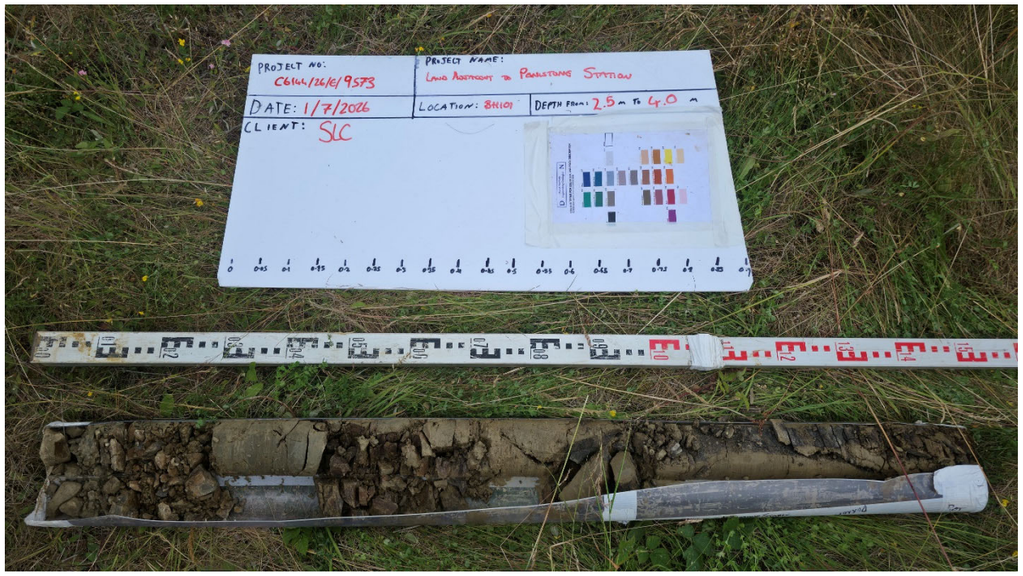


Photo 55: BH101 - 2.50m - 4.00m



Photo 56: BH101 - 4.00m - 5.50m



Photo 57: BH101 - 5.50m - 7.00m



Photo 58: BH101 - 7.00m - 8.50m



Photo 59: BH101 - 8.50m - 10.00m

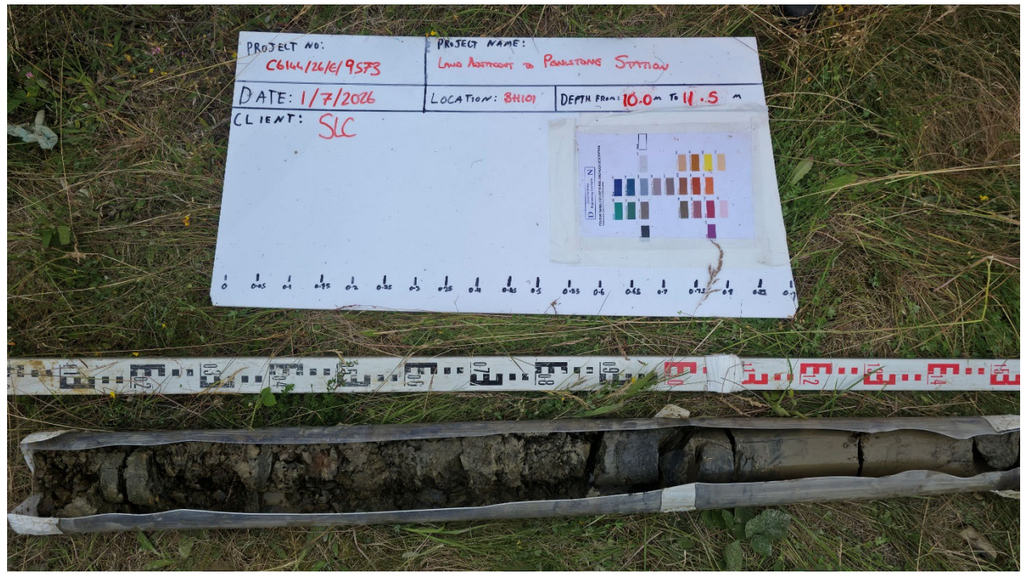


Photo 60: BH101 - 10.00m - 11.50m

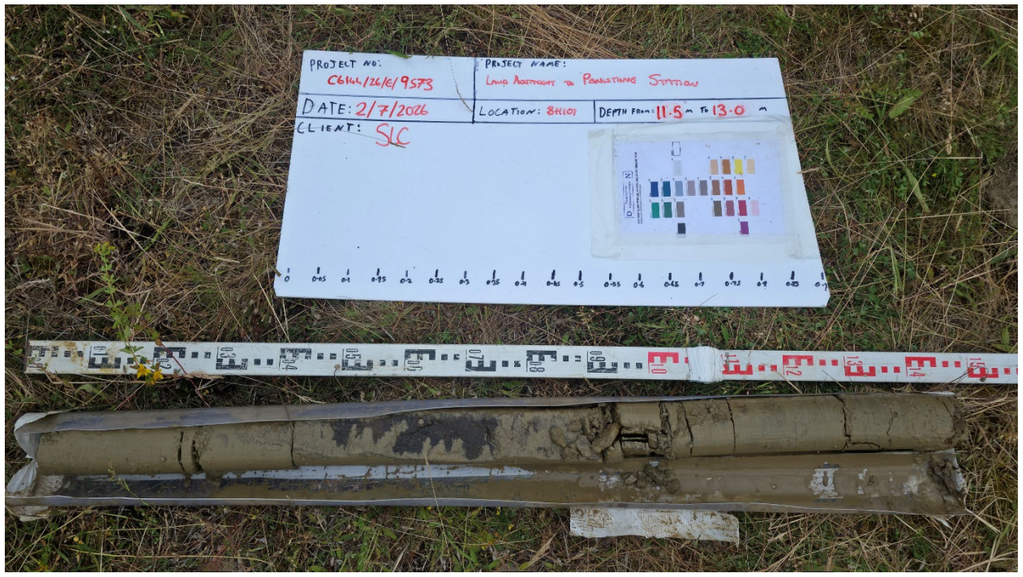


Photo 61: BH101 - 11.50m - 13.00m

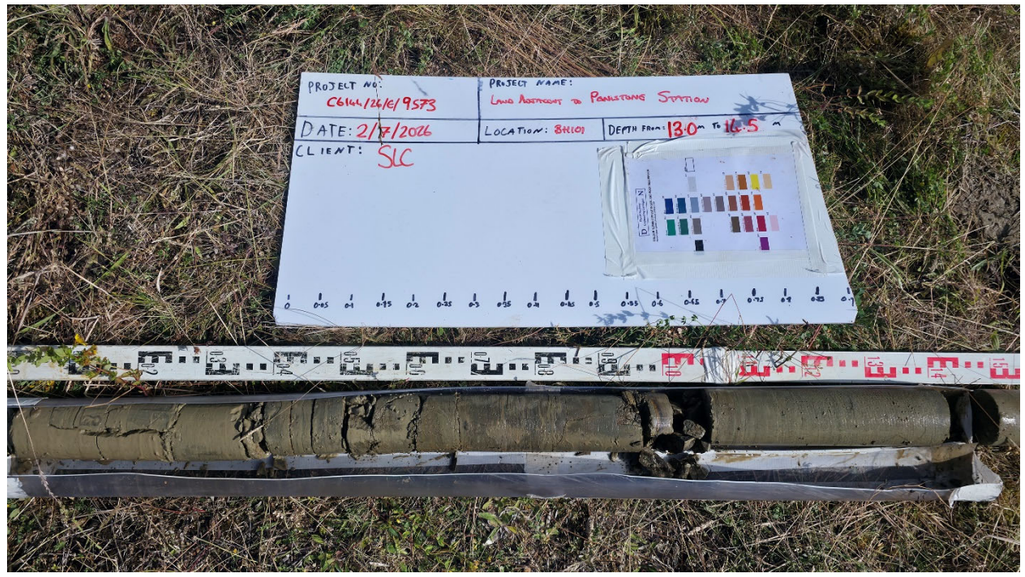


Photo 62: BH101 - 13.00m - 14.50m



Photo 63: BH101 - 14.50m - 16.00m

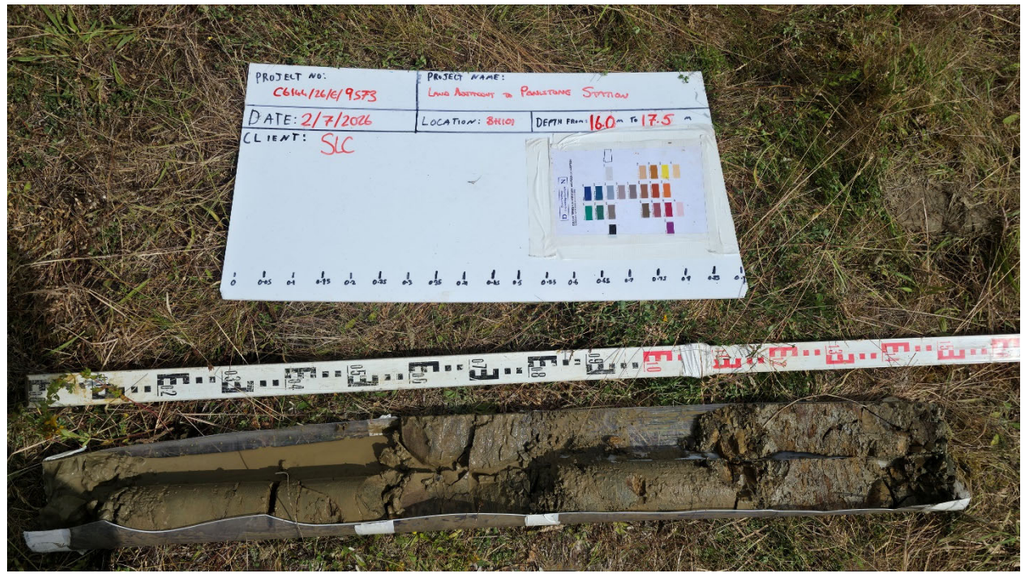


Photo 64: BH101 - 16.00m - 17.50m

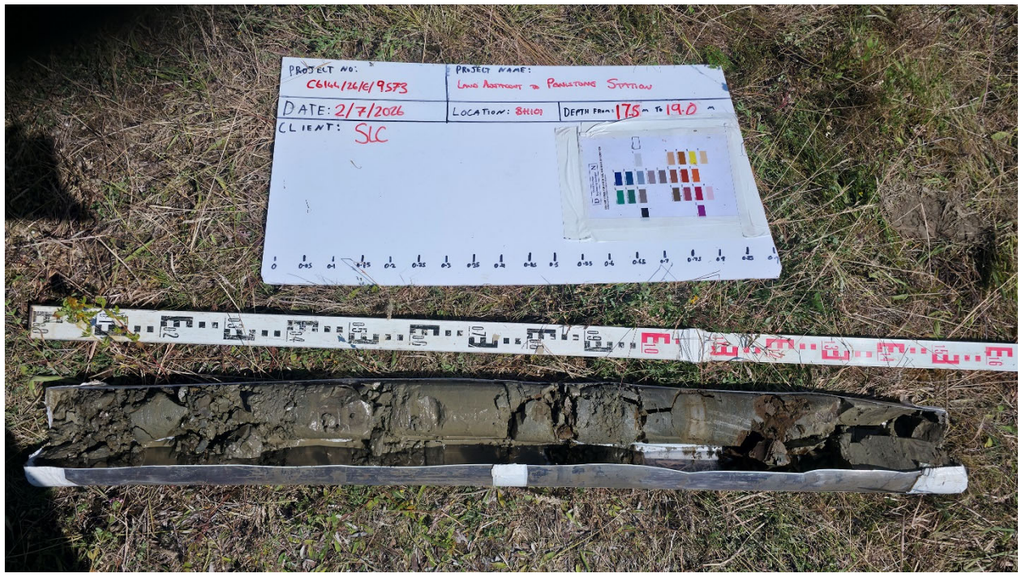


Photo 65: BH101 - 17.50m - 19.00m

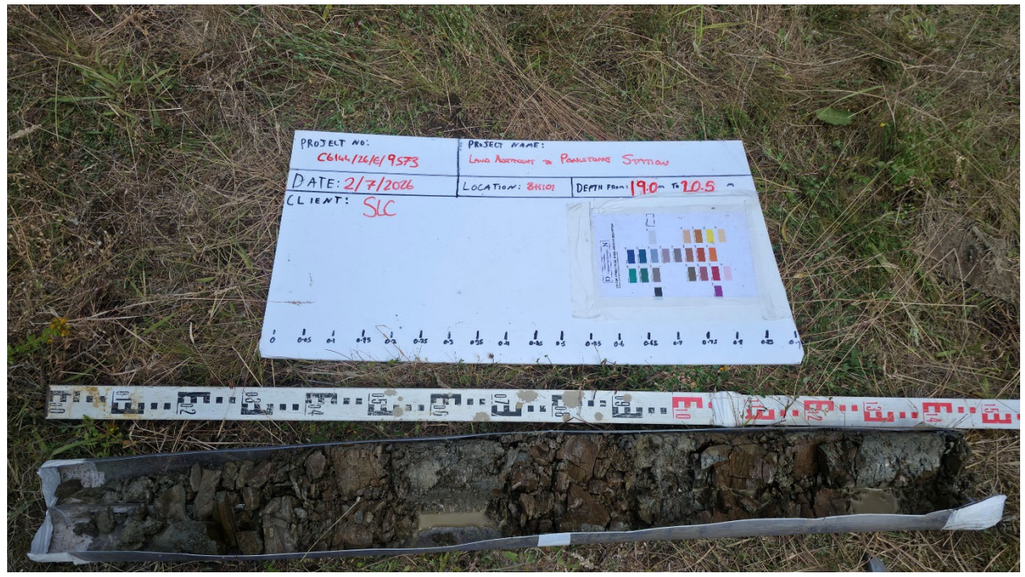


Photo 66: BH101 - 19.00m - 20.50m

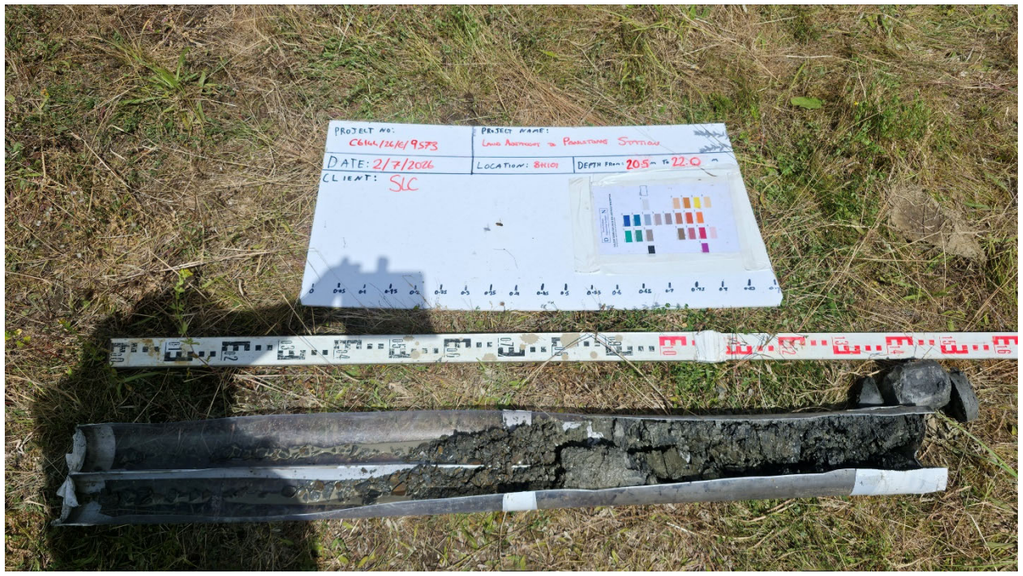


Photo 67: BH101 - 20.50m - 22.00m

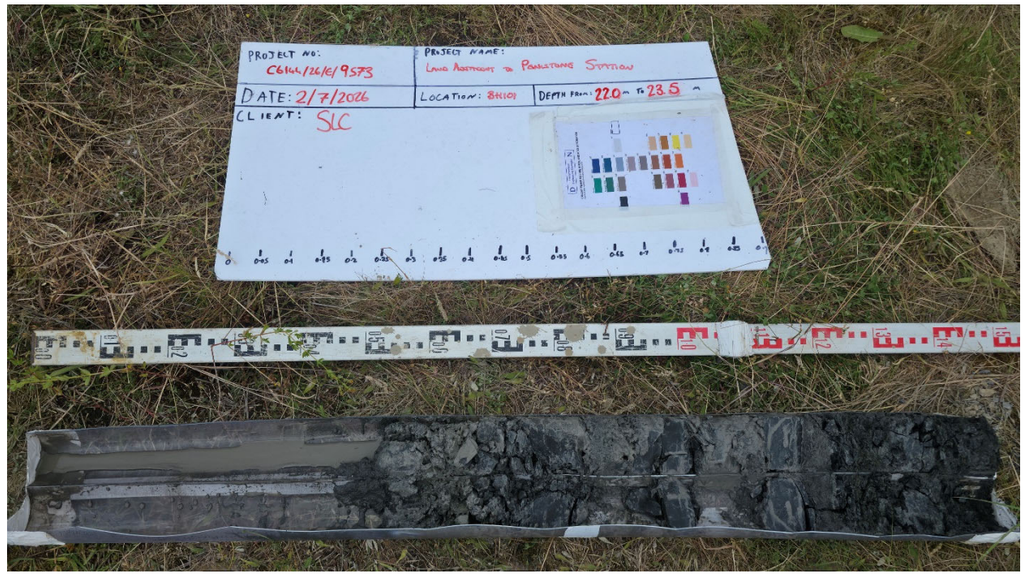


Photo 68: BH101 - 22.00m - 23.50m

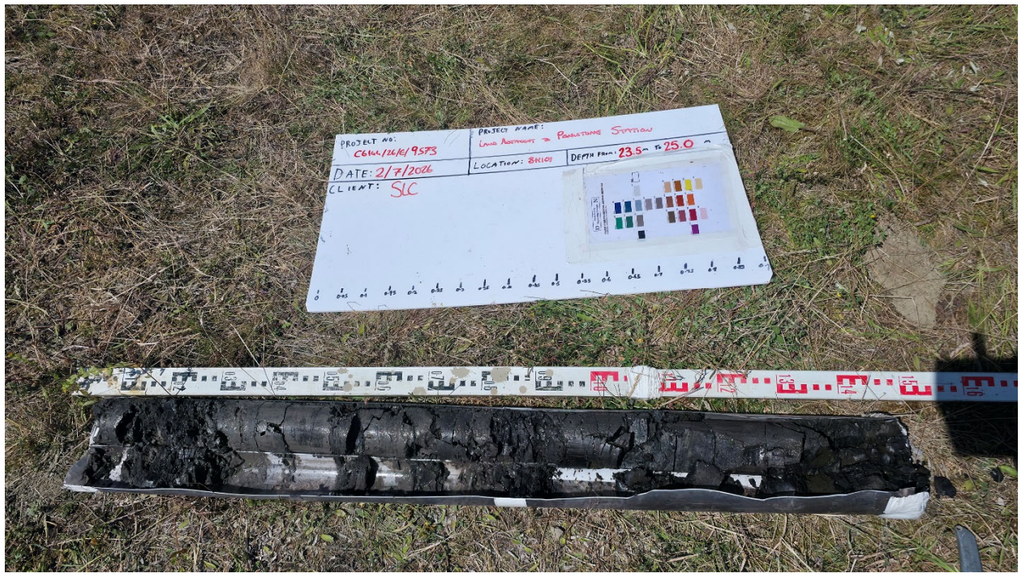


Photo 69: BH101 - 23.50m - 25.00m



Photo 70: BH101 - 25.00m - 26.50m

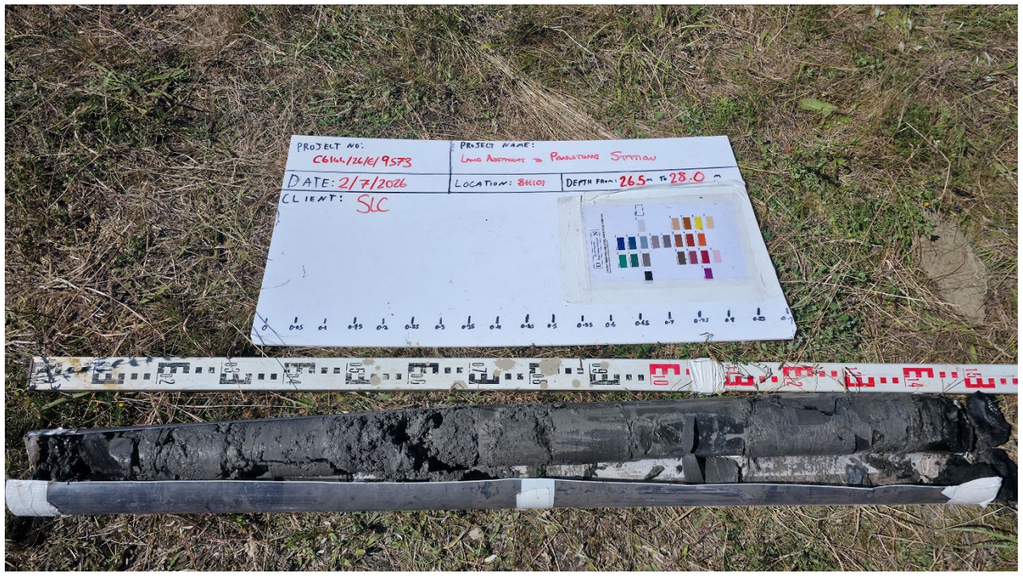


Photo 71: BH101 - 26.50m - 28.00m

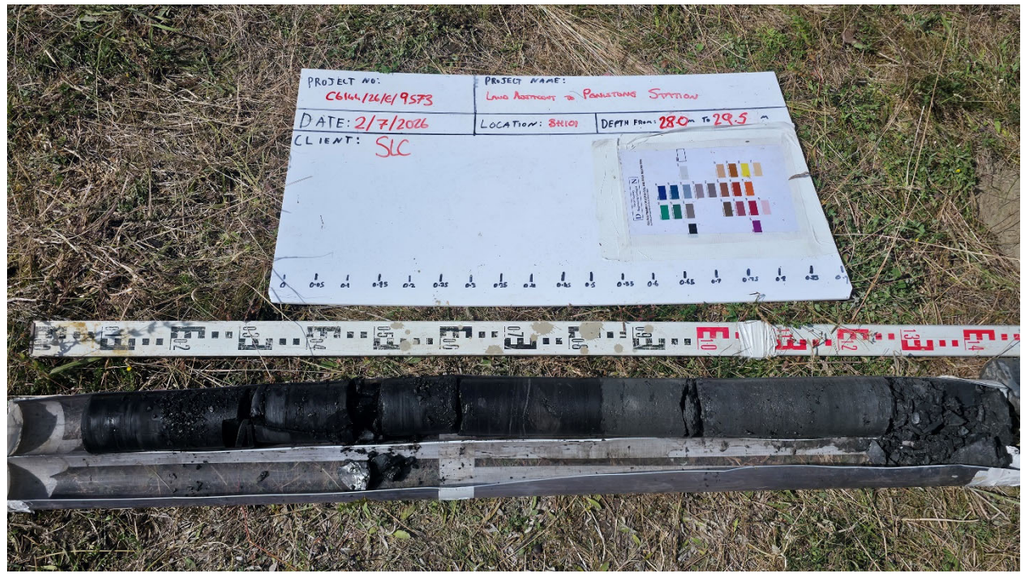


Photo 72: BH101 - 28.00m - 29.50m

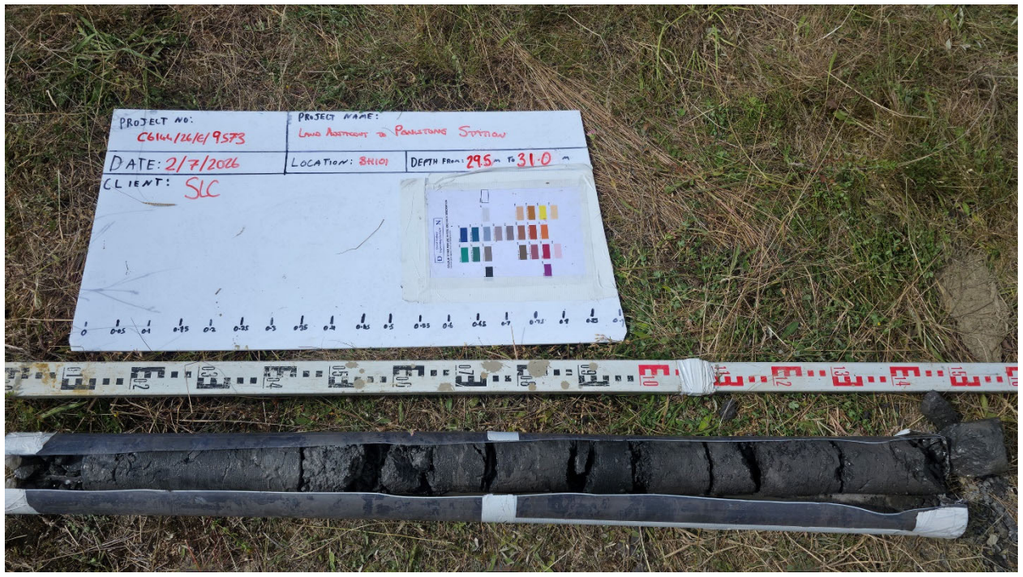


Photo 73: BH101 - 29.50m - 31.00m



Photo 74: BH102 Service Pit - 0.00m - 0.65m



Photo 75: BH102 Downhole View 1



Photo 76: BH102 Downhole View 2



Photo 77: BH102 Spoil



Photo 78: BH102 Spoil



Photo 79: BH102 - 0.65m - 1.10m



Photo 80: BH102 - 0.65m - 1.10m



Photo 81: BH102 - 1.10m - 1.70m



Photo 82: BH102 - 1.70m - 2.30m



Photo 83: BH102 - 2.30m - 4.00m

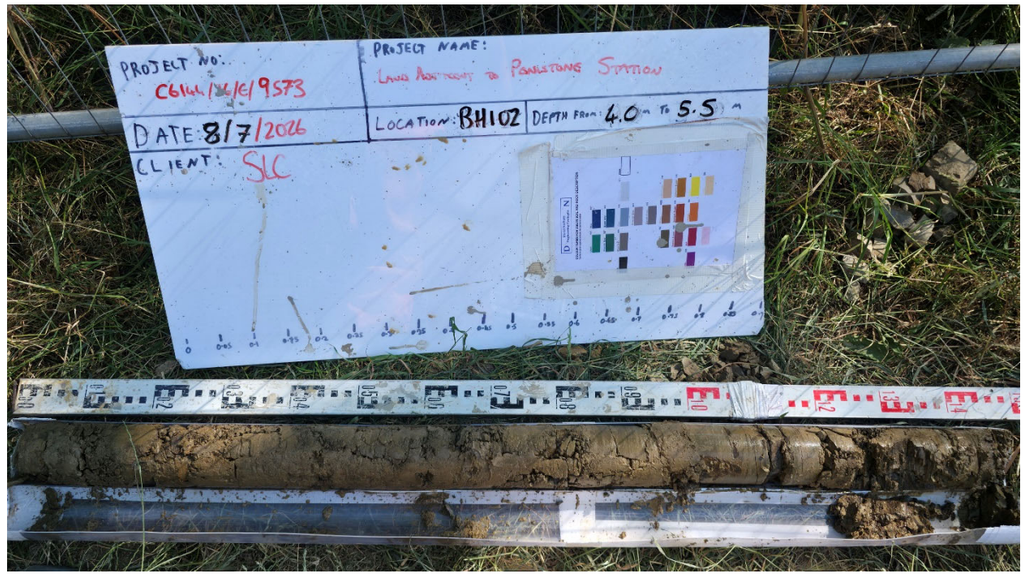


Photo 84: BH102 - 4.00m - 5.50m

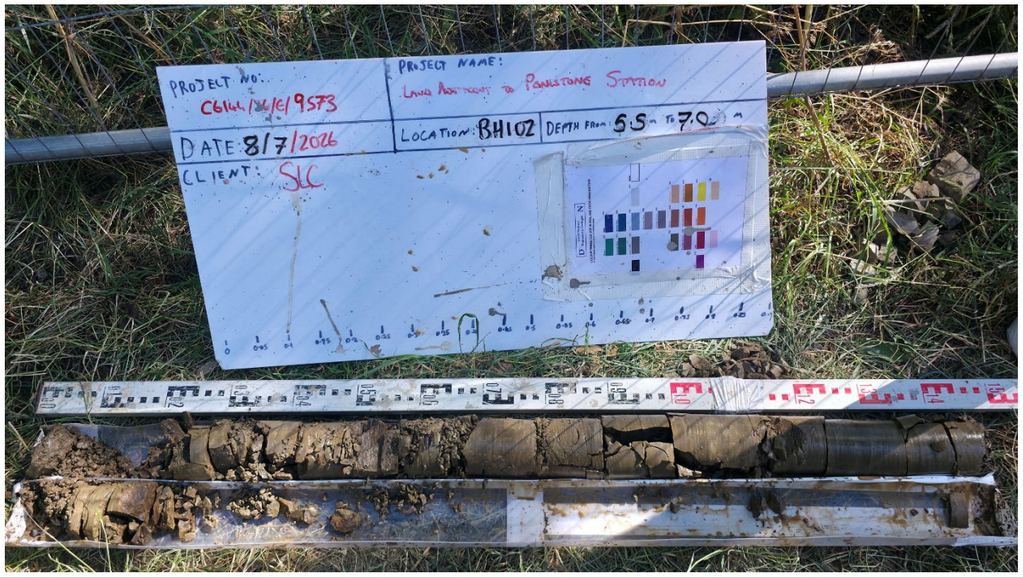


Photo 85: BH102 - 5.50m - 7.00m



Photo 86: BH102 - 7.00m - 7.50m

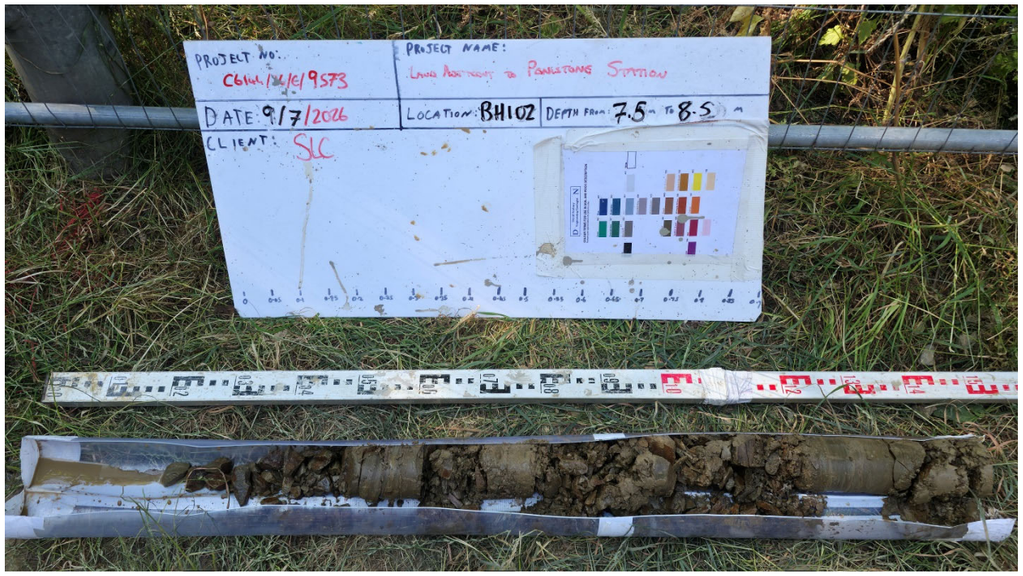


Photo 87: BH102 - 7.50m - 8.50m

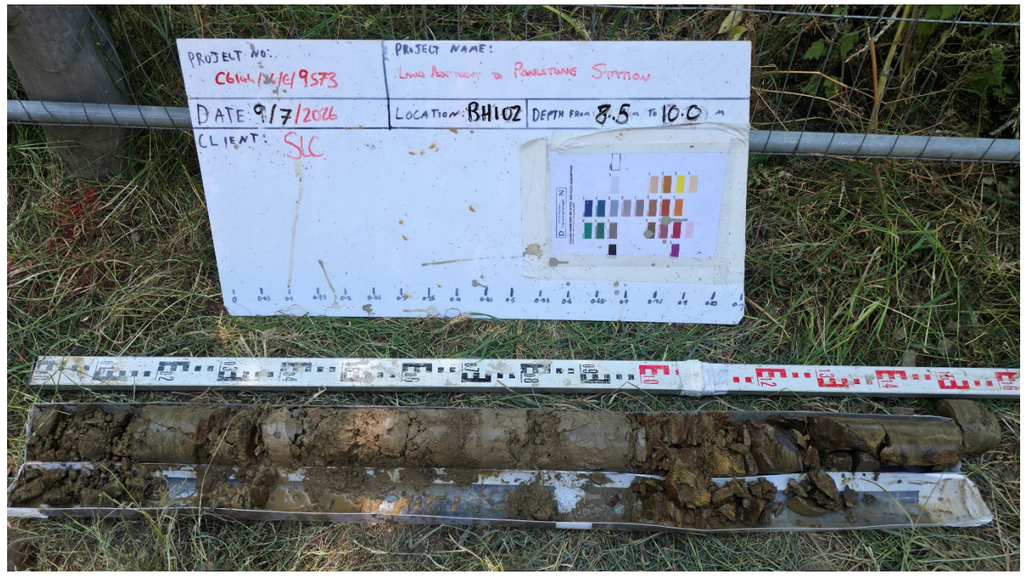


Photo 88: BH102 - 8.50m - 10.00m

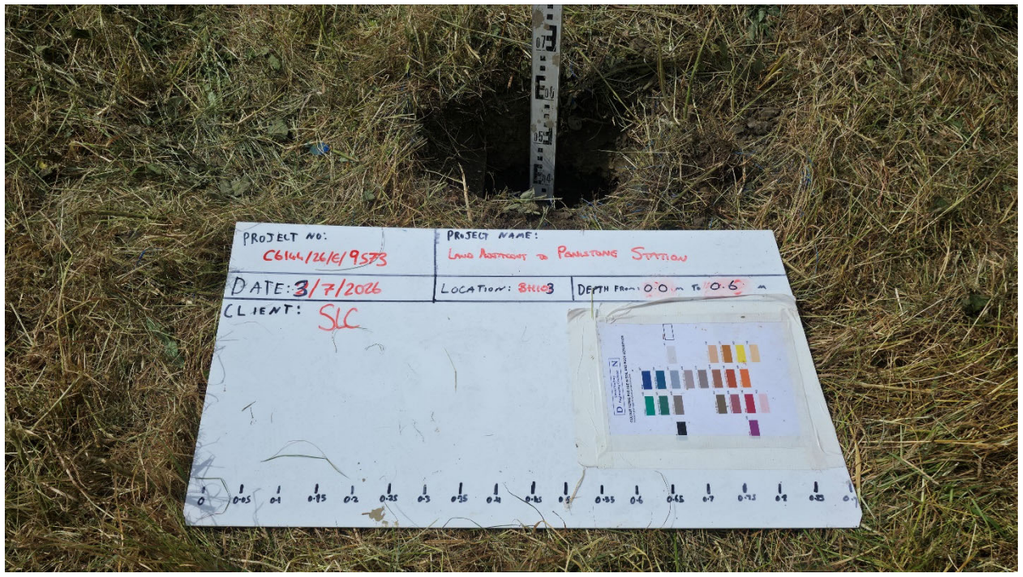


Photo 89: BH103 Service Pit - 0.00m - 0.60m



Photo 90: BH103 Downhole View



Photo 91: BH103 Spoil

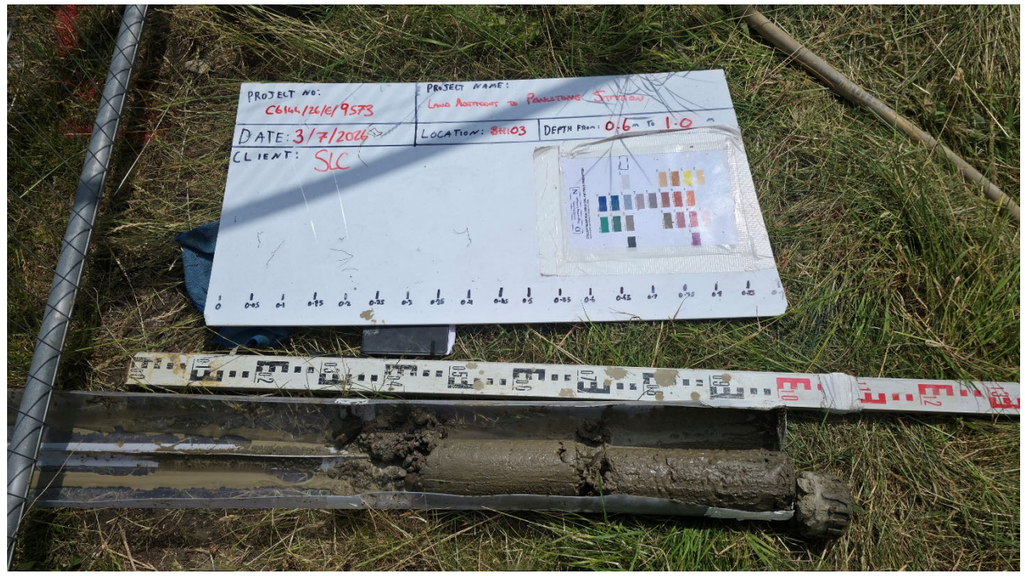


Photo 92: BH103 - 0.60m - 1.00m

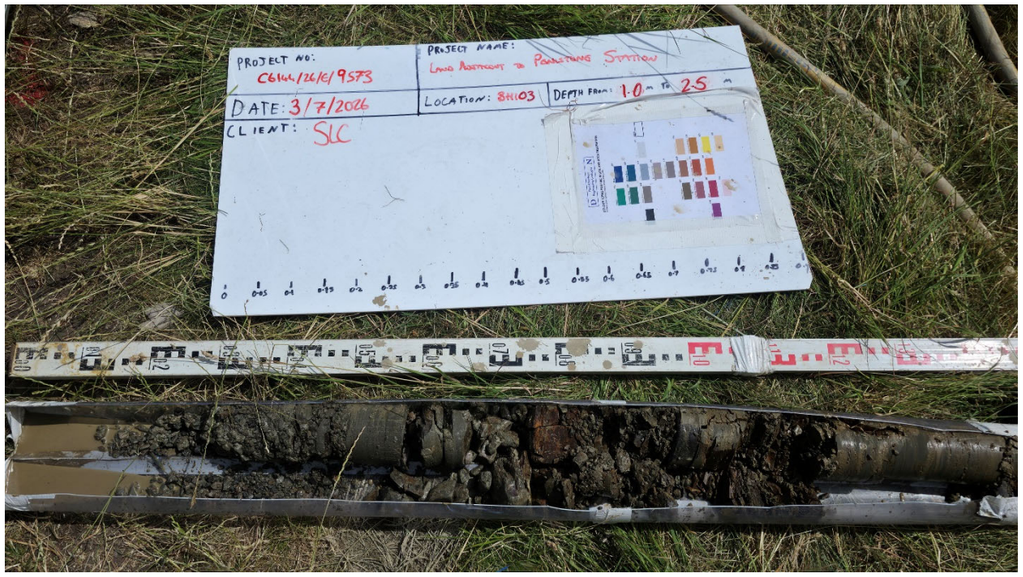


Photo 93: BH103 - 1.00m - 2.50m

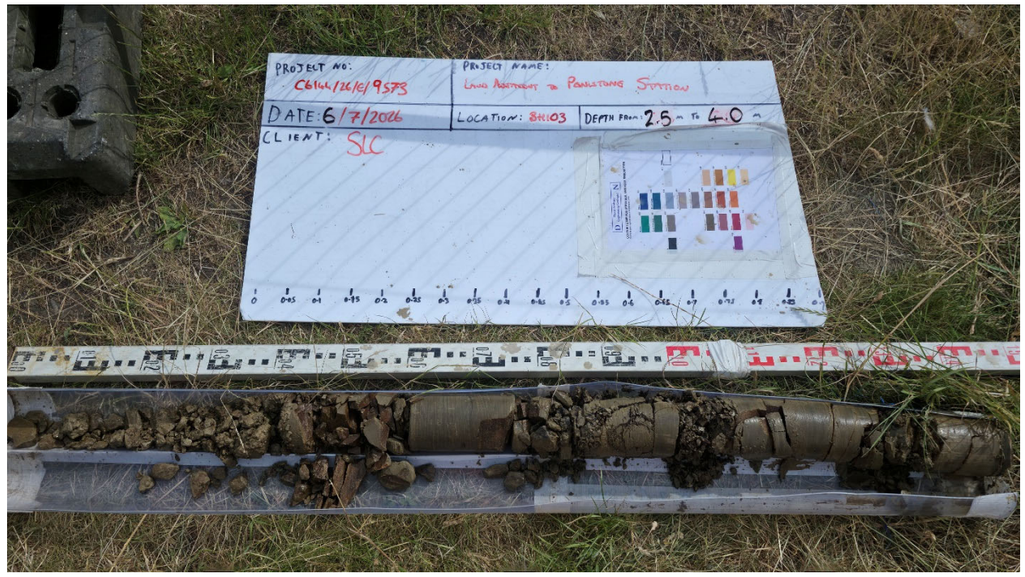


Photo 94: BH103 - 2.50m - 4.00m

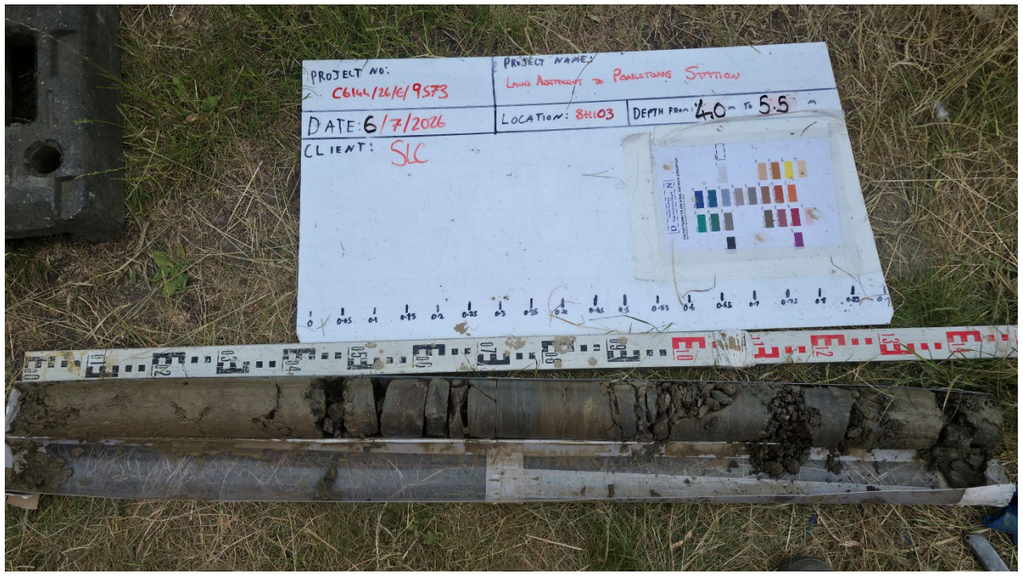


Photo 95: BH103 - 4.00m - 5.50m



Photo 96: BH103 - 5.50m - 7.00m

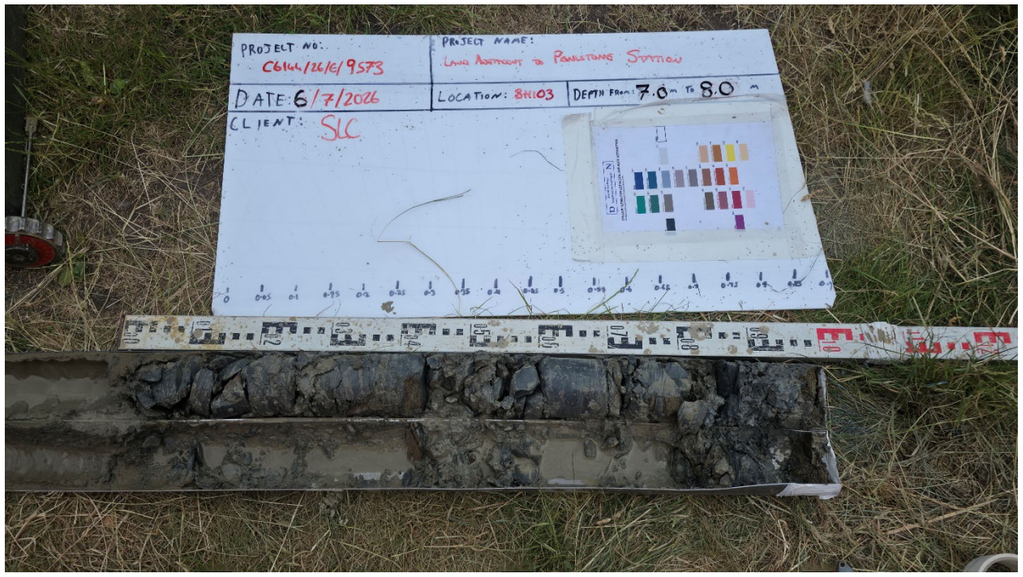


Photo 97: BH103 - 7.00m - 8.00m

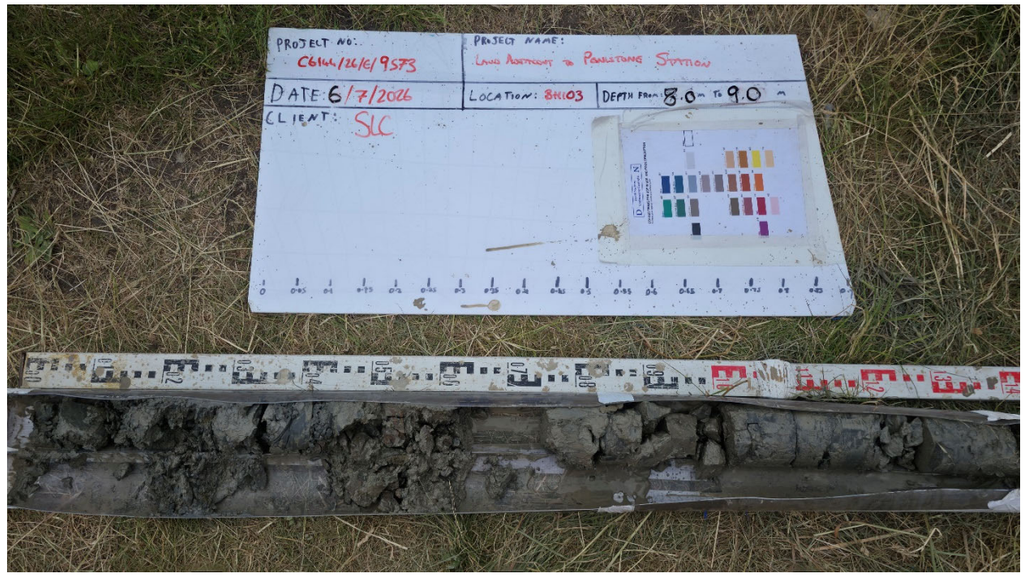


Photo 98: BH103 - 8.00m - 9.00m

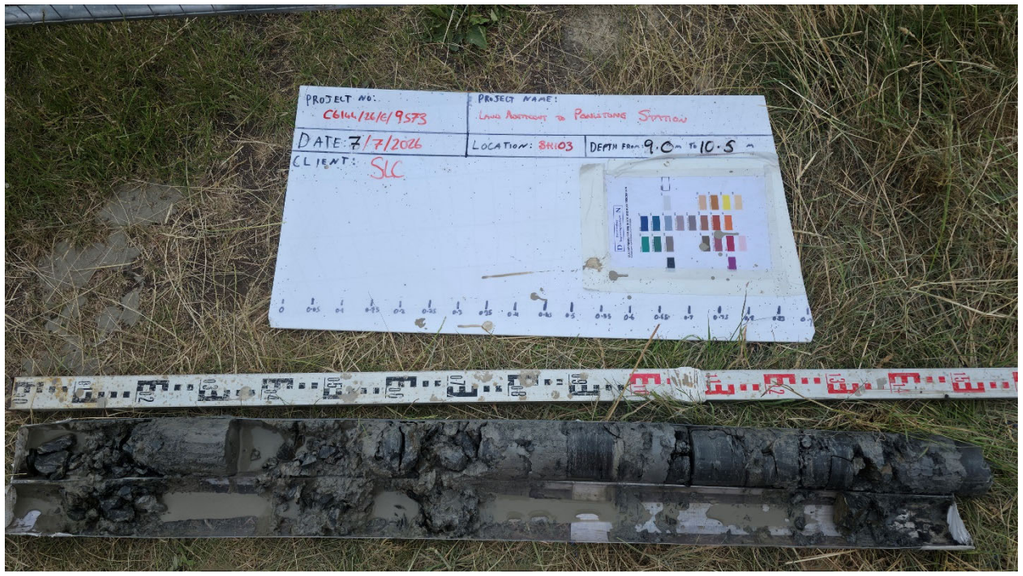


Photo 99: BH103 - 9.00m - 10.50m

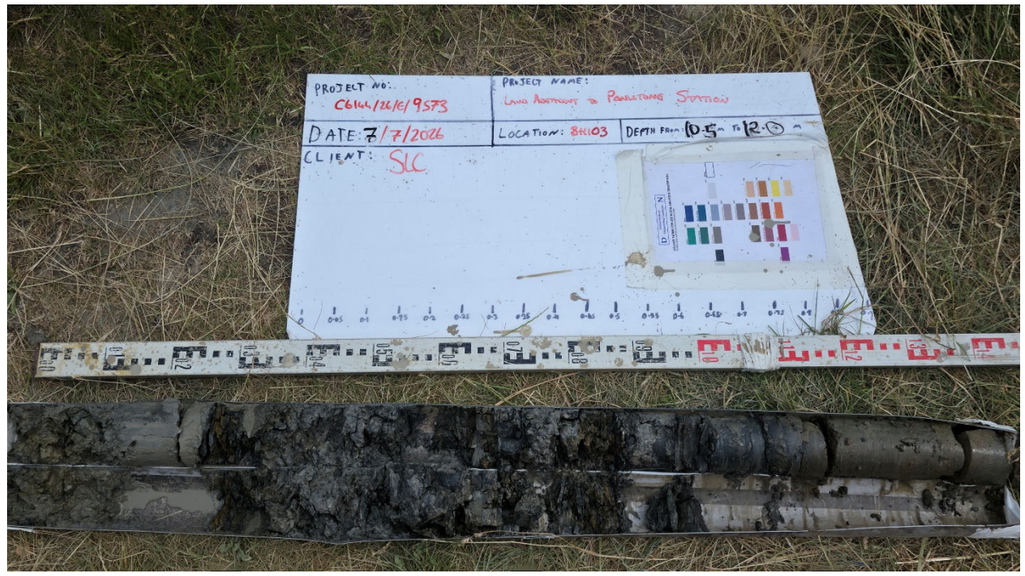


Photo 100: BH103 - 10.50m - 12.00m

Appendix E Human Health Screening Tables

HUMAN HEALTH SCREENING CRITERIA

Contaminant	Screen Value	Units	Screen Source
Asbestos			
Asbestos in Soil Detected/Not Detected	Presence	-	CAR 2012
General Inorganics			
pH (L099)	<5 or >9.5	pH units	UKDWS
Total Cyanide	160	mg/kg	USEPA Nov 2024 (CN-) Industrial Soil Value
Total Phenols			
Total Phenols (monohydric)	760	mg/kg	S4UL
Speciated PAHs			
Naphthalene	190	mg/kg	S4UL
Acenaphthylene	84000	mg/kg	S4UL
Acenaphthene	83000	mg/kg	S4UL
Fluorene	63000	mg/kg	S4UL
Phenanthrene	22000	mg/kg	S4UL
Anthracene	520000	mg/kg	S4UL
Fluoranthene	23000	mg/kg	S4UL
Pyrene	54000	mg/kg	S4UL
Benzo(a)anthracene	170	mg/kg	S4UL
Chrysene	350	mg/kg	S4UL
Benzo(b)fluoranthene	44	mg/kg	S4UL
Benzo(k)fluoranthene	1200	mg/kg	S4UL
Benzo(a)pyrene	35	mg/kg	S4UL
Indeno(1,2,3-cd)pyrene	500	mg/kg	S4UL
Dibenz(a,h)anthracene	3.5	mg/kg	S4UL
Benzo(ghi)perylene	3900	mg/kg	S4UL
Heavy Metals / Metalloids			
Antimony	7500	mg/kg	EIC/AGS/CL:AIRE
Arsenic	640	mg/kg	S4UL
Beryllium	12	mg/kg	S4UL
Boron (water soluble)	240000	mg/kg	S4UL
Cadmium	190	mg/kg	S4UL
Chromium	8600	mg/kg	S4UL
Copper	68000	mg/kg	S4UL
Lead	2300	mg/kg	C4SL
Mercury	58	mg/kg	S4UL
Nickel	980	mg/kg	S4UL
Vanadium	9000	mg/kg	S4UL
Zinc	730000	mg/kg	S4UL

HUMAN HEALTH SCREENING CRITERIA

Contaminant	Screen Value	Units	Screen Source
Petroleum Hydrocarbons			
TPHCWG - Aliphatic >EC5 - EC6	3200	mg/kg	S4UL
TPHCWG - Aliphatic >EC6 - EC8	7800	mg/kg	S4UL
TPHCWG - Aliphatic >EC8 - EC10	2000	mg/kg	S4UL
TPHCWG - Aliphatic >EC10 - EC12	9700	mg/kg	S4UL
TPHCWG - Aliphatic >EC12 - EC16	59000	mg/kg	S4UL
TPHCWG - Aliphatic >EC16 - EC21	1600000	mg/kg	S4UL
TPHCWG - Aliphatic >EC21 - EC35	1600000	mg/kg	S4UL
TPHCWG - Aliphatic >EC35 - EC44	1600000	mg/kg	S4UL
TPHCWG - Aliphatic >EC5 - EC35	2000	mg/kg	S4UL (most stringent of all aliphatic bands)
TPHCWG - Aliphatic >EC5 - EC44	2000	mg/kg	S4UL (most stringent of all aliphatic bands)
TPHCWG - Aromatic >EC5 - EC7	26000	mg/kg	S4UL
TPHCWG - Aromatic >EC7 - EC8	56000	mg/kg	S4UL
TPHCWG - Aromatic >EC8 - EC10	3500	mg/kg	S4UL
TPHCWG - Aromatic >EC10 - EC12	16000	mg/kg	S4UL
TPHCWG - Aromatic >EC12 - EC16	36000	mg/kg	S4UL
TPHCWG - Aromatic >EC16 - EC21	28000	mg/kg	S4UL
TPHCWG - Aromatic >EC21 - EC35	28000	mg/kg	S4UL
TPHCWG - Aromatic >EC35 - EC44	28000	mg/kg	S4UL
TPHCWG - Aromatic >EC5 - EC35	3500	mg/kg	S4UL (most stringent of all aromatic bands)
TPHCWG - Aromatic >EC5 - EC44	3500	mg/kg	S4UL (most stringent of all aromatic bands)
VOCs			
MTBE (Methyl Tertiary Butyl Ether)	7900	mg/kg	EIC/AGS/CL:AIRE
Benzene	27	mg/kg	S4UL
Toluene	56000	mg/kg	S4UL
BTEX & MTBE			
MTBE (Methyl Tertiary Butyl Ether)	7900	mg/kg	EIC/AGS/CL:AIRE
Benzene	27	mg/kg	S4UL
Toluene	56000	mg/kg	S4UL
Ethylbenzene	5700	mg/kg	S4UL
p & m-xylene	5900	mg/kg	S4UL
o-Xylene	6600	mg/kg	S4UL

HUMAN HEALTH SCREENING CRITERIA

Contaminant	Screen Value	Units	Screen Source
SVOCs			
Phenol	760	mg/kg	S4UL
2-Methylnaphthalene	190	mg/kg	S4UL Naphthalene as surrofate
Dibenzofuran	1200	mg/kg	USEPA
Anthraquinone	57	mg/kg	USEPA
Butyl benzyl phthalate	940000	mg/kg	EIC/AGS/CL:AIRE
PCBs			
PCB Congener 077	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 081	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 105	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 114	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 118	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 123	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 126	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 156	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 157	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 167	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 169	0.24	mg/kg	From AECOM Grenfell Tower report
PCB Congener 189	0.24	mg/kg	From AECOM Grenfell Tower report
Total PCBs	0.24	mg/kg	From AECOM Grenfell Tower report

HUMAN HEALTH SCREENING TABLE

Sample Reference												TP204	TP204	TP208	TP208	TP203	TP203	TP207	TP207	BH101	BH101	BH101	BH102	BH103	TP201	TP201	TP202	TP202	TP205	TP205	TP209	TP209
Depth (m)												0.00-0.20	0.50-1.00	0.00-0.40	0.60-1.00	0.10-0.40	0.60-1.00	0.00-0.70	0.70-1.00	0.00-0.20	0.40-0.60	0.80-1.00	0.65-0.90	0.80-1.00	0.00-0.50	1.00-1.50	0.00-0.50	0.75-1.25	0.00-0.25	1.00-1.60	0.00-0.32	1.00-1.50
Date Sampled												09/07/2026	09/07/2026	09/07/2026	09/07/2026	08/07/2026	08/07/2026	08/07/2026	08/07/2026	01/07/2026	01/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026	24/07/2026
Determinand	Units	Test Limit of detection	Test Accredited on Status	Minimum	Mean	Maximum	Count (no. of tests)	Screen Value	Screen Source	Number Exceeding Screen																						
Asbestos																																
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	NA	NA	NA	18	Presence	CAR 2012	0	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected				Notdetected	Notdetected	Notdetected	Notdetected	Notdetected	Notdetected	Notdetected	Notdetected
General Inorganics																																
pH (L099)	pH Units	N/A	MCERTS	6.1	7.42	8.7	21	<5 or >9.5	UKDWS	0	8.7	7.2	6.4	7	7.5	7.5	7.5	6.5	8.6	7.3	6.1	7.6	8.2	7.6	8	7.4	7.8	7.5	7.4	7.4	6.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	18	160	USEPA	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols																																
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	18	760	S4UL	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs																																
Naphthalene	mg/kg	0.05	MCERTS	0.47	1.5	3.8	8	190	S4UL	0	1.1		3.8		1		0.94							0.99		2.6		0.47		1.1	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.131	0.22	8	84000	S4UL	0	0.1		0.2		0.08		0.19							< 0.05		0.08		0.05		0.22	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.306	1.1	8	83000	S4UL	0	0.27		1.1		0.14		0.17							0.1		0.2		< 0.05		0.16	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.249	0.74	8	63000	S4UL	0	0.22		0.74		0.14		0.15							0.09		0.21		< 0.05		0.19	
Phenanthrene	mg/kg	0.05	MCERTS	0.68	2.84	7.7	8	22000	S4UL	0	2.9		7.7		2		2							1.5		2.9		0.68		3	
Anthracene	mg/kg	0.05	MCERTS	0.17	0.581	1.3	8	520000	S4UL	0	0.69		1.3		0.49		0.49							0.27		0.45		0.17		0.79	
Fluoranthene	mg/kg	0.05	MCERTS	0.96	4.01	9.9	8	23000	S4UL	0	4.3		9.9		2.8		3							1.8		3.2		0.96		6.1	
Pyrene	mg/kg	0.05	MCERTS	0.86	3.72	9.1	8	54000	S4UL	0	4.1		9.1		2.7		2.8							1.6		3		0.86		5.6	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.63	2.20	5.2	8	170	S4UL	0	2.7		5.2		1.6		1.6							0.83		1.8		0.63		3.2	
Chrysene	mg/kg	0.05	MCERTS	0.72	2.44	5.7	8	350	S4UL	0	3.1		5.7		1.8		1.6							1.2		1.9		0.72		3.5	
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.89	2.87	6.7	8	44	S4UL	0	4.1		6.7		2		1.8							1.3		2		0.89		4.2	
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.4	1.08	2.1	8	1200	S4UL	0	1.3		2.1		0.72		0.91							0.6		0.74		0.4		1.9	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.71	2.09	4.6	8	35	S4UL	0	3		4.6		1.3		1.4							0.79		1.4		0.71		3.5	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.48	1.14	2.4	8	500	S4UL	0	1.7		2.4		0.72		0.8							0.52		0.69		0.48		1.8	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.13	0.310	0.65	8	3.5	S4UL	0	0.43		0.65		0.2		0.18							0.17		0.2		0.13		0.52	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.53	1.27	2.7	8	3900	S4UL	0	2		2.7		0.74		0.81							0.56		0.72		0.53		2.1	
Heavy Metals / Metalloids																																
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1.0	9.38	17	18	7500	EIC/AGS/CL:AIRE		17	< 1.0	17	< 1.0	11	3.2	9.3	< 1.0	13	3.6				9.1	4.3	17	4.9	7.2	4.8	16	3.3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.2	22.0	52	18	640	S4UL	0	42	11	52	11	32	11	26	6.3	22	9.7				24	13	41	12	18	14	46	5.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1	1.37	2	18	12	S4UL	0	2	1.1	1.8	1.2	1.8	1.1	1.4	1.3	1.8	1.3				1	1.1	1.7	1	1.2	1.1	1.5	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.521	0.8	18	240000	S4UL	0	0.5	0.2	0.6	< 0.2	0.4	0.3	0.4	< 0.2	0.3	< 0.2				0.6	0.6	0.7	0.6	< 0.2	0.7	0.8	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.557	0.8	18	190	S4UL	0	0.7	< 0.2	0.6	< 0.2	0.4	< 0.2	0.3	< 0.2	0.5	< 0.2				< 0.2	< 0.2	0.8	< 0.2	< 0.2	< 0.2	0.6	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	32.2	91	18	8600	S4UL	0	68	26	25	23	21	27	21	27	91	36				22	30	23	25	18	26	39	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	167	460	18	68000	S4UL	0	270	54	460	110	280	59	170	43	150	44				190	80	380	76	200	66	320	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	113	380	18	2300	C4SL	0	380	32	380	46	120	25	180	38	89	27				87	38	130	33	59	35	320	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.600	0.6	18	58	S4UL	0	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3				< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.6	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	39.0	51	18	980	S4UL	0	51	39	49	35	39	39	34	39	32	42				32	40	39	39	36	37	39	41
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	39.2	69	18	9000	S4UL	0	69	29	50	28	52	28	34	26	66	28				36	31	51	28	38	29	53	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	69	110	170	18	730000	S4UL	0	130	88	130	100	110	69	130	110	120	110				99	96	140	100	81	87	170	110
Petroleum Hydrocarbons																																
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	8	3200	S4UL	0	< 0.010		< 0.010		< 0.010		< 0.010							< 0.010		< 0.010		< 0.010		< 0.010	
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	8	7800	S4UL	0	< 0.010		< 0.010		< 0.010		< 0.010							< 0.010		< 0.010		< 0.010		< 0.010	
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	8	2000	S4UL	0	< 0.010		< 0.010		< 0.010		< 0.010							< 0.010		< 0.010		< 0.010		< 0.010	
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	1.50	1.5	8	9700	S4UL	0	< 1.0		1.5		< 1.0		< 1.0							< 1.0		< 1.0		< 1.0		< 1.0	
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	5.40	5.4	8	59000	S4UL	0	< 2.0		5.4		< 2.0		< 2.0							< 2.0		< 2.0		< 2.0		< 2.0	
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	17.0	21	8	1600000	S4UL	0	< 8.0		13		< 8.0		< 8.0							< 8.0		< 8.0		< 8.0		21	
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	14	75.7	250	8	1600000	S4UL	0	14		100		35		39							33		59		< 8.0		250	
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	24.3	45	8	1600000	S4UL	0	< 8.4		28		< 8.4		< 8.4							9.2		15		< 8.4		45	
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	81.4	270	8	2000	S4UL (most stringent of bands)	0	14		120		35		39							33		59		< 10		270	
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	94.9	310	8	2000	S4UL (most stringent of bands)	0	14		150		35		39							42		74		< 10		310	
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	8	26000	S4UL	0	< 0.010		< 0.010		< 0.010		< 0.010							< 0.010		< 0.010		< 0.010		< 0.010	
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	8	56000	S4UL	0	< 0.010		< 0.010		< 0.010		< 0.010							< 0.010		< 0.010		< 0.010		< 0.010	
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	8	3500	S4UL	0	< 0.020		< 0.020		< 0.020		< 0.020							< 0.020		< 0.020		< 0.020		< 0.020	
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	8	16000	S4UL	0	< 1.0		< 1.0		< 1.0		< 1.0							< 1.0		< 1.0		< 1.0		< 1.0	
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	2.60	3	8	36000	S4UL	0	2.2		3		< 2.0		< 2.0							< 2.0		< 2.0		< 2.0		< 2.0	
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	13.7	17	8	28000	S4UL	0	11		13		< 10		< 10							< 10		< 10		< 10		17	
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	41.5	120	8	28000	S4UL	0	30		48		< 10		18							14		19		< 10		120	
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	< 8.4	20.0	38	8	28000	S4UL	0	10		12		< 8.4		< 8.4							< 8.4		< 8.4		< 8.4		38	
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	49.7	140	8	3500	S4UL (most stringent of bands)	0	43		64		< 10		18							14		19		< 10		140	
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	58.3	170	8	3500	S4UL (most stringent of bands)	0	53		76		< 10		18							14		19		< 10		170	
VOCs																																
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	8	7900000	EIC/AGS/CL:AIRE	0	< 5.0		< 5.0		< 5.0		< 5.0							< 5.0		< 5.0		< 5.0		< 5.0	
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	8	27000	S4UL	0	< 5.0		< 5.0		< 5.0		< 5.0							< 5.0		< 5.0		< 5.0		< 5.0	
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	8	56000000	S4UL	0	< 5.0		< 5.0		< 5.0		< 5.0							< 5.0		< 5.0		< 5.0		< 5.0	
BTEX & MTBE																																
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	6	7900	EIC/AGS/CL:AIRE	0	< 0.005				< 0.005		< 0.005									< 0.005		< 0.005		< 0.005	
SVOCs																																
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	6	760	S4UL	0	< 0.2				< 0.2		< 0.2									< 0.2		< 0.2		< 0.2	
2-Methylnaphthalene	mg/kg	0.1	NONE	0.5	1.28	2.8	6	190	S4UL Naphthalene as surrogate)	0	1.2				1		1									2.8		0.5		1.2	
Dibenzofuran	mg/kg	0.2	MCERTS	0.2	0.517	1	6	1200	USEPA	0	0.5				0.4		0.4									1		0.2		0.6	
Anthraquinone	mg/kg	0.3	NONE	< 0.3	0.35	0.4	6	57	USEPA	0	0.4				< 0.3		0.3									< 0.3		< 0.3		< 0.3	
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	1	1	6	940000	EIC/AGS/CL:AIRE	0	< 0.3				< 0.3		< 0.3									< 0.3		< 0.3		1	
PCBs																																
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.001				< 0.001		< 0.001		< 0.001	< 0.001						< 0.001					
Total PCBs	mg/kg	0.012	NONE	< 0.012	< 0.012	< 0.012	6	0.24	(CLEA SGV - AECOM Grenfell report)	0	< 0.012				< 0.012		< 0.012		< 0.012	< 0.012						< 0.012					