

TATA STEEL UK LIMITED

P-Fields

Draft Phase 2 Geo-environmental Investigation

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RSK GEOSCIENCES

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RSK GENERAL NOTES

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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1 INTRODUCTION

1.1 Commissioning

RSK Environment Limited (RSK) were engaged by Tata Steel UK Limited, (18 Grosvenor Place, London, SW1X 7HS.) herein referred to as the 'Client' to carry out a Phase II Geo-environmental Site Investigation at the P-Fields, Tata Steelworks, Port Talbot, SA13 2NG.

The works were undertaken by means of client terms and conditions, which forms the appointment between RSK and the Client.

References in this report to 'we', 'us', or 'our' shall mean RSK Geosciences as a trading name of RSK Environment Limited (company no.SC115530) at registered address 65; Sussex Street, Glasgow, G41 1DX.

The site location is provided in **Figure 1** and the site layout boundary to which this report refers is presented in **Figure 2**.

The report should be read and used in accordance with the limitations and constraints identified in the report text, and at **Appendix A – Service Constraints**.

1.2 Objectives

The site is being considered for development for a lay down area to facilitate the EAF project, full details are described in **Section 2.2** and **2.3** The proposed development is presented in **Appendix B**.

The objective of the work is:

- to identify any land contamination and/or geotechnical constraints to the proposed development and to support discharge of relevant planning conditions and relevant building control requirements and
- to identify the need for any additional investigation or remediation works to demonstrate that the site is suitable for its proposed use.

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1.3 Scope of works

The scope of works has designed by the Client and is in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in Land Contamination Risk Management (LCRM) (Environment Agency, 2021a) and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017).

The scope of the intrusive investigation has been designed in line with the recommendations of BS5930:2015+A1:2020 Code of practice for ground investigations (BSI, 2020), which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. It has also been developed in general accordance with BS 10175: 2011 + A2 2017. Ground gas assessment has been undertaken in general accordance with BS8576: 2013 and BS 8485:2015+A1:2019.

The scope of works for the assessment has included the following:

Intrusive investigation:

- Intrusive investigation works comprising:
    - Buried service detection and avoidance
    - Unexploded ordnance detection and avoidance
    - Excavation of fourteen trial pits
    - Drilling of two Light cable-percussive boreholes with rotary coring follow-on
    - Drilling of one Light cable-percussive borehole
    - Drilling of one Light cable-percussive borehole with rotary open hole follow-on
    - Installation of two combined groundwater/gas monitoring wells
- Measurement and recording of ground gas concentrations in two boreholes on six occasions at two monthly intervals
- Measurement and recording of groundwater depth in two boreholes on six occasions at two-monthly intervals
- Groundwater sampling for laboratory analysis from two boreholes on one occasion.
- Refinement of the conceptual site model (CSM) and completion of a generic quantitative risk assessment (GQRA) for relevant contaminant linkages
- Preparation of this factual and interpretative report.

1.4 Existing reports

In preparation of this report, the following reports detailing previous works at the site have been reviewed:

- RSK Report; 315075 R01 Project Cronus Preliminary Risk Assessment February 2022
- RSK Report; 315075 R03 Geoenvironmental Ground Investigation Report March 2022
- RSK Report; 315075 R04 Supplementary Phase 2 Geoenvironmental Ground Investigation Report October 2022

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- Wardell Armstrong 12 April 2024 ST20879-0001 Technical Note on Coal Mining Risk Assessment
- RSK Report; 315768 R01 (01) P-Fields Phase 1 Desk Study June 2024

Pertinent information from these reports has been summarised in **Section 3**. The findings of the Project Cronus site investigations (where they overlap with this P-Fields boundary) have been included within this report for the purpose of completeness and in order to enhance the overall assessment of the proposed development area.

1.5 Limitations

This report is subject to the RSK service constraints given in **Appendix A** and limitations that may be described below and throughout this document. The location of all exploratory positions were determined by the Client and discussed with RSK.

Due to ongoing activities and on site restrictions it was not possible to investigate all the areas contained within the redline boundary.

This report was prepared in accordance with good practice guidance at the time of issue. Consideration should be considered in the light of changes in legislation, statutory requirements, or industry practices subsequent to the date of issue.

The study aims to principally identify and assess the potential risks and liabilities associated with contamination of the ground, on and in the vicinity of the site. While this includes consideration of current operations and housekeeping on the site, the report does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

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2 SITE DETAILS

2.1 Site location

Site location details are presented in **Table 1** and a site location plan is provided on **Figure 1**.

Table 1 Site location details

Site name	P-Fields
Full site address and Post code	Port Talbot, SA13 2NG
National Grid reference (centre of site)	277645, 186306

2.2 Site description

The site boundary and current site layout are shown on **Figure 2**. The site is roughly square shaped with a spur to the northwest and occupies approximately 2.7 hectares at an approximate elevation of 6.00 m above ordnance datum (m AOD).

The site predominantly comprises areas laid to gravel and tarmac and is used as a laydown / storage area for large steel blocks as part of the steelworks slab yard. The southwestern part of the site hosts stockpiles of aggregate. There are areas of vegetation (grassed areas) with the majority located across the northwest part of the site. There are no existing buildings located within the site boundary.

2.3 Surrounding land uses

The Site is located within Port Talbot Steelworks, in a predominantly commercial and industrial setting. Immediate surrounding land uses are described in **Table 2**.

Table 2 Surrounding land uses

North	Morfa Colliery Memorial, unnamed access road and industrial steelworks (BOS Plant Office) located approximately 150 m from site.
East	Unnamed access road, Lower Mother Ditch (partially culverted drainage ditch), laydown area for steel block and industrial buildings further east.
South	Stockpiles of aggregates and lay down / storage areas. Further south are agricultural fields.
West	Unnamed access road and stockpile area of aggregates.

2.4 Proposed development plans

Based on available information, it is understood that the central section of the 2.7 hectare parcel of land will be redeveloped to comprise the installation and retention of concrete hardstanding for industrial use associated with the continued operations of the steelworks, and landscaping, green infrastructure and drainage works.

Proposed development drawings are shown in **Appendix B.**

2.5 Previous Report Summary

A summary of the Phase 1 Preliminary Risk Assessment (ref. 315609 R01 (02)) findings is presented below; the full report should be referred to for further details.

Information published by the British Geological Survey has indicated the following shown in **Table 3** sequence to be anticipated beneath the site:

Table 3 Site geology

Strata	Description	Estimated thickness
Anticipated Made Ground	Clay, silt, sand and gravel with low to high cobble content. Made up of reworked natural and anthropogenic material such as slag, brick, and concrete with occasional scraps of metal and other anthropogenic materials.	Variable. Up to 6 m.
Tidal Flat Deposits	Tidal Flat Deposits, including mud flat and sand flat deposits, are deposited on extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat.	Approx. 15 m
Glacial Deposits (Boulder Clay)	Gravelly clay with cobbles	Approximately 13 m.
Undifferentiated South Wales Coal Measures Formation	Coal-bearing mudstones/siltstones, and sandstones. Based on the interactive Coal Authority Map (accessed online), three coal seams (orientated in a northwest to southeast direction) are present across the site which are as follows: Upper Nine Feet – U 9 FT (formerly known as South Fawr seam), Lower Nine Feet – L 9 FT and Marine Band.	Up to 300 m

Based on available information, there are five (5 No.) BGS historical boreholes located within 250 m of the site. Two boreholes (Ref: SS78NE179 & SS78NE178) located within 180 m of the site have recorded peat deposits at depths of between 4.00 and 6.00 m depth. These boreholes were terminated at 3.96 m and 6.40 m depth.

A historical borehole (Ref: SS78NE58) located approximately 70 m northwest of the site is associated with the former Morfa Colliery (Grange Pit). The borehole has been recorded to significant depths of up to 371 m bgl. The borehole also confirms the presence of peat at shallow depths as well as the presence of several coal seams (including North Fawr, South Fawr, 4-FT, 6-FT and 9-FT).

Based on available historical information, it is understood that the site was occupied by the Morfa Colliery between 1847 and 1913 (when colliery workings ceased operations). The nearest mine entry

(formerly known as Grange Downcast Pit) is located approximately 70 m northwest of the site. The Grange Pit mine entry was known to extend to a depth of up to 365 m bgl and was the downcast ventilation shaft. The Abbot Upcast Pit mine entry is located approximately 120 m west of the site. It is understood that these two mine entries (shafts) would have been connected. Based on information from the Coal Authority Interactive Viewer, both mine entries have since been treated. A third mine entry (adjacent to the Abbot Pit) has also been recorded 125 m west of the site and has not been recorded as treated.

It should be noted that a Coal Mining Technical Note (Ref: ST20879001) was prepared by Wardell Armstrong in April 2024 which indicates that the risks associated with coal mining to any proposed development is considered to be low to moderate.

2.5.1 Potential sources of contamination

Potential sources of soil and groundwater contamination identified from current activities and the history of the site and surrounding area are presented in **Table 4**.

Table 4 Potential sources of soil and groundwater contamination

Potential sources	Contaminants of concern
On-site	
S1 Made ground (i.e. fill material)	Unknown fill material but potentially including brick, ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs) and asbestos.
S2 Current land use as steel block storage yard / stockpile area	Unknown material but potentially including ash and clinker and containing toxic and phytotoxic metals, inorganics and polycyclic aromatic hydrocarbons (PAHs).
S3 Former land uses (railway sidings and colliery workings)	Petroleum hydrocarbons, toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs) and asbestos.
Off-site	
S4 Industrial process associated within the wider steelworks to the north	Toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), hydrocarbon, BTEX.

2.5.2 Sensitive receptors and linking exposure/ migration pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- R1 future site users – industrial workers [oral, dermal and inhalation exposure with impacted soil, soil vapour and dust/fibres]
- R2 adjacent site users – industrial workers [migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation]
- R3 future buildings and services [direct contact with contaminated soils or groundwater and chemical attack]
- R4 surface water in the Bristol Channel [groundwater in secondary aquifer within superficial deposits and Lower Mother Ditch]

Potential linking pathways are show in brackets for each item above.

Groundwater has been considered as a pathway as opposed to a receptor on account of the historical and current industrial uses across the wider area. A degree of impact on the groundwater as a result of this regional land use is to be expected and hence the primary sensitive receptor is considered to be the surface water. Similarly, the Lower Mother Ditch which runs along the boundary of the site is understood to receive storm water from the site in addition to the condition of the culvert through the made ground being unknown. Based on this the Lower Mother Ditch has been considered a pathway as opposed to a receptor.

Please note that construction workers and future maintenance workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures according to the CDM Regulations.

Ecological receptors are only considered within the conceptual model in the context of statutory protected sites.

2.6 Potential ground gas linkages

2.6.1 Ground gas generation potential

Potential ground gas sources identified for the site and surrounding are shown in **Table 5**.

Table 5 Potential ground gas sources (excludes mine gas)

Potential sources	Indicative ground gas generation potential (CIEH, 2008)	Additional information
On-site		
S5 Natural soil strata with degradable organic content, e.g. alluvium, peat	Low	Peat has been recorded in previous BGS boreholes in close proximity to the site and is anticipated to be present.
S6 Made ground with low degradable organic content (e.g. up to 5% organic material and no easily degradable waste).	Very low	

Potential sources of ground gas generation have been identified therefore this potential issue has been taken forward.

2.6.2 Potential coal mine gas sources

The potentially sources of mine gas associated with the area of the site are as follows:

- desorption of gas from coal and rocks – predominantly methane
- oxidation of coal – carbon dioxide and oxygen depletion, also methane and ethane and carbon monoxide at higher temperatures

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The risk of these gases are considered to be low due to the age of the coal workings (greater than 50 years) and the shallow groundwater beneath the site and so the workings are likely to be flooded and not susceptible to oxidation.

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Table 6 Risk estimation for potentially complete contaminant linkages

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
Sources on site						
S1 Made ground **S2** Current land usage (steel block storage yard). **S3** Former land uses (railway sidings / colliery workings) **S4** Industrial process associated within the wider steelwork to the north	**R1** Future site users	**P1** Dermal contact, soil ingestion, dust and fibre inhalation, including vapour inhalation	Low	Medium	Moderate/low	Contaminants may be present in the made ground and shallow soils associated with past and current land developments. It is understood that the proposed development is likely to comprise hardstanding (concrete slab) and as such direct contact and dust generation will be limited. Furthermore, this will also limit the downward migration of contaminants. However, there may be a risk of surface migration of contamination into Lower Mother Ditch. Given the site's former and current surrounding development (steelworks) it is anticipated that the groundwater and nearby watercourses are already impacted to some degree.
	R2 Future adjacent site users – industrial workers	**P2** Migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation.	Unlikely	Mild	Very low	
	R3 Future proposed development	**P3** Direct contact with contaminated soils or groundwater and chemical attack	Likely	Medium	Moderate	
	R4 Surface water in the Bristol Channel	**P4** Groundwater in the secondary aquifer and Lower Mother Ditch outfall.	Low	Medium	Moderate/low	
S5 Natural soil strata with degradable organic content, e.g. alluvium, peat.	**R1** Future site users	Migration, accumulation and inhalation	Low	Medium	Moderate/low	Based on the Client's information, it is understood that no buildings have been proposed and, therefore, the risk of ground gas is considered to be low.

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Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
S6 Made Ground. **S7** Mine Gases	**R2** Future adjacent site users – industrial workers		Unlikely	Medium	Low	

Risk matrix		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low
	Very Unlikely	Low	Very Low	Negligible	Negligible

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Receptors (**R**) and the associated potentially complete contaminant linkages with a potential risk of moderate to low or higher comprise:

- **R1** future site users – industrial workers [oral, dermal and inhalation exposure with impacted soil, soil vapour and dust/fibres, ground gases]
- **R3** future buildings and services [direct contact with contaminated soils or groundwater and chemical attack]
- **R4** surface water in the Bristol Channel [dissolution followed by lateral migration in groundwater in secondary aquifer within superficial deposits]

In line with LCRM, these potentially complete contaminant linkages need to be assessed further through an appropriate scope of site investigation.

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3 SITE INVESTIGATION STRATEGY & METHODOLOGY

3.1 Introduction

RSK undertook site works and subsequent monitoring between May 2024 and November 2024. The positions of the exploratory holes were in accordance with the Scope and intended to provide an assessment of general ground conditions and contamination status of the site. All works were initially designed by the Client and subject to reviewed and amendment if required based upon the findings of the Preliminary Risk Assessment.

We have also included the site investigation and chemical test data from the previous works from Project Cronus work carried in in 2022 (where the sites overlap) for the purpose of a more complete assessment.

The ground investigations were carried out in general accordance with the recommendations of BS5930: 2015 Code of practice for ground investigations, which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. The exploratory holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1).

Prior to breaking ground each location was scanned using Ground Penetrating Radar (GPR), a CAT and Signal Generator and a hand excavated pit undertaken (boreholes only) in line with RSK's health and safety procedures.

The soil sampling and analysis strategy was designed to characterise each encountered soil strata and permit an assessment of the potential contaminant linkages identified. In addition, samples were taken to allow for geo-environmental testing to be undertaken.

Soils collected for laboratory analysis were placed in a variety of containers appropriate to the anticipated testing suite required. They were dispatched to the laboratory in cool boxes under chain of custody documentation. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

The investigation strategy involved a combination of targeted and non-targeted boreholes and trial pits.

3.2 Objectives

The specific objectives of the investigation were as follows:

- to establish the ground conditions underlying the site including the extent and thickness of any made ground
- to investigate specific potential sources of contamination identified in initial CSM and whether there are any complete contaminant linkages present.
- to determine groundwater depth
- to determine the ground gas regime underlying the site

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3.3 Selection of investigation methods

The techniques adopted for the investigation were chosen with consideration of the objectives and site constraints, which are described below.

Cable percussion drilling was chosen based on the targeted drill depth, the anticipated geology, requirement for in-situ geotechnical data, the opportunity to collect both disturbed and undisturbed samples and install monitoring wells. Rotary methods were adopted where required to achieve the required depth and/or to assess the nature of the coal seams beneath the site using a combination of open hole drilling technique and coring

This was supplemented by mechanically excavated trial pitting to obtain at a number of investigation locations and achieve greater visibility of the made ground.

Prior to conducting intrusive works, service plans were provided by the client and buried service clearance undertaken in line with RSK's health and safety procedures.

3.4 Investigation strategy

The ground investigation was carried out using intrusive ground investigation techniques in general accordance with the recommendations of BS5930:2015+A1:2020, which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. Whilst every attempt was made to record full details of the strata encountered in the boreholes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

The investigation strategy involved targeted and non-targeted boreholes and trial pits focussing on the development area.

The constraints to the investigation were as follows:

- On-going activities on site including slab movements that restricted access to exploratory hole locations
- Compacted and dense ground resulting in slow and difficult excavation of service avoidance pits

Details of the investigation locations, installations and rationale are presented in **Table 7**. An exploratory hole location plan is shown on **Figure 3**.

Table 7 Exploratory hole and monitoring well location rationale as carried out

Type	Location	Depth (m)	Installation	Rationale
Cable Percussive	BH316	3.00	NA	Terminated due to service encountered
Cable Percussive	BH316a	28.00	NA	Characterise the underlying strata, sequence and carry out in-situ testing
Cable Percussive & Rotary Cored	BH317	66.63	-	Coal mining investigation borehole to identify and describe the sequence of coal seams: Amman Rider and Yard.
Cable Percussive	BH323	3.40	NA	Terminated due to steel obstruction encountered

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Type	Location	Depth (m)	Installation	Rationale
Cable Percussive & Rotary Cored	BH332A	57.52	-	Coal mining investigation borehole to identify and describe the sequence of coal seams:
Cable Percussive & Rotary Cored	BH324	75.1	Groundwater / gas	Coal mining investigation borehole to identify and describe the sequence of coal seams: Upper 9 Feet, Lower 9 Feet and Bute
Trial pitting by mechanical excavator	TP306 TP309 TP310 TP311 TP312 TP317 TP323 TP324 TP364 TP365 TP366 TP368 TP369	-	NA	Characterise the underlying strata, sequence
*Trial pits-TP316 and TP394 were not carried out due to on-site restrictions.				

Table 8 Exploratory hole and monitoring well location rationale from Project Cronus Investigation works

Investigation type	Number	Designation	Monitoring well installation	Rationale examples below
Boreholes by rotary or cable percussive methods	3	BH1 BH205 BH206	Gas/ groundwater	To prove the geological succession beneath the site.
Trial-pits excavated by hand/mechanical excavator	6	TP4 TP11 TP211 TP212 TP213 TP217	n/a	To accurately log the upper strata in targeted and non-targeted locations beneath the site.

3.4.1 Implementation of investigation works

The exploratory holes were logged by an engineer in general accordance with the recommendations of BS5930:2015+A1:2020 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1).

The monitoring well construction and associated response zones are detailed on the exploratory hole records in **Appendix D**. The response zones were installed to target identified gas generation

sources or migration pathways detailed in the initial preliminary CSM as well as groundwater as encountered during the investigation.

The soil sampling and analysis strategy was designed to characterise each encountered soil strata and permit an assessment of the potential contaminant linkages identified. In addition, samples were taken to allow for geo-environmental testing to be undertaken.

Soils collected for laboratory analysis were placed in a variety of containers appropriate to the anticipated testing suite required. They were dispatched to the laboratory in cool boxes under chain of custody documentation. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

Selected samples were placed in polythene bags for headspace screening with a photo-ionisation detector (PID) fitted with a 10.6 eV bulb The PID screening results are presented on the exploratory hole records.

3.5 Monitoring programme

3.5.1 Ground gas monitoring

In line with the initial CSM, response zones were installed to target the sources or pathways as detailed.

Five monitoring rounds have been undertaken to date to provide data to support refining of the CSM. The number of monitoring rounds undertaken is in general accordance with the decision matrix presented as **Figure 6** of BS8576 for a very low/low source generation potential and low sensitivity development.

A calibrated infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million.

Initial and steady state concentrations were recorded. In addition, during the first monitoring round, all wells were screened with a PID to establish if there are any interferences and cross-sensitivity of other hydrocarbons with the infrared gas meter.

The atmospheric pressure before and during monitoring, together with the weather conditions, were recorded. The monitoring included periods of falling atmospheric pressures and falling tides.

All ground gas monitoring results together with the temporal conditions are contained within **Appendix F**. Equipment calibration certificates are available on request.

3.5.2 Groundwater monitoring and sampling

At the time of writing five rounds of groundwater monitoring were undertaken on a weekly basis which will increase to a monthly frequency. One round of groundwater sampling was carried out. The monitoring field records are provided in **Appendix E.**

Development of the monitoring wells following installation was undertaken comprising the removal of three well volumes using a pump.

Groundwater samples were retrieved using low flow sampling methods where appropriate in general accordance with British Standard 5667 (2009).

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Water samples were dispatched to the laboratory in cool boxes under chain of custody documentation.

3.6 Laboratory testing

Laboratory testing was undertaken at a UKAS accredited laboratory with ISO17025 and MCERTS accredited test methods were specified where applicable for contamination testing and as shown in the laboratory test certificates appended.

3.6.1 Chemical analysis of soil samples

The soil sampling strategy was designed to characterise made ground and natural strata and the potential for contaminant migration from relevant sources of identified within the preliminary CSM.

The programme of chemical tests undertaken on soil samples obtained from the intrusive investigation is presented in **Table 9** with the laboratory testing results contained in **Appendix F.**

Table 9 Summary of chemical testing of soil samples

Stratum	Tests undertaken	No. of Tests
Made ground	Suite E – Heavy metals, Hex Chromium, pH, Water soluble sulphate (SO4), Organic matter, Total petroleum hydrocarbons, Speciated polyaromatic hydrocarbons (USEPA 16), Phenol, Cyanide (total), Asbestos ID,	9
Natural	Suite E – Heavy metals, Hex Chromium, pH, Water soluble sulphate (SO4), Organic matter, Total petroleum hydrocarbons, Speciated polyaromatic hydrocarbons (USEPA 16), Phenol, Cyanide (total), Asbestos ID,	2

Table 10 Summary of previously undertaken chemical testing of soil samples from Project Cronus

Stratum	Tests undertaken	No. of tests
Made ground	Asbestos screening and ID	10
	Heavy metals	8
	Speciated PAHs	8
	TPH CWG	7
	SVOCS and VOCS	3

3.6.2 Geotechnical analysis of soils

Where appropriate, disturbed, bulk and undisturbed soil samples were taken for geotechnical classification testing with the depth and nature of samples detailed within the exploratory hole records.

The programme of geotechnical tests undertaken on samples obtained from the intrusive investigation is reported under a separate report

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3.6.3 Chemical analysis of groundwater

Groundwater samples were collected in containers appropriate to the anticipated testing suite required. The containers were filled to capacity and placed in a cool box to minimise volatilisation.

Chemical testing undertaken on water samples obtained during the monitoring programme is presented in **Table 11**. Laboratory testing results are provided in **Appendix G**.

Table 11 Summary of chemical testing of water samples

Sample type	Tests undertaken	No. of tests
Groundwater	Suite F- Heavy metals, pH, Water soluble sulphate (SO4), Organic matter, Total petroleum hydrocarbons, Speciated polyaromatic hydrocarbons (USEPA 16), Phenol, Cyanide (total), Asbestos ID, Hex Chromium	6

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4 SITE INVESTIGATION FACTUAL FINDINGS

The results of the intrusive investigation and subsequent geo-environmental laboratory analysis undertaken are detailed below.

4.1 Ground conditions encountered

The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil and groundwater, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in **Appendix D**. Copies of the logs from Project Cronus are also included but the ground conditions have not been summarised below.

4.2 P-Fields

The exploratory holes in P-Fields showed a variable thickness of made ground over superficial deposits with South Wales Coal Measures encountered at depth. This corresponds to published geological maps and previous site investigations carried out by RSK; previous exploratory holes have been included within the below sections for completeness.

4.2.1 Made ground

Made ground was encountered predominantly from ground level at all locations up to a maximum thickness of 6.10 mbgl (BH323a). This summarised in **Table 12**

Made ground frequently contained gravel/cobbles of slag and varying amounts of other anthropogenic materials such as ash, slag, brick, ash, metal, clinker, tarmac and concrete

Table 12 Summary of Made Ground

Exploratory Location	Depth (m)	Thickness (m)	Observations/obstructions
BH316	0.00	3.00	Concrete obstruction/inspection chamber encountered at 3.00 m bgl.
BH316a	0.00	3.30	Slight hydrocarbon odour.
BH317	0.00	4.10	Gravel and sand containing brick, slag and some coal and wood
BH323	0.0	3.40	Refused at 3.40 m bgl
BH323a	0.00	6.10	Gravel and cobbles of slag and mudstone with depth
BH324	0.00	4.00	Gravel and sand containing brick, slag and some mudstone and occasional slag cobbles

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4.2.2 Blown Sand

A layer of fine to medium sand was encountered directly beneath the made ground, up to a maximum thickness of 3.30mbgl. A summary is shown in **Table 13** below. Recorded SPT N-values ranged between 5 and 10.

Table 13 Summary of Blown sand Deposits across Area 2

Exploratory Location	Depth (m)	Thickness (m)	Observations
BH316a	3.30	4.40	Medium dense greyish brown fine to medium sand

4.2.3 Tidal Flat Deposits

Tidal Flat Deposits were often recorded as interbedded layers of dark organic silt, clay, peat and sand of varying strengths and densities to a maximum thickness of 9.60m (BH317). A summary is shown in **Table 14** below. SPT N-Values ranged between 0 and 10.

Table 14 Summary of Tidal Flat Deposits

Exploratory Location	Depth (m)	Thickness (m)	Observations
BH316a	7.70	8.30	Soft organic clay with occasional sand
BH317	4.10	9.60	Soft clay with occasional sand
BH319	4.50	12.00	Very soft clay
BH323a	6.10	3.90	Soft silty clay
BH324	4.00	9.50	Loose clayey sand, very soft to soft organic silty clay and peat.

As stated above, peat was encountered within the Tidal Flat Deposits as summarised in **Table 15** below.

Table 15 Summary of peat

Exploratory Location	Depth (m)	Thickness (m)	Observations
BH317	8.90	0.30	Soft dark brown peat- strong organic odour
BH323a	8.50	1.50	Soft dark brown fibrous peat
BH324	8.60	0.50	Soft dark brown and black firm to spongey, clayey slightly sandy pseudo fibrous peat

4.2.4 Glaciofluvial Deposits

Glaciofluvial deposits were encountered beneath the Tidal Flat Deposits, at depths of between 10.00 and 16.00 m bgl and predominantly contained gravels and boulders. A summary is shown in **Table 16** below. N-Values were generally in the 30s to 50s.

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Table 16 Summary of Glaciofluvial Deposits across Area 2

Exploratory Location	Depth (m)	Thickness (m)	Observations
BH316a	16.00	12.22	Dense sandy clayey gravel with high cobble content of mudstone/siltstone and sandstone
BH317	14.00	9.50	Dense sand becoming sandy clayey gravel with high cobble content of mudstone/siltstone and sandstone
BH323A	10.00	15.20	Very dense gravel and cobbles-clay layer present between 17.50 and 21.00 m bgl.
BH324	13.50	8.50	Dense gravel and cobbles of mudstone and sandstone. Firm to stiff very gravelly clay with high cobble content.

4.2.5 South Wales Coal Measures

The South Wales Coal Measures were encountered as mudstone and coal at depths of between 17.50 m (weathered) (BH323) and 22.00 m (BH324). Coal was present as thin bands in both boreholes. A summary is shown in **Table 17** below.

Table 17 Summary of South Wales Coal Measures

Exploratory Location	Depth (m)	Thickness (m)	Observations (incl coal)
BH323	17.50	>40.02	Weathered clay becoming granular- rock head encountered at 25.20 m. Coal bands between 31.30 and 31.70 m, 32.60 and 33.30 m, 36.20 and 36.80 m and 55.00 and 55.60 m
BH324	22.00	53.10 (base not proven)	Interbedded mudstone and siltstone/fine sandstone. Coal bands between 26.50-26.65 m, 27.40-29.50 m, 44.50-46.35 m, 53.70-54.00 m and 73.70-74.50 m

4.2.6 Visual/olfactory evidence of soil contamination

A slight hydrocarbon odour was recorded in BH316a between 1.50-3.30 m bgl. Both visual and olfactory evidence of contamination was noted in the area of the DLS regeneration yard. During Project Cronus, possible visual contamination was also noted within made ground deposits at 5.80 m bgl. A PID meter was used during the investigation, all readings are reported in the exploratory logs. Visual asbestos was not encountered in any of the exploratory holes

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4.3 Groundwater

4.3.1 Groundwater encountered during intrusive works

Groundwater was encountered during these intrusive works as summarised in **Table 18**. The groundwater water encountered during Project Cronus is summarised in **Table 19**.

Table 18 Summary of groundwater results observed during fieldwork

Exploratory Location	Strata	Groundwater depth (m)	Comments
BH316a	Made ground	2.10	Seepage
BH317	Made ground	2.30	Strike
BH323	Made ground	2.50	Strike
BH324	Made ground	2.00	Seepage

Table 19 Summary of groundwater results observed during fieldworks from Project Cronus investigation

Exploratory Location	Strata	Groundwater depth	Comments
TP11	Made ground	2.20	Seepage
TP211	Made ground	1.00	Seepage

4.3.2 Groundwater encountered during monitoring

Resting groundwater levels recorded during the monitoring programme are summarised in **Table 20**. Field records are provided in **Appendix E.**

Table 20 Summary of groundwater monitoring results

Monitoring well	Response zone stratum	TOC elevation (m AOD)	Depth to water (mb TOC)	Groundwater elevation (m AOD) – min.	Groundwater elevation (m AOD) – max.
BH317	Tidal Flat Deposits	6.761	2.45	2.15	4.311
BH324	Tidal Flat Deposits	5.358	1.26	1.26	4.098
Notes	*TOC- Top of cover* *AOD- Above Ordnance Datum*				

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The findings reflect the groundwater table in the Tidal Flat Deposits, which was recorded at an elevation of 1.26 m to 4.098 m AOD. The groundwater monitoring results from Project Cronus are summarised in **Table 21** below.

Table 21 Summary of groundwater monitoring results from Project Cronus

Monitoring well	Response zone stratum	Min Depth to water (mb TOC)	Max Depth to water (mb TOC)
BH1 (shallow)	Made ground	2.05	2.18
BH1 (deep)	Natural ground	2.05	2.18
BH205	Natural ground	2.29	2.44
Notes	*TOC- Top of cover* *AOD- Above Ordnance Datum*		

It should be noted that groundwater levels might fluctuate for a number of reasons including seasonal and tidal variations that is not captured in the above monitoring programme. From continual monitoring carried out during the supplementary work from Project Cronus, tidal patterns were identified, these are likely to be similar in the areas of the proposed development due to the strata likely being in hydraulic continuity.

4.3.3 Visual/olfactory evidence of groundwater contamination

No visual/olfactory evidence of contamination in groundwater was noted during well development, monitoring and sampling.

4.4 Chemical laboratory results

The soil and groundwater testing results are presented in **Appendix F** and **G**.

4.5 Geotechnical laboratory results

Geotechnical considerations will be reported under a separate report.

4.6 Ground gas monitoring

The results of the ground gas monitoring and testing carried out to date are provided in **Appendix E.**

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5 GEO-ENVIRONMENTAL ASSESSMENT

5.1 Refinement of initial CSM

The nature, composition and thickness of Made ground encountered in the areas of previous developments encountered was as anticipated from the initial CSM. However, no complete contaminant linkages with a risk of moderate or higher were identified. The findings of this investigation are in line with our initial CSM and the findings of the previous site investigation works and as such no refinement of the CSM is considered warranted.

To assess the general ground conditions analysis of soils were undertaken by RSK as part of the Phase 2 investigation.

5.2 Linkages for assessment

As described in LCRM (Environment Agency, 2021), there are two stages of quantitative risk assessment (QRA), Tier 2 generic (GQRA) and Tier 3 detailed (DQRA). The GQRA comprises the comparison of soil, groundwater, soil gas and / or ground gas results with generic assessment criteria (GAC) that are appropriate to the linkage being assessed. This comparison can be undertaken directly against the laboratory results or following statistical analysis depending upon the sampling procedure that was adopted. This assessment relates to LCRM Stage 1, Tier 2 generic quantitative risk assessment

5.3 Generic quantitative risk assessment

The receptors (**R**) and the associated potentially complete contaminant linkages that require further assessment are detailed below:

- **R1** future site users – industrial workers [**H1, H2 and H3** oral, dermal and inhalation exposure with impacted soil, soil vapour and dust/fibres, ground gases]
- **R3** future buildings and services [direct contact with contaminated soils or groundwater and chemical attack]
- **R4** Surface water in the Bristol Channel [dissolution followed by lateral migration in groundwater in secondary aquifer within superficial deposits and the Lower Mother Ditch]

The potentially complete contaminant linkages that require further assessment and the methodology of assessment are presented in each section. R3 will be reported and assessed with the separately reported geotechnical design report (GDR).

5.4 Methodology and assessment of human health linkages

The linkages pertaining to human exposure to chemical contamination are as follows:

- H1. Oral, dermal and inhalation exposure with impacted soil, soil vapour and dust by future site users
- H2. Inhalation exposure of future site users to asbestos fibres

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5.4.1 H1. Oral, dermal and inhalation exposure with impacted soil by future occupants/site users

Soil contaminant concentrations have been compared against Human health GAC for a commercial land use based on 1% soil organic matter in **Appendix J**.

In order to assess the soil results against the appropriate GAC, the soil results have been split into appropriate data sets relevant to the material identified on site.

The datasets being considered in the assessment are:

- data set 1 Made Ground
- data set 2 Natural Ground

The SOM content of soils has been assumed to be 1% based on the most conservative value available for this assessment. It should be noted that the < symbol has been removed from the calculation sheet where the results recorded are lower than the LOD.

In line with the C4SL project methodology (CL:AIRE, 2014), the assessment of soil contaminant concentrations of genotoxic PAHs (benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(ah)anthracene, indeno(123-cd)pyrene and benzo(ghi)perylene) has been undertaken using benzo(a)pyrene as a surrogate marker. As noted by the Health Protection Agency (now UK Health Security Agency) (2010), most PAHs in soils studied in nationwide sampling exercises from urban and non-urban areas exhibited PAH ratios with the upper and lower bounds of the underlying toxicological study. Therefore, an unacceptable risk from genotoxic PAHs is only considered to be likely if the respective benzo(a)pyrene concentrations exceed the relevant GAC.

All made ground results have been compared with the commercial GAC. A soil organic matter (SOM) of 1% has been selected. The soil screening output spreadsheet is presented as **Appendix J**. The exceedances in GACS are summarised in **Table 23**.

Table 22 Data summary table- made ground

Determinand	GAC (mg/kg)	No of exceedances	Maximum concentration (mg/kg)	
			Value	Location - depth (m bgl)
Dibenz(a,h)anthracene	3.5	1	3.9	TP309 – 0.40

No exceedances were noted in the natural soils during this investigation.

5.4.1.1 Summary

On the basis of the above assessment, no exceedances were noted in the natural soils during this current investigation.

It is considered that there are potential risks associated with the soil contamination within shallow made ground. It is however noted that contact is unlikely given the majority proposed development will provide a barrier between the source and receptor by virtue of the concrete slab and proposed engineered material being placed. The exceedance noted above falls just beyond the boundary of the proposed development.

5.4.2 H2. Inhalation exposure of future occupants/site users to asbestos fibres

Based on the nine samples screened for asbestos, no asbestos has been detected.

In addition, during the previous Cronus investigation, nine out of eleven samples were tested and found to contain no asbestos. However, 14% bulk fibres were recorded within a fragment of chrysotile cement in TP4 at 1.40 m bgl and loose fibres of chrysotile were also found in a sample from TP211 at 0.10 m bgl.

Based on the above, a potential linkage is confirmed which could present an unacceptable risk to future end workers and construction workers if not mitigated.

Asbestos was not recorded within samples of natural soils.

5.5 G1: Methodology and assessment of ground gas-related linkages

5.5.1 Appropriate guidance

The risks to development from ground gases have been assessed in accordance with BS8485:2015+A1:2019 (BS8485), which provides guidance on ground gas (methane and carbon dioxide) characterisation and hazard assessment, as well as providing a framework for the prescription of protection measures within new buildings.

The process involves characterising the gas hazard from combining the qualitative assessment of risk (using the CSM) with ground investigation data so that a 'characteristic situation' (CS) can be derived for the site or zones within the site. Characteristic situations range from CS1 to CS6, the higher the CS, the higher the hazard potential. Gas protection measures within new buildings can be prescribed using a point scoring system, taking into consideration the CS and the proposed building type.

BS8485 indicates that the gas hazard can be characterised using the following methods:

- an empirical semi-quantitative approach using gas monitoring data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (Wilson and Card approach).
- an empirical semi-quantitative approach using TOC data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (CL:AIRE RB17 approach),

Based on the conceptual site model, Wilson and Card approach has been used to characterise the gas hazard and aid provision of advice on the protective measures that may be required within buildings at the site.

5.5.2 Summary of the refined CSM for ground gas

In the assessment of risks and selection of appropriate mitigation measures, BS8485 highlights the importance of the conceptual model. In summary, potential sources of ground gas within influencing distance of the site identified in **Section 2.5** comprise:

- Organic rich natural soils (peat)

Pathways and receptors for ground gas were identified as:

- building foundations, piled foundations and vibro-stone columns
- construction joints and cracks within building structure
- utility routes and service penetrations into buildings
- mine shafts
- mine workings extending laterally.

This assessment has been undertaken to assess risks to building structures and proposed end users. The assessment has not taken into consideration the health and safety of construction workers. Risks may still be present to construction workers especially where works include the entry into excavations within the ground. Construction workers should undertake appropriate risk assessments and risks should be managed through health and safety procedures and safe systems of work.

The risk assessment has been undertaken based on the current understanding of the CSM.

5.5.3 Empirical semi-quantitative approach using borehole monitoring data (Wilson and Card approach, BS8485)

5.5.3.1 Background

The empirical semi quantitative approach using gas monitoring data requires the designation of a gas screening value (GSV) for the entire site or zones within the site, which informs the hazard potential and associated prescribed ground gas protection measures within new buildings (where necessary). BS8485 defines the GSV as the *'flow rate (l/hr) of a specific hazardous gas* ***representative of a site or zone****, derived from assessment of borehole concentration and flow rate measurements and taking account of all other influencing factors, in accordance with a conceptual site model'.*

BS8485 Section 6.3.1 outlines the process for developing a GSV for the site or a zone as follows:

- borehole hazardous gas flow rate (Q_{hg}) is calculated for each borehole standpipe for each monitoring event. The borehole hazardous gas flow rate is defined in BS8485 as the '*flow rate of a specific hazardous gas, either methane or carbon dioxide, from a borehole standpipe'*. The Q_{hg} is calculated from individual borehole measurements of total gas flow and the concentration of the specific hazardous gas. BS8485 states in Section 6.3.4 that the **maximum** gas concentration recorded during the monitoring event should be used, together with **steady-state** values of gas flows
- the reliability of the measured gas flow rates and concentrations are assessed taking into account borehole construction
- decisions are made about how to deal with any temporal or spatial shortages in the data
- judgements are made about what GSV to designate for use for design purposes taking all relevant information and the conceptual site model into account.

Once the Q_{hg} has been calculated for methane and carbon dioxide, individual borehole measurements are compared to the thresholds presented in Table 2 of BS8485 which inform the CS that directly relates to each individual measurement. Taking into account the site data (i.e. borehole gas concentration and flow rate to calculate the Q_{hg}) and all other influencing factors in

accordance with the CSM, a decision can then be made regarding the GSV that is considered to be representative of the site or a zone within it.

Typical threshold concentrations of methane (1% v/v) and carbon dioxide (5% v/v), and flow rates (>70 l/h), are also considered when designating the GSV for the site or zone, which in turn dictates the hazard potential and CS. It is important to note that the site or zone characteristic GSV and maximum concentration or flow thresholds are guideline values and not absolute. The thresholds may be exceeded in certain circumstances, if the CSM indicates it is safe to do so.

5.5.3.2 Designation of a GSV for the site or zone

The results of the ground gas monitoring and testing undertaken, alongside site conditions at the time of monitoring, are given in **Appendix E.**

Consideration has been given to the presence of flooded or partially flooded response zones at the time of monitoring, with details of fully or partially flooded response zones detailed in **Appendix L**.

A summary of the monitoring well field data and the maximum recorded gas concentrations and initial and steady state flow rates per borehole (or minimum for oxygen) is presented in **Table 23**.

The range of atmospheric pressure over the monitoring rounds completed was 986-1032 mbar and this was recorded to be increasing at the time of the visits.

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Table 23 Summary of ground gas monitoring results –

Exploratory position ID	Response zone top (mbgl)	Response zone base (mbgl)	Response zone geological unit	No. of monitoring rounds	Peak CH_4 max. (%/vol)	Steady-state CH_4 max. (%/vol)	Peak CO_2 max. (%/vol)	Steady-state CO_2 max. (%/vol)	Oxygen min. (%/vol)	Steady-state gas flow max. (l/hr)	Depth to water min. (m)	Depth to water max. (m)	Atm. pressure min. (mb)	Atm pressure max. (mb)
BH317	1	20	Mixed Superficial Deposits	5	94.1	94.1	2	2	0.1	0.7	2.15	2.58	986	1032
BH324	1	23	Mixed Superficial Deposits inc. peat	5	0.4	0.2	0.1	0.1	19.5	0.5	0.94	1.43	986	1032
• Monitoring standpipes response zones installed to allow an assessment of gas generation across various strata and to allow for groundwater sampling														

Table 24 Summary of ground gas monitoring results from the initial phase of Project Cronus

Exploratory position ID	Response zone top (mbgl)	Response zone base (mbgl)	Response zone geological unit	No. of monitoring rounds	Peak CH_4 max. (%/vol)	Steady-state CH_4 max. (%/vol)	Peak CO_2 max. (%/vol)	Steady-state CO_2 max. (%/vol)	Oxygen min. (%/vol)	Peak gas flow max. (l/hr)	Steady-state gas flow max. (l/hr)	Depth to water min. (m)	Depth to water max. (m)	Atm. pressure min. (mb)	Atm pressure max. (mb)
BH01 Shallow	4.00 m	7.00 m	Made ground	3	91.5	91	6.6	6.6	0	3.5	2.3	1.775	1.95	1014	1019

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Exploratory position ID	Response zone top (mbgl)	Response zone base (mbgl)	Response zone geological unit	No. of monitoring rounds	Peak CH_4 max. (%/vol)	Steady-state CH_4 max. (%/vol)	Peak CO_2 max. (%/vol)	Steady-state CO_2 max. (%/vol)	Oxygen min. (%/vol)	Peak gas flow max. (l/hr)	Steady-state gas flow max. (l/hr)	Depth to water min. (m)	Depth to water max. (m)	Atm. pressure min. (mb)	Atm pressure max. (mb)
BH01 Deep	8.00 m	12.00 m	Tidal Flat Deposits	3	91.5	91	6.6	6.6	0	1	0	1.78	1.6	1014	1019

Table 25 Summary of the continuous ground gas monitoring data from the supplementary works for Project Cronus

Exploratory position ID	Peak CH_4 min (%/vol)	Peak CH_4 max(%/vol)	Peak CO_2 min (%/vol)	CO_2 max. (%/vol)	Oxygen min. (%/vol)	Peak gas flow max. (l/hr)	Depth to water min. (m)	Depth to water max. (m)	Atm. pressure min. (mb)	Atm pressure max. (mb)
BH205	0.02	25.72	0	0	6.92	0.1	2.29	2.44	999	1031

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5.5.3.3 Summary of borehole hazardous gas flow rates

Borehole hazardous gas flow rates (Q_{hg}) have been calculated for each borehole standpipe, for each monitoring round and are presented, alongside two 'worst case' checks in **Appendix L** comprising a probable 'worst case' and potential 'worst case' from the available monitoring data. Within this data gas concentrations exceeding the thresholds presented in Table 2 of BS8485 are identified, alongside the CS that could be associated with each individual borehole monitoring event.

5.5.3.4 Worst case check

In accordance with BS8485, a 'worst case' Q_{hg} has been calculated per borehole by multiplying the maximum recorded flow from any monitoring round for that borehole by the maximum recorded methane or carbon dioxide concentration in that borehole. A further worst-case Q_{hg} check across all data collected is presented in **Appendix L** for the entire site (or zone), which has been calculated by multiplying the maximum recorded flow by the maximum recorded methane or carbon dioxide concentration.

The gas monitoring carried out to date has recorded elevated CH4 within BH317 with CO2 and relatively low flow rates. The origin of the elevated CH4 is considered likely to be pockets of peat encountered within the Tidal Flat Deposits which have been oxidised as a consequence of the drilling and subsequent installation of monitoring wells. A majority of the response zones in the boreholes appear to have been flooded as a consequence of shallow groundwater and hence the results should be treated with caution and potentially discounted.

The elevated CH4 along with the absence of significant CO2 and flow is typical of peat, with higher initial concentrations of CH4 normally decreasing over an extended monitoring period. Based upon the type of Made ground encountered it is not considered a likely source of ground gases due to the low organic content present and absence of any significant volume of degradable or putrescible material.

The data collected from the unflooded monitoring wells appears to have similar gas concentrations, most notably CH_4 and similar flow rates to those from the monitored well installed as part of Project Cronus, during both the periodic and continuous monitoring.

5.5.3.5 Data limitations

The site investigation and subsequent gas monitoring programme has been designed to provide evidence in support of an initial assessment. However, due to the shallow nature of the groundwater beneath the site flooding many of the response zones of the monitoring well and 'true' reading may not have been recorded as part of this initial monitoring programme. Based upon the unflooded response zone a CS1 has been used. There remains uncertainty around the characterisation of the ground gas regime.

However, based upon the proposed development not comprising of any enclosed spaces the risk to future users is considered to be low.

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5.6 Methodology and assessment of controlled waters-related linkages

5.6.1 Migration of dissolved phase contaminants to Bristol Channel

As the primary controlled waters receptors are surface waters in the Bristol Channel, the analytical results for groundwater samples have been assessed against the lowest of Environmental Quality Standards (EQS) for conservatism.

Screening of the results of laboratory analysis undertaken on groundwater samples collected during the current investigation indicated no exceedances of the EQS values.

The full results are included within the appendices.

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6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Geo-environmental assessment

Based on the results of the site investigation and GQRA, contaminant linkages have been identified to be potentially complete and require further action with respect to human health. This is as a result of asbestos being present in two tested samples during Project Cronus. Although this risk has been identified, provided the proposed development plans remain consistent, the central concrete slab will break the source receptor pathway, effectively removing the risk of exposure the asbestos. It is recommended to remove the area impacted with asbestos at shallow depth(TP211 at 0.10 m bgl) prior to construction works commencing.

The made ground is not currently considered to be a viable source of ground gases due to the absence of any significant degradable or putrescible material. The elevated methane identified on site is likely due to the peat within the Tidal Flat Deposits although the monitoring wells were shown to be saturated. Based upon the amount of data collected during this investigation and from the wells installed for Project Cronus the risk is considered low. It is also understood there are to be no enclosed spaces/structures as such the risk to future users is considered low.

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FIGURES

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Figure 1 SITE LOCATION PLAN

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Rev	Date	Amendment	Drawn	Chkd	Appd
C01	21.01.25	First Issue	AS	JB	JB

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Client: Tata Steel UK

Project Name: P-Fields

Description: Site Location Plan

Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name
m	A4	1:25,000	277645,186306	315768	11101	C01	315768-BL-111-XX-D-G-11101-C01

Figure 2 SITE LAYOUT PLAN

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LEGEND

Site boundary

Notes:

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C01	21.01.25	First Issue	AS	JB	JB

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Project Name: P-Fields

Description: Site Layout Plan

Project ID	Drawing no.	Revision
315768	11201	C01

File name: 315768-BL-112-XX-D-G-11201-C01

Dimensions	Scale	Size
m	1:1250	A1

0 20 50 75 100m

Figure 3 EXPLORATORY HOLE LOCATION

DRAFT

DO NOT SCALE FROM THIS DRAWING



LEGEND

- Site boundary
- Borehole location
- Trial pit location

Notes:

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Rev	Date	Amendment	Drawn	Chkd	Appd
C01	21.01.25	First Issue	AS	JB	JB

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Client
Tata Steel UK

Project Name
P-Fields

Description
Exploratory Hole Location Plan

Project ID	Drawing no.	Revision
315768	22201	C01

File name
315768-BL-222-XX-D-G-22201-C01

Dimensions	Scale	Size
m	1:1250	A1

0 20 50 75 100m

Figure 4 EXPLORATORY LOCATION PLAN- PROJECT CRONUS

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277000 277500 278000 278500

186500

186000

185500

BH1
TP212
TP211
BH205
TP213
TP217
BH2
BH206
BH204
BH203
TP214
TP208
TP215
TP207
TP209
TP218
TP216
BH3
TP206
BH209
TP210
BH207
BH202
BH4
BH5
TP205
TP204
TP201
BH201
TP224
TP222
TP203
TP226
TP202
BH208
BH12
TP227
TP232
TP228
TP231
TP230
TP234
TP233
TP229
BH8
BH11
BH13

Legend:

- Borehole
- Trial Pit

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drn	Chk	App
00	27/10/2022	First Draft	DR	JB	JB

315075 - Project Cronus

RSK GEOSCIENCES

TITLE:
Figure 3:
Exploratory Hole Location Plan

0 100 200
Metres
SCALE: 1:5,000 @ A3

N W E S

REV 00

Document Path: C:\Users\droberts\Desktop\Workings\315075 - Project Cronus\01 - GIS\Figure 3 - Exploratory Hole Location Plan.mxd

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Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

APPENDICES

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Appendix A
SERVICE CONSTRAINTS

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APPENDIX A
SERVICE CONSTRAINTS

1. Service Constraints for all Reports

1.1. This Report (the “Report”) and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Carbon Zero Consulting, Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the “Appointment”) between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

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1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.

d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together

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with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not

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been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibly for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

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5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/ radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD)Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided

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by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

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Appendix B
DEVELOPMENT DRAWINGS

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P Fields_Proposed_Site Plan
1 : 500

Print Date: 24/10/2024 15:49:26

File Name: Autodesk Docs://20007_EAF Project/EAF-LAW-00-XX-M3-A-000001_Site Plan Master.rvt

Construction (Design and Management) Regulations

Design risk assessments are carried out throughout the design stage of this project in accordance with company procedures and manuals. Where reasonably possible all areas of risk applicable to design and end use of the construction have been identified and then eliminated, mitigated or recorded as a residual risk. Note that general risks of which a competent designer or contractor should be aware are not included. This drawing is to be read in conjunction with the construction information and all related documents prepared in accordance with the current Construction (Design and Management) Regulations 2015 and all applicable Health and Safety legislation as currently amended.

Red Line Boundary

Fibre Reinforced Concrete Hardstanding for laydown of scrap material

Mesh Reinforced Concrete Hardstanding for laydown of scrap material

REV	DESCRIPTION	DRAWN BY	CHECKED BY	APPROVED BY	DATE
P04	Scale Clarified				24/10/2024
P03	Updates following NPT Comments				12/09/2024
P02	Herdstanding updated following Client Comments				05/08/2024
P01	Revised Boundary following Client Comments				01/08/2024
P00	Initial Issue				19/07/2024

RIBA PLAN OF WORK WORKSTAGE: Stage 3 - Spatial Coordination
LEVEL OF MODEL DEFINITION (LoD): LoD 3 - Approximate Model

PURPOSE OF ISSUE - SUITABLE FOR ...: Planning Submission
STATUS or SUITABILITY: Status S2 - Delivery Team Information

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CLIENT
Tata Steel UK Ltd.

PROJECT TITLE
EAF PROJECT, PORT TALBOT

DRAWING TITLE
P Fields - Proposed Site Plan

PROJECT No
20007

SCALE @ A0
As indicated

DRAWING No: (ISO 19650 Project - Originator - Volume - Level - Type - Role - Number; NBS Project - Originator - Functional - Spatial - Form - Discipline - Number Breakdown Breakdown)
EAF-LAW-P-X-DR-**A-90104**

REVISION
P04

DO NOT SCALE Any discrepancy or query concerning this drawing should be referred to the Architect.

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Appendix C
TECHNICAL BACKGROUND

C 1. Desk Study

Aquifer designation and Source protection zones (England and Wales)

Principal aquifer: layers of rock or drift deposit that have high intergranular and/or fracture permeability (usually providing a high level of water storage). They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer: permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Secondary B aquifer: predominantly lower permeability layers that may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated aquifer: it has not been possible to attribute either a category A or B to a rock type. In most cases this means that it was previously designated as both a minor and non-aquifer in different locations owing to the variable characteristics.

Unproductive' strata: low permeability with negligible significance for water supply or river base flow.

The EA generally adopts a three-fold classification of source protection zones (SPZ) surround abstractions for public water supply. The Site is situated in an area defined as follows:

- Zone 1 or the 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source
- Zone 2 or the 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone 3 or the 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.

Preliminary risk assessment methodology

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) contaminant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the

likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

- highly likely: the event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution
- likely: it is probable that an event will occur or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term.

RSK also adopt a 'very unlikely' probability to account for where there may be increased certainty over whether an event is probable in the long term.

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000)
- medium: chronic damage to human health ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem
- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures or the environment
- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the following table.

DRAFT

		Consequences			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**Highly likely**	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low
	Very Unlikely	Low	Very Low	Negligible	Negligible

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required
- high: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term
- moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term
- low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild
- very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.

H2 Site Investigation Methodology

Ground gas monitoring

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million. Initial and steady state concentrations were recorded. In addition, during the first monitoring round, all wells were screened with a PID to establish if there are any interferences and cross-sensitivity of other hydrocarbons with the infrared gas meter.

Low flow groundwater sampling

Groundwater samples were retrieved using a low-flow purging and sampling methodology

The low-flow method relies on moving groundwater through the well screen at approximately the same rate as it flows through the geological formation. This results in a significant reduction in the volume of water extracted before sampling and significantly reduces the amount of disturbance of the water in the monitoring well during purging and sampling. Drawdown levels in the monitoring well and water quality indicator parameters (pH, temperature, electrical conductivity, redox potential and dissolved oxygen) are monitored during low-flow purging and sampling, with stabilisation indicating that purging is complete and sampling can begin. As the flow rate used for purging, in most cases, is the same or only slightly higher than the flow rate used for sampling, and because purging and sampling are conducted as one continuous operation in the field, the process is referred to as low-flow purging and sampling.

Reuse of suitable materials

The Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) (CoP) was developed in consultation with the Environment Agency and development industry to enable the re-use of materials under certain scenarios and subject to demonstrating that specific criteria are met. The current reuse scenarios covered by the CoP comprise

- reuse on the site of origin (with or without treatment)
- direct transfer of clean and natural soils between sites
- use in the development of land other than the site of origin following treatment at an authorised Hub site (including a fixed soil treatment facility).

The importation of made ground soils (irrespective of contamination status) or crushed demolition materials is not permitted currently under the CoP and requires either a standard rules environmental permit or a U1 waste exemption (see below).

In the context of excavated materials used on-sites undergoing development, four factors are considered to be of particular relevance in determining if the material is a waste or when it ceases to be waste:

- the aim of the Waste Framework Directive is not undermined, i.e. if the use of the material will create an unacceptable risk of pollution of the environment or harm to human health it is likely to be waste
- the material is certain to be used
- the material is suitable for use both chemically and geotechnically
- only the required quantity of material will be used.

The CoP requires the preparation of a materials management plan (MMP) that confirms the above factors will be met. This plan needs to be reviewed by a 'Qualified Person' (QP) who will then issue a declaration form to the EA. As the project progresses, data must be collated and on completion a verification report produced that shows the MMP was followed and describes any changes.

The MMP establishes whether specific materials are classified as waste and how excavated materials will be treated and/or reused in line with the CoP. The MMP is likely to form part of the site waste management plan.

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Appendix D
EXPLORATORY HOLE RECORDS (INC PROJECT CRONUS)

DRAFT

Contract Reference: **315768**

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS



First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

MATERIAL GRAPHIC LEGENDS

	CLAY		CLAY with BOULDERS		CLAY with COBBLES		Clayey GRAVEL
	Clayey gravelly SAND		Gravelly clayey SAND		Clayey gravelly SAND with BOULDERS		Coal
	Clayey SAND		Clayey sandy GRAVEL		GRAVEL		Gravelly CLAY
	Gravelly silty CLAY		Silty gravelly CLAY		Gravelly SAND		Gravelly SAND with BOULDERS
	MADE GROUND		Mudstone		Possible MADE GROUND		SAND

INSTRUMENTATION SYMBOLS

	Backfill		Bentonite cement grout		Bentonite seal		Concrete
	Gravel filter		Sand filter		Stopcock cover		Upstanding cover
	Plain pipe		Slotted pipe				

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KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes

B	=	Bulk disturbed sample.
C	=	Core sample.
CBR	=	CBR mould sample.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
NR	=	
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.

Undisturbed sample detail codes

$U_{(100)}$	=	100mm diameter undisturbed sample.

IN-SITU TESTING

$SPT_{(c)}$	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. ($SPT_{(NR)}$ indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
HP	=	Hand Penetrometer Test. Value given as shear strength c_u, in kPa.
V	=	Field Vane Test. Peak value (c_u) & Residual value (c_r), given as shear strength in kPa.

ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm).

In the fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).

Where variable the minimum - average - maximum spacing may be quoted.
'NI' denotes non-intact core. 'NA' denotes not applicable.

All lengths used to determine rock core mechanical properties taken along the centre line of the core.
Obvious induced fractures have been ignored.
The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.
AZCL = Assessed zone of core loss.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:2015.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. The data on any sheet within the report showing the AGS icon is available in the AGS format.

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH316**

Contract Ref:	Start: **15.07.24** End: **16.07.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768		**7.39**	**E:277450.4 N:186389.0**	**1** of **1**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
0.60	ES1	ES				MADE GROUND. Dark brown sandy angular fine to coarse GRAVEL of various lithologies including limestone and slag. Sand is fine to coarse.	(0.70) 0.70	
						CONCRETE with void below to 3.0m bgl. Water within inspection chamber.	(2.30)	
						Inspection pit terminated at 0.70mbgl due to void.	3.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit machine dug to 0.70m depth. Void encountered at 0.70m bgl.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 4000**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH316a**

Contract Ref:	Start: **16.07.24** End: **24.07.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768		**7.39**	**E:277450.4 N:186389.0**	**1** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
						MADE GROUND. Dark brown sandy angular fine to coarse GRAVEL of various lithologies including limestone and slag. Sand is fine to coarse.		
						. . . Layer of compacted slag at 0.90m bgl. Recovered as cobbles and boulders.	(1.50)	
							1.50	
1.70	ES1	ES			1	MADE GROUND. Dark brownish grey slightly gravelly clayey fine to coarse SAND. Gravel is angular fine to coarse of red brick and slag. Slight hydrocarbon odour.		
2.60-3.00	B1	B					(1.80)	
2.60	ES2	ES						
3.00-3.45	1	SPT(c)	N=11			. . . Becoming medium dense at 3.00mbgl.		
3.30-4.00	B2	B				Loose greyish brown silty fine to medium SAND. (BLOWN SAND)	3.30	
3.30	ES3	ES						
4.50-5.00	B3	B						
5.00-5.45	3	SPT(c)	N=10			. . . Becoming loose at 5.00mbgl.		
5.50-6.00	B4	B					(4.40)	
5.50	ES4	ES						
6.00-6.45	4	SPT(c)	N=5					
7.00-7.50	B5	B				. . . Becomes dark grey fine at 7.0m bgl. Slight organic odour.		
7.50-7.95	5	SPT(c)	N=2			. . . Becoming very loose at 7.50mbgl.		
7.70-8.00	B6	B				Very soft dark brownish grey mottled black brown slightly sandy silty CLAY. Sand is fine. Frequent relict rootlets and organic matter. Slight organic odour. (TIDAL FLAT DEPOSITS)	7.70	
							8.00	
						Greyish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)		
8.40-9.00	B7	B				Very soft brownish grey sandy silty CLAY. Sand is fine to medium. (TIDAL FLAT DEPOSITS)	8.40	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit machine dug to 2.20m depth. 300mm diameter pipe installed prior to backfilling to allow cable percussive drilling to commence.
3. Groundwater encountered at 2.10m depth.
4. Upon completion borehole backfilled with bentonite pellets.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 4000**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH316a**

Contract Ref:	Start: **16.07.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **24.07.24**	**7.39**	**E:277450.4 N:186389.0**	**2** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
9.00-9.45	U1	U	11 blows 100% recovery			Very soft brownish grey sandy silty CLAY. Sand is fine to medium. (TIDAL FLAT DEPOSITS) *(stratum copied from 8.40m from previous sheet)*		
9.45-9.55	D1	D					(2.90)	
10.00-10.50	B8	B						
10.50-10.95	6	SPT	N=2					
11.30-12.00	B9	B				Very soft brownish grey dark brown sandy silty CLAY with frequent organic matter. Sand is fine to coarse. Organic matter is angular fine to coarse fibrous. Moderate organic odour. (TIDAL FLAT DEPOSITS)	11.30	
12.00-12.45	U2	U	28 blows 100% recovery					
12.45-12.55	D3	D				. . . Organic matter becomes rare and pseudo-fibrous to amorphous from 12.50.		
13.00-13.50	B10	B						
13.50-13.95	7	SPT	N=2				(4.70)	
14.50-15.00	B11	B						
15.00-15.45	U3	U	9 blows 100% recovery					
15.45-15.55	D5	D						
16.00-16.50	B12	B				Dense greyish brown sandy clayey angular to subrounded fine to coarse GRAVEL of mudstone/siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of mudstone/siltstone and sandstone. (Weathered South Wales Middle Coal Measures)	16.00	
16.50-16.95	8	SPT(c)	N=31					
17.50-18.00	B13	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 4000**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH316a**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**16.07.24** End: **24.07.24**	**7.39**	**E:277450.4 N:186389.0**	**3** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
18.00-18.45	9	SPT(c)	N=35			Dense greyish brown sandy clayey angular to subrounded fine to coarse GRAVEL of mudstone/siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of mudstone/siltstone and sandstone. (Weathered South Wales Middle Coal Measures) *(stratum copied from 16.00m from previous sheet)*		
19.00-19.50	B14	B						
19.50-19.95	10	SPT(c)	N=36					
20.50-21.00	B15	B						
21.00-21.45	11	SPT(c)	N=30					
22.00-22.50	B16	B					(12.22)	
22.50-22.95	12	SPT(c)	N=59			. . . Becomes very dense between 22.5m and 24.0m bgl.		
23.50-24.00	B17	B						
24.00-24.45	13	SPT(c)	N=50					
25.00-25.50	B18	B						
25.50-25.95	14	SPT(c)	N=33			. . . Becoming dense at 25.50mbgl		
26.50-27.00	B19	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 4000**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH316a**

Contract Ref:	Start: **16.07.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **24.07.24**	**7.39**	**E:277450.4 N:186389.0**	**4** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
27.50-28.00	B20	B				Dense greyish brown sandy clayey angular to subrounded fine to coarse GRAVEL of mudstone/siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of mudstone/siltstone and sandstone. (Weathered South Wales Middle Coal Measures) *(stratum copied from 16.00m from previous sheet)*		
28.00-28.22	16	SPT(c)	25/45,38,17 for 32mm			Borehole terminated at 28.0m bgl.	28.22	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 4000**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**07.06.24** End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								MADE GROUND. Dark brown sandy angular fine to coarse GRAVEL of various lithologies including red brick, limestone, slag and wood.			
0.50-1.00	1	B									
0.70	1	ES									
										(2.20)	
1.40-1.70	1	SPT(c)	7,12/25,25 for 75mm								
1.50	2	ES									
1.50-2.00	2	B						. . . Frequent angular cobbles of slag at 1.70m bgl.			
2.00-2.45	2	SPT(c)	N=18							2.20	
2.20	3	ES						MADE GROUND. Medium dense yellowish greyish brown slightly gravelly clayey fine to coarse SAND. Gravel is angular fine to coarse of slag.			
2.20-2.70	3	B								(0.90)	
3.00-3.45	3	SPT(c)	N=8							3.10	
3.30	4	ES						MADE GROUND. Loose dark brownish grey sandy clayey angular fine to coarse GRAVEL of various lithologies including red brick, slag and coal.		(0.60)	
								MADE GROUND. Dark brownish grey gravelly fine to coarse SAND. Gravel is angular fine to coarse of various lithologies including red brick, slag and coal.		3.70	
4.00-4.45	4	SPT(c)	N=21							4.10	
4.00-4.50	4	B						Firm to stiff brownish grey sandy silty CLAY with pockets of grey clayey fine to coarse sand. Sand is fine to coarse. Frequent rootlets/organic matter. Slight organic odour. (TIDAL FLAT DEPOSITS)			
4.10	5	ES									
5.00-5.45	1	U	11 blows 33% recovery								
5.45-5.50	1	D						. . . Becomes brownish grey mottled black at 5.45m bgl. Rare rootlets/organic matter.			
6.00-6.45	2	D									
6.00-6.45	6	SPT	N=1								
										(4.80)	
6.50-7.00	5	B									
6.50	6	ES									
7.50-7.95	2	U	12 blows 60% recovery								
7.95-8.00	3	D						. . . Becomes slightly sandy at 7.95m bgl. Sand is fine.		8.90	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit machine dug to 1.20m depth.
3. Rotary coring commenced at 27.50m bgl.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**07.06.24** End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
9.00-9.45	4	D						Very soft dark brown PEAT. Strong organic odour. (TIDAL FLAT DEPOSITS)		9.20	
9.00-9.45	7	SPT	N=0					*(stratum copied from 8.90m from previous sheet)*			
								Soft brownish grey clayey fine to coarse SAND. Moderate organic matter content. Slight organic odour. (TIDAL FLAT DEPOSITS)		(1.00)	
10.00-10.50	6	B								10.20	
								Very soft to soft grey mottled brown and black slightly sandy slightly organic silty CLAY. Sand is fine to coarse. Slight organic odour. Organic matter is fibrous to pseudo-fibrous. (TIDAL FLAT DEPOSITS)			
10.50-10.95	3	U	0 blows 0% recovery								
10.50	7	ES									
10.50-11.00	7	B									
11.50-12.00	8	B									
12.00-12.45	5	D								(3.70)	
12.00-12.45	8	SPT	N=4								
12.50-13.00	9	B						. . . Organic matter becomes pseudo-fibrous to amorphous from 12.50m bgl.			
13.50-13.95	4	U	9 blows 100% recovery								
										13.90	
13.95-14.00	10	D						Soft greyish brown mottled dark brown and black slightly sandy slightly gravelly slightly organic silty CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of sandstone. Organic matter is fibrous to pseudo-fibrous including relict rootlets. Slight organic odour. (TIDAL FLAT DEPOSITS)		14.00	
14.00-14.50	10	B									
14.00	8	ES									
								Dense greyish brown sandy clayey angular to rounded fine to coarse GRAVEL of sandstone and mudstone with medium cobble content. Sand is fine to coarse. Cobbles are subrounded to rounded of sandstone. (Weathered South Wales Middle Coal Measures Formation).		(1.50)	
15.00-15.45	9	SPT	N=39								
15.50-16.00	11	B						Dense greyish brown silty/clayey fine to medium SAND. (Weathered South Wales Middle Coal Measures Formation).		15.50	
								. . . Blowing sands rising up the casing to 13.5m bgl.			
										(2.70)	
17.50-18.00	12	B									
17.50	9	ES									

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start: **07.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
18.00-18.45	10	SPT	N=30					Very dense dark brownish grey sandy clayey angular to subrounded fine to coarse GRAVEL and COBBLES of sandstone. Sand is fine to coarse. (Weathered South Wales Middle Coal Measures Formation).		18.20	
19.00-19.50	13	B								(4.40)	
19.50-19.88	11	SPT	8,7/16,19,15 for 75mm								
19.50-20.00	14	B									
21.00-21.45	12	SPT	N=35								
22.00-22.50	15	B								22.60	
22.50-22.95	13	SPT	N=36					Dense multicoloured (red, grey and brown) sandy angular to rounded fine to coarse GRAVEL and COBBLES of sandstone and mudstone. Sand is fine to coarse.		(0.90)	
23.00-23.50	16	B						Multicoloured (red, grey and brown) sandy angular to rounded fine to coarse GRAVEL and COBBLES of sandstone and mudstone. Sand is fine to coarse. (Weathered South Wales Middle Coal Measures Formation).		23.50	
										(4.00)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BORE HOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start: **07.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								Multicoloured (red, grey and brown) sandy angular to rounded fine to coarse GRAVEL and COBBLES of sandstone and mudstone. Sand is fine to coarse. (Weathered South Wales Middle Coal Measures Formation). *(stratum copied from 23.50m from previous sheet)*			
27.50-29.00				93 31 0	8 35 90 FI=21			Medium strong to strong dark grey unweathered fine SANDSTONE/SILTSTONE. Rare subrounded to rounded coarse coarse sandstone inclusions. Occasional very thin laminations of coal/organic mudstone.		27.50	
29.00-30.50				60 36 36	60 170 230 FI=5						
30.50-32.00 30.50-30.58	14	SPT	NP	75 75 46	60 150 210 FI=7					(7.50)	
32.00-33.50				96 56 19	35 80 200 FI=12			. . . Inclusions no longer present from 32.0m bgl.			
33.50-35.00 33.50-33.58	15	SPT	NP	93 77 31	15 75 150 FI=17			. . . Becomes thinly laminated with strong pale grey medium to coarse grained sandstone from 34.40m bgl.			
35.00-36.00				95 37 32				Weak black partially unweathered COAL.		35.00	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start: **07.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**5** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								Weak black partially unweathered COAL. *(stratum copied from 35.00m from previous sheet)*			
36.50-38.00 36.50-36.73	16	SPT	11,12/100 for 75mm	40 0 0				. . . Becomes destructured at 36.5m bgl (potentially carbonaceous mudstone)		(3.00)	
38.00-39.50				100 27 27	50 100 220 FI=11			Medium strong brownish grey unweathered MUDSTONE. Frequent angular fine to coarse fossilised organic matter inclusions. . . . Fossilised organic matter inclusions no longer present from 38.4m bgl. . . . Becomes laminated with fine sandstone/siltstone between 38.9m and 39.4m bgl . . . Becomes weak and partially unweathered at 39.10m bgl.	[i]	38.00 (2.10)	
39.50-41.00 39.50-39.58	17	SPT	NP	92 47 32	15 140 260 FI=10			Weak to moderately weak black unweathered to partially unweathered COAL.		40.10 (0.50)	
41.00-42.50				97 97 97	160 300 450 FI=5			Strong grey unweathered SILTSTONE. Frequent angular fine to coarse fossilised organic matter inclusions.		40.60 (2.30)	
42.50-44.00 42.50-42.58	18	SPT	NP	68 46 30	30 100 200 FI=8			. . . Becomes medium strong at 42.50m bgl.			
								Weak black partially unweathered to destructured COAL.		42.90	
44.00-45.50				90 90 70	25 130 310 FI=10			Strong brownish grey unweathered fine SANDSTONE/SILTSTONE. Occasional subrounded fine to coarse medium sandstone inclusions and lenses. Frequent angular fine to coarse fossilised organic matter inclusions.	[i]	43.10 (2.80)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**07.06.24** End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**6** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
				90 90 70	25 130 310 FI=10			Strong brownish grey unweathered fine SANDSTONE/SILTSTONE. Occasional subrounded fine to coarse medium sandstone inclusions and lenses. Frequent angular fine to coarse fossilised organic matter inclusions. *(stratum copied from 43.10m from previous sheet)*			
45.50-47.00 45.50-45.58	19	SPT	NP	80 58 32	25 80 200 FI=14			Medium strong dark brownish grey unweathered to distinctly weathered MUDSTONE. occasional subrounded fine to coarse inclusions of fine to medium sandstone. . . . Frequent angular fossilised organic matter inclusions between 45.95-46.10m bgl.	[i]	45.90	
47.00-48.50				71 0 0	80			. . . Becomes extremely weak to weak distinctly weathered at 47.3m bgl. Frequent laminations of organic mudstone/coal		(4.10)	
48.50-50.00 48.50-48.58	20	SPT	NP	100 0 0	20 175						
50.00-51.50				98 51 36	30 100 190 FI=8			Medium strong to strong brownish grey partially unweathered fine SANDSTONE. Occasional fossilised organic matter inclusions.	[i]	50.00 (1.60)	
51.50-53.00 51.50-51.58	21	SPT	NP	53 12 0				Weak black unweathered COAL. . . . Becomes dark grey destructured (potentially carbonaceous mudstone).		51.60	
								Strong to very strong pale grey unweathered fine to medium SANDSTONE. Occasional veins of quartzite.		52.00 (1.00)	
53.00-54.50				60 0 0				Medium strong dark brownish grey unweathered to partially unweathered SILTSTONE with thin laminations of fine sandstone and carbonaceous mudstone . . . Laminations no longer present at 53.5m bgl.		53.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start: **07.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**7** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
				60 0 0				Medium strong dark brownish grey unweathered to partially unweathered SILTSTONE with thin laminations of fine sandstone and carbonaceous mudstone *(stratum copied from 53.00m from previous sheet)*			
54.50-56.00 54.50-54.65	22	SPT	NP	0 0 0	40 70 130 FI=14			. . . Becomes fine SANDSTONE/SILTSTONE.	[i]	(4.50)	
56.00-57.50				33 0 0							
57.50-59.00 57.50-57.73	23	SPT	25,20/100 for 75mm	40 0 0				Medium strong brownish grey partially unweathered fine SANDSTONE. Frequent very thin laminations of carbonaceous mudstone. . . . Frequent very thin laminations of organic mudstone at 57.5m bgl.		57.50 (1.50)	
59.00-60.50				0 0 0				Medium strong brownish grey partially unweathered fine SANDSTONE. Frequent very thin laminations of carbonaceous mudstone.		59.00 (1.50)	
60.50-62.00 60.50-60.58	24	SPT	NP	0 0 0				Medium strong brownish grey partially unweathered fine SANDSTONE. Frequent very thin laminations of carbonaceous mudstone.		60.50 (1.50)	
62.00-63.50				0 0 0				COAL. (Drillers description)		62.00	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH317**

Contract Ref:	Start: **07.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **27.06.24**	**6.76**	**E:277542.9 N:186261.9**	**8** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
63.50-65.00 63.50-63.95	25	SPT	N=75	0 0 0 0 0 0				COAL. (Drillers description) *(stratum copied from 62.00m from previous sheet)*		(3.00)	
65.00-66.50				0 0 0				Medium strong brownish grey partially unweathered fine SANDSTONE. Frequent very thin laminations of carbonaceous mudstone.		65.00 (1.63)	
66.50-66.58	26	SPT	NP					Terminated at 66.63m bgl		66.63	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2000 + Fraste**	**CJA**	**Kieran Bancroft**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323**

Contract Ref:	Start: **08.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **11.06.24**	**5.89**	**E:277732.0 N:186081.9**	**1** of **1**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
0.30	ES1	ES				MADE GROUND. Dark brown sandy angular fine to coarse GRAVEL of various lithologies including limestone, mudstone and slag. Sand is fine to coarse. . . . Cobble/boulder of slag encountered in the side of the inspection pit at 0.10m bgl. . . . Becomes dark brown black and frequent angular cobbles of slag at 0.30m bgl.		
1.50-2.00	1	B					(3.40)	
2.50-3.00	2	B						
3.00-3.23	1	SPT	7,11/36,14 for 0mm					
3.00-3.40	3	B				Borehole terminated due to refusal.	3.40	

Boring Progress and Water Observations						Chiselling / Slow Progress		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit hand dug and mechanically excavated to 2.2m depth.
3. No groundwater encountered.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 2000**	**CJA**	**Kieran Bancroft**	

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start: **30.09.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
								MADE GROUND: Dense (from 3.00m) dark grey and dark greyish brown slightly sandy GRAVEL and COBBLES with medium boulder content. Gravel is subangular to subrounded fine to coarse slag. Cobbles are angular to subangular slag. Boulders are slag.	(4.50)	
2.50-3.00	1	B								
3.00-3.50	3	B								
3.00-3.45	22	SPT	N=35							
3.70-4.30	4	B								
4.30-4.75	5	D								
4.30-4.75	23	SPT	N=9							
4.50-5.10	6	B						MADE GROUND: Loose dark grey angular GRAVEL of medium to coarse mudstone. (Probable Fill)	4.50 (1.10)	
5.10-5.55	7	D								
5.10-5.55	24	SPT	N=10							
5.60-6.10	8	B						MADE GROUND: Medium dense dark grey sandy angular fine to coarse GRAVEL of mudstone, coal and shale. Sand is fine to coarse.	5.60 (0.50)	
6.10-6.55	9	D						Dark brown silty CLAY. (Tidal Flat Deposits)	6.10	
6.10-6.55	25	SPT	N=10							
7.00-7.50	10	D							(2.40)	
7.50-7.95	11	U								
7.95-8.10	12	D								
8.50-9.00	13	B						Dark brown fibrous PEAT. (Tidal Flat Deposits)	8.50	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit mechanically dug to 2.50m depth.
3. Groundwater encountered at 2.50m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**30.09.24** End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
9.00-9.45	14	D						Dark brown fibrous PEAT. (Tidal Flat Deposits)		
9.00-9.45	26	SPT	N=9					*(stratum copied from 8.50m from previous sheet)*	(1.50)	
10.00-10.50	15	B						Dark brown gravelly CLAY. Gravel is subrounded to rounded fine to coarse mudstone and sandstone. (Gaciofluvial Deposits)	10.00	
10.50-10.95	16	D								
10.50-10.95	27	SPT	N=15						(1.50)	
11.50-12.00	17	B						Medium dense pale brown and reddish brown subangular to rounded fine to coarse GRAVEL of sandstone, siltstone and mudstone. (Glaciofluvial Deposits)	11.50	
12.00-12.50	19	B								
12.00-12.45	28	SPT(c)	N=26							
13.00-13.50	20	B							(3.00)	
13.50-14.00	22	B						. . . Sandy below 13.5m bgl. Sand is coarse.		
13.50-13.95	29	SPT(c)	N=27							
14.50-15.00	23	B						Very dense Greyish brown and pale brown sandy GRAVEL and COBBLES of subangular to subrounded sandstone with medium boulder content. Gravel is subangular to subrounded fine to medium mudstone, sandstone and siltstone. Sand is coarse.(Glaciofluvial Deposits)	14.50	
14.50-14.88	30	SPT	4,12/18,18,14 for 75mm							
15.00-15.50	25	B								
16.00-16.30	26	B							(3.00)	
16.30-16.50	27	B								
16.50-16.95	28	D								
16.50-16.95	31	SPT	N=49							
17.40-17.81	32	SPT	5,8/9,12,16,13 for 35mm						17.50	
17.50-18.00	29	B						Very stiff greyish brown very gravelly CLAY. Gravel is rounded fine to coarse mudstone and sandstone. (Weathered South Wales Middle Coal Measures Formation).		

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB AGS

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start: **30.09.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**3** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
18.00-18.41	30	D						Very stiff greyish brown very gravelly CLAY. Gravel is rounded fine to coarse mudstone and sandstone. (Weathered South Wales Middle Coal Measures Formation). *(stratum copied from 17.50m from previous sheet)*		
19.00-19.50	31	B						. . . Becoming brown below 19.0m bgl.	(3.50)	
19.60-20.05	32	D								
19.60-20.05	33	SPT	N=40							
20.50-21.00	33	B								
21.00-21.38	34	SPT	7,14/12,15,23 for 75mm					Very dense greyish brown clayey subangular to subrounded fine to coarse GRAVEL and COBBLES of sandstone and mudstone. (Weathered South Wales Middle Coal Measures Formation).	21.00	
21.00-21.45	34	D								
22.50-22.76	36	SPT	14,11/40,10 for 35mm						(4.20)	
24.00-24.29	35	SPT	9,12/25,25 for 65mm							
								Grey MUDSTONE. (SOUTH WALES COAL MEASURES)	25.20 (0.50)	
25.70-25.82	37	SPT	25/50 for 40mm					MUDSTONE. (Drillers Description)	25.70	

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**30.09.24** End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**4** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
								MUDSTONE. (Drillers Description) *(stratum copied from 25.70m from previous sheet)*		
27.50-27.52	1	SPT(c)	25/100 for 8mm						(5.60)	
29.00-29.01	2	SPT(c)	25/100 for 5mm							
30.50-30.51	3	SPT(c)	25/100 for 6mm							
								COAL. (Drillers Description)	31.30	
								MUDSTONE. (Drillers Description)	31.70 (0.90)	
32.00-32.02	4	SPT(c)	25/100 for 10mm						32.60 (0.70)	
								COAL. (Drillers Description)		
								MUDSTONE. (Drillers Description)	33.30	
33.50-33.51	5	SPT(c)	25/100 for 9mm						(2.90)	
35.00-35.01	6	SPT(c)	25/100 for 3mm							

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**30.09.24** End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**5** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
								MUDSTONE. (Drillers Description) *(stratum copied from 33.30m from previous sheet)*		
									36.20	
								COAL. (Drillers Description)	(0.60)	
36.50-36.67	7	SPT(c)	9,12/100 for 20mm						36.80	
								MUDSTONE/SANDSTONE. (Drillers Description)		
38.00-38.01	8	SPT(c)	25/100 for 8mm							
39.50-39.51	9	SPT(c)	25/100 for 3mm							
41.00-41.01	10	SPT(c)	25/100 for 6mm							
42.50-42.51	11	SPT(c)	25/100 for 6mm							
44.00-44.01	12	SPT(c)	25/100 for 6mm							

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**30.09.24** End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**6** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
								MUDSTONE/SANDSTONE. (Drillers Description) *(stratum copied from 36.80m from previous sheet)*		
45.50-45.52	13	SPT(c)	25/100 for 12mm						(17.70)	
47.00-47.02	14	SPT(c)	25/100 for 10mm							
48.50-48.52	15	SPT(c)	25/100 for 8mm							
50.00-50.02	16	SPT(c)	25/100 for 12mm							
51.50-51.52	17	SPT(c)	25/100 for 9mm							
53.00-53.02	18	SPT(c)	25/100 for 13mm							

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH323A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**30.09.24** End: **08.10.24**	**---**	**E:277732.0 N:186074.0**	**7** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
								MUDSTONE/SANDSTONE. (Drillers Description) *(stratum copied from 36.80m from previous sheet)*		
54.50-54.52	19	SPT(c)	25/100 for 9mm					MUDSTONE. (Drillers Description)	54.50 (0.50)	
								COAL. (Drillers Description)	55.00 (0.60)	
								MUDSTONE. (Drillers Description)	55.60	
56.00-56.02	20	SPT(c)	25/100 for 11mm					MUDSTONE/SANDSTONE. (Drillers Description)	56.00 (1.52)	
57.50-57.52	21	SPT(c)	25/100 for 11mm					Borehole terminated on completion. Backfilled with arisings.	57.52	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary open hole	**Dando 3000 + Comacchio GEO 205**	**CJA**	**Jagan Raj**	JB

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FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**1** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								MADE GROUND: Black to brown silty sandy subangular to angular fine to coarse GRAVEL of brick, slag, mudstone. Sand is fine to coarse.		(1.20)	
1.20-1.52	1	SPT	7,9/16,21,13 for 16mm				1	MADE GROUND: Very dense brown gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick, slag and mudstone. . . . Low angular cobble content of slag (upto 15cm long) between 1.20-1.60mbgl.		1.20	
2.00-2.35	2	SPT	2,10/22,10,8 for 51mm				1			(2.30)	
3.00-3.45	3	SPT	N=14					. . . Large fragments of wood (possibly sleepers) at 3.0mbgl		3.50	
								MADE GROUND: Firm dark grey mottled black slightly gravelly slighty sandy silty CLAY with medium subangular cobble content of mudstone, sandstone or slag. Sand is fine to coarse. Gravel is angular coarse of red brick or slag.		(0.50)	
4.00-4.45	4	SPT	N=2					Very soft dark brown mottled dark grey silty CLAY. (TIDAL FLAT DEPOSITS)		4.00	
										(0.80)	
5.00-5.45	5	SPT	N=5					Loose brown clayey fine to coarse SAND. (TIDAL FLAT DEPOSITS)		4.80	
6.00-6.45	6	SPT	N=8							(3.80)	
								. . . Frequent pockets of firm, brown fibrous PEAT between 7.00-8.60mbgl.			
								Soft dark brown and black firm to spongey, clayey slightly sandy pseudo fibrous PEAT. Sand is fine to coarse. (TIDAL FLAT DEPOSITS)		8.60	

Boring Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
02/07/24		66.00	29.50	146	1.85
03/07/24	08:30	68.50	67.50	N/R	1.85
	08:30	72.00	67.50	N/R	1.85

Chiselling / Slow Progress

From	To	Duration (hh:mm)
2.30	2.70	00:35

General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Inspection pit hand dug and mechanically excavated to 1.2m depth.
3. Groundwater encountered at 2.0m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**2** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								Soft greyish brown slightly organic sandy CLAY. Sand is fine to coarse. Organic content is firm, orange brown fibrous PEAT. (TIDAL FLAT DEPOSITS)		9.00 (0.50)	
9.50-9.95	7	SPT	N=7					Soft to firm grey mottled dark grey silty CLAY. (TIDAL FLAT DEPOSITS)		9.50 (4.00)	
12.50-12.95	8	SPT	N=5								
13.50-13.95	9	SPT	6,6/7,17,22,4 for 70mm					Very dense brown rounded to subrounded fine to coarse GRAVELS and COBBLES of mudstone and sandstone. (Weathered South Wales Middle Coal Measures Formation).		13.50 (1.00)	
15.00-15.45	14	SPT	N=16					Firm to stiff brown very gravelly CLAY. High subrounded cobble content of mudstone and sandstone (upto 15cm). Gravel is subrounded to rounded of mudstone and sandstone. (Weathered South Wales Middle Coal Measures Formation).		14.50	
16.50-16.95	15	SPT	N=24								

Boring Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**3** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
18.00-18.45	16	SPT	N=28					Firm to stiff brown very gravelly CLAY. High subrounded cobble content of mudstone and sandstone (upto 15cm). Gravel is subrounded to rounded of mudstone and sandstone. (Weathered South Wales Middle Coal Measures Formation). *(stratum copied from 14.50m from previous sheet)*		(7.50)	
19.50-19.95	10	SPT	N=34					. . . Sandy.			
21.00-21.45	11	SPT	N=17								
								MUDSTONE/SILTSTONE recovered as grey angular fine to coarse GRAVEL. (SOUTH WALES COAL MEASURES)		22.00 (1.50)	
22.50-22.77	12	SPT	12,10/15,35 for 40mm								
23.50-25.00 23.50-23.62	13	SPT	NP	80 9 7				Extremely weak to moderately weak destructured to partially unweathered grey brown MUDSTONE. (SOUTH WALES COAL MEASURES)		23.50 (3.00)	
25.00-26.50				73 0 0							
26.50-28.00 26.50-26.95	17	SPT(c)	N=28	76 32 32	480 FI=2			Weak to moderately weak unweathered to partially unweathered black COAL. (SOUTH WALES COAL MEASURES)		26.50 26.65	
								Description on next sheet			

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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FINAL

BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**4** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
								Moderately weak to medium strong distinctly weathered dark brownish grey MUDSTONE. (SOUTH WALES COAL MEASURES) *(stratum copied from 26.65m from previous sheet)*	1	(0.75)	
				76 32 32	480 FI=2			Weak to moderately weak unweathered to partially unweathered black COAL. (SOUTH WALES COAL MEASURES)		27.40 (0.60)	
28.00-29.50				0 0 0				No recovery. . . . No recovery between 28.0m and 29.50m.		28.00 (1.50)	ZCL
29.50-31.00 29.50-29.85	18	SPT(c)	10,11/11,22,17 for 50mm	21 21 14	80 80 80 FI=2			Strong unweathered dark grey fine SANDSTONE/SILTSTONE. (SOUTH WALES COAL MEASURES)	2[i]	29.50	
31.00-32.50				93 47 30	60 60 380 FI=8			. . . Becomes unweathered to partially unweathered weak to strong from 31.30m.	3[i]		
32.50-34.00 32.50-32.64	19	SPT(c)	14,11/50 for 30mm	101 93 73	35 130 220 FI=11				4[i]		
34.00-34.40				78 53 27	20 65 107 FI=4				5[i]		
34.40-35.50				115 32 15	20 360 100 FI=9			. . . Rare bands of medium grained sandstone from 35 - 35.5m	6[i]	(10.50)	
35.50-37.00 35.50-35.55	20	SPT(c)	25/50 for 20mm	98 39 39	110 160 260 FI=7			. . . Occasional bands of medium grained sandstone from 35.5m			

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**5** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
				98 39 39	110 160 260 FI=7			Strong unweathered dark grey fine SANDSTONE/SILTSTONE. (SOUTH WALES COAL MEASURES) *(stratum copied from 29.50m from previous sheet)*	7[i]		
37.00-38.50				93 81 73	70 100 420 FI=8				8[i]		
38.50-40.00 38.50-38.54	21	SPT(c)	25/50 for 20mm	100 73 65	100 330 FI=9			. . . Frequent bands of black organic siltstone from 38.5m	9[i]		
40.00-41.50				87 51 37	80 100 180 FI=10			Medium strong to strong unweathered dark grey SILTSTONE. (SOUTH WALES COAL MEASURES)	10[i]	40.00 (1.50)	
41.50-43.00 41.50-41.62	22	SPT(c)	25/42,8 for 5mm	100 40 13				Medium strong unweathered dark grey MUDSTONE. (SOUTH WALES COAL MEASURES)		41.50 (1.50)	
43.00-44.50				0 0 0	15 100 140 FI=14			Moderately weak to medium strong unweathered dark grey brown MUDSTONE. Rare subrounded nodules of brown fine sandstone. Rare thin bands of black coal. (SOUTH WALES COAL MEASURES) . . . Frequent thin bands of coal.	11	43.00 (1.10)	
								Extremely weak dark brown to black distinctly weathered to partially unweathered COAL. (SOUTH WALES COAL MEASURES)		44.10	
44.50-46.00 44.50-44.95	23	SPT(c)	N=25	0 0 0	80 300 690 FI=5			Very weak to moderately weak partially unweathered black COAL. (SOUTH WALES COAL MEASURES)		44.50	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**6** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
				0 0 0	80 300 690 FI=5			Very weak to moderately weak partially unweathered black COAL. (SOUTH WALES COAL MEASURES) *(stratum copied from 44.50m from previous sheet)*	12[i]	(1.50)	
46.00-47.50				97 90 85	50 270 400 FI=5			46.00 Very weak to medium strong unweathered to distinctly weathered black COAL. (SOUTH WALES COAL MEASURES) 46.35 Medium strong to strong unweathered brownish grey interbedded SILTSTONE and MUDSTONE. Rare subrounded to rounded nodules of fine sandstone. Black mottled organic inclusions at the top. (SOUTH WALES COAL MEASURES)		(1.15)	
47.50-49.00				95 85 85	125 250 355 FI=5			47.50 Very weak to moderately weak brownish grey, unweathered MUDSTONE. Frequent greyish brown subrounded to rounded nodules of sandstone upto 100m across. (SOUTH WALES COAL MEASURES)	13[i]		
49.00-50.50				98 96 93	30 200 290 FI=4			. . . Becomes moderately weak to medium strong grey with frequent very thin bands of fine grained sandstone/siltstone from 49m. . . . Nodules become rare at 49.30m	14	(3.24)	
50.50-52.00				102 88 84	50 130 360 FI=10			. . . Becomes distinctly weathered between 50.4-50.43m depth. Weak to medium strong dark grey/brownish grey unweathered MUDSTONE. Thin bands of distinctly weathered coal/organic mudstone. (SOUTH WALES COAL MEASURES)	15[i]	50.74	
								51.20 Medium strong brownish grey unweathered MUDSTONE. Rare subangular to subrounded nodules of fine sandstone. Frequent very thin bands of fine sandstone/siltstone and organic mudstone/coal. (SOUTH WALES COAL MEASURES)	16[i]		
52.00-53.50				96 67 63	35 280 340 FI=6			. . . Nodules and coal/organic mudstone no longer present from 52m depth.	17[i]	(2.50)	
53.50-55.00				100 71 71	3 5 40 FI=20			. . . Becoming moderately weak to medium strong dark grey slightly organic from 53.2n. Extremely weak distinctly weathered dark grey black COAL. Fractures are close to very close.	18	53.70	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**7** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
				100 71 71	40 30 450 FI=4			Moderately weak to medium strong unweathered brownish grey SILTSTONE. Rare subangular to rounded nodules of fine to medium SANDSTONE. (SOUTH WALES COAL MEASURES)	19[i]	54.00 (1.10)	
55.00-56.50				94 93 88	110 200 280 FI=7			Moderately weak to strong unweathered to partially weathered grey MUDSTONE. Rare subangular to rounded nodules of fine to medium sandstone. (SOUTH WALES COAL MEASURES)		55.10 (0.55)	
								Medium strong to strong unweathered brownish grey interbedded MUDSTONE and SILTSTONE. Rare subangular to rounded nodules of fine to medium sandstone. Rare black mottling (coal /petrified wood/organic mudstone). (SOUTH WALES COAL MEASURES)	20[i]	55.65	
56.50-58.00 56.50-56.54	24	SPT(c)	25/50 for 20mm	96 59 47	80 250 400 FI=6					(1.90)	
									21[i]		
								Medium strong to very strong unweathered grey fine SANDSTONE. (SOUTH WALES COAL MEASURES)		57.55 (0.95)	
58.00-59.50				96 11 11	50 150 350 FI=5			Medium strong to strong unweathered brownish grey interbedded MUDSTONE and SILTSTONE/FINE SANDSTONE. (SOUTH WALES COAL MEASURES)		58.50	
59.50-60.00				80 80 80				. . . Frequent bands/pockets of fine sandstone/siltstone	22[i]		
60.00-60.04	25	SPT(c)	25/50 for 20mm		1500 1180 1000			. . . Rare sandstone bands and occasional organic inclusions from 60.0m.	23[i]		
61.50-63.00				98 98 89	60 300 450 FI=6			. . . Becomes medium strong to strong at 61.7m Occasional nodules of subrounded to rounded fine sandstone.	24[i]		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**8** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
63.00-64.50								Medium strong to strong unweathered brownish grey interbedded MUDSTONE and SILTSTONE/FINE SANDSTONE. (SOUTH WALES COAL MEASURES) *(stratum copied from 58.50m from previous sheet)*		(9.00)	
63.00-63.05	26	SPT(c)	25/50 for 30mm	94 80 80	330 330 330 FI=2				25[i]		
64.50-66.00				103 103 103	116 410 660 FI=3				26[i]		
66.00-67.50											
66.00-66.04	27	SPT(c)	25/50 for 15mm	96 96 78	90 250 720 FI=5				27[i]		
67.50-69.00								No recovery.		67.50	
67.50-67.62	28	SPT(c)	21/50 for 40mm	0 0 0				. . . Open holed between 68.50-69.0mbgl.		(1.50)	ZCL
69.00-70.50				98 84 81	40 200 400 FI=7			Medium strong to strong unweathered brownish grey interbedded MUDSTONE and SILTSTONE/FINE SANDSTONE. (SOUTH WALES COAL MEASURES)	28[i]	69.00 (1.50)	
70.50-72.00				90 90 78	130 200 170 FI=5			Strong to extremely strong unweathered pale grey fine SANDSTONE. (SOUTH WALES COAL MEASURES) . . . Occasional thin bands of organic mudstone between 70.5 - 70.70m.	29[i]	70.50 (0.90)	
								Strong unweathered dark grey MUDSTONE. (SOUTH WALES COAL MEASURES)		71.40	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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BOREHOLE LOG

Contract:	Client:	Borehole:
P-fields	**Tata Steel UK Ltd**	**BH324**

Contract Ref:	Start: **12.06.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **04.07.24**	**5.36**	**E:277655.7 N:186412.5**	**9** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR SCR RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Fracture Log	Depth (m) (Thickness)	Legend
72.00-73.50				40 15 0				Strong unweathered dark grey MUDSTONE. (SOUTH WALES COAL MEASURES) *(stratum copied from 71.40m from previous sheet)*		(2.30)	
73.50-75.00				100 84 84	15 55 FI=7			Extremely weak to weak partially weathered to distinctly weathered black to brown COAL. (SOUTH WALES COAL MEASURES)	30	73.70 (0.80)	
								Moderately weak to medium strong partially unweathered dark grey organic MUDSTONE. (SOUTH WALES COAL MEASURES)		74.50 (0.60)	
75.00-75.10	29	SPT(c)	8/39,11 for 10mm					Terminated at 75.0mbgl		75.10	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 3000 + Beretta T41**	**CJA**	**Rachael Lockyer**	

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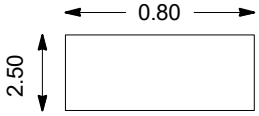
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP306**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**23.08.24** End: **23.08.24**	**---**	**E:277380.0 N:186493.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						CONCRETE.	0.20	
						MADE GROUND. Dark greyish brown sandy silty angular fine to coarse GRAVEL of various lithologies including sandstone, slag and concrete.	(1.80)	
0.50	ES1	ES		1				
						Trial pit terminated at 2.0m bgl due to significant ground water.	2.00	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 1.80m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Kieran Bancroft**	JB

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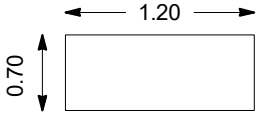
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP309**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**26.07.24** End: **26.07.24**	**7.22**	**E:277454.3 N:186377.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Grey GRAVEL of angular to subangular fine to coarse roadstone. (Hardstanding).	0.10	
0.20-0.50	1	B				MADE GROUND: Dark grey sandy GRAVEL of angular to subangular fine to coarse slag, roadstone, metal and rare brick.	(0.50)	
0.40	1	ES					0.60	
						MADE GROUND: Brown clayey GRAVEL and COBBLES of slag.	(0.40)	
1.00	2	ES					1.00	
1.00-1.50	2	B				MADE GROUND: Dark brown GRAVEL of very angular to angular fine to coarse slate and siltstone with occasional pockets of clay (30cm) and occasional angular cobbles of siltstone.	(1.50)	
2.00	3	ES		1				
2.00-2.50	3	B					2.50	
						Terminated at 2.50mbgl due to pit instability.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.1m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Jagan Raj**	JB

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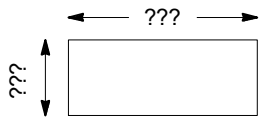
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP310**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**26.07.24**	**---**	**E:277439.0 N:186372.0**	**1** of **1**
	End: **26.07.24**			

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.70 0.70-1.50	1 1	ES B				MADE GROUND: Rounded to subrounded gravel onto dark brown slightly sandy clayey fine to coarse GRAVEL. Sand is fine to medium. Gravel is angular to subangular of mixed lithologies including brick, charcoal, plastic . . . Band of yellow brown fine to medium sand.	(1.50) 1.50	
				≈		MADE GROUND: Dark brown silty GRAVEL. Gravel is angular to subangular fine to coarse of slag and siltstone.	(0.50) 2.00	
2.50 2.50-3.40	2 2	ES B				Dark brown silty GRAVEL of very angular to angular fine to coarse slate and siltstone with occasional pockets of firm clay.	(1.40) 3.40	
						Terminated at 3.40mbgl.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.0m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Jagan Raj**	JB

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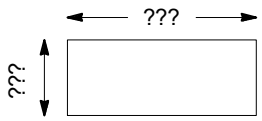
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP311**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **???**	**---**	**E:277413.0 N:186364.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Concrete onto greyish dark brown sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse angular to subangular of mixed lithologies including slag mudstone and concrete.	0.20	
0.40-0.50 0.40-0.60	1 1	ES B				MADE GROUND: Recovered as dark greyish brown sandy angular to subangular GRAVELS and COBBLES. Sand is fine to coarse. Gravel is fine to coarse of mixed lithologies including brick and clinker. Cobbles are subangular to angular of mudstone, slag, metal and brick.	(0.60) 0.80	
						MADE GROUND: Dark brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular of brick, mudstone and slag. . . . Concrete boulders	(0.60) 1.40	
						MADE GROUND: Yellowish brown fine to medium SAND	1.60	
						MADE GROUND: Dark brown gravelly clayey fine to coarse SAND with low cobble content. Gravel is angular to subangular of brick, mudstone rebar and slag. Cobbles are subangular to angular of slag concrete and brick.	(0.40) 2.00	
				≈		MADE GROUND. Black ashy sandy GRAVEL. Sand is fine to medium. Gravel is angular to subangular fine to coarse of mixed lithologies including coal, slag, shale and slate.	(0.60) 2.60	
2.50-2.60 2.50-2.60	2 2	ES B				Terminated at 2.60mbgl.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
4. Tp moved south west due to concrete obstruction, suspected old building foundation

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Adam Livesey**	JB

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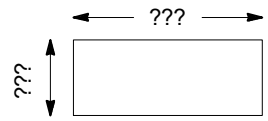
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP312**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	End: **???**	**---**	**E:277449.0 N:186346.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	ES				MADE GROUND: Greyish dark brown sandy GRAVEL with rare wood. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of mixed lithologies including concrete slag siltstone	(0.40)	
0.20-0.30	1	B					0.40	
						MADE GROUND: Dark grey sandy GRAVEL of angular to subangular fine to coarse slag, metal, coal and occassional brick. Sand is fine to coarse. . . . Concrete slab . . . Rare cobbles of slag concrete slate	(2.10)	
1.50-1.60	1	D				. . . Slate and siltstone		
2.40-2.50	2	ES					2.50	
2.40-2.50	2	B				Terminated at 2.50mbgl.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Adam Livesey**	JB

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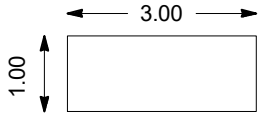
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP317**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**12.09.24** End: **12.09.24**	**---**	**E:277657.0 N:186218.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Greyish brown sandy angular fine to coarse GRAVEL of Slag.	(0.60) 0.60	
						MADE GROUND: Grey coarse GRAVEL of limestone (ballast)	(0.60) 1.20	
1.70-1.80	1	B		≈		MADE GROUND: Dark grey sandy angular fine to coarse GRAVEL and COBBLES of slag, concrete, limestone, brick. Low to medium angular boulder content of slag (upto 0.5x0.4x0.2m).	(1.40) 2.60	
						Terminated at 2.6mbgl		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.40m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Rachael Lockyer**	JB

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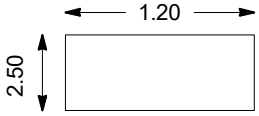
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP323**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**23.08.24** End: **23.08.24**	**---**	**E:277523.0 N:186416.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND. Grass over brown slightly sandy slightly gravelly clayey silt TOPSOIL. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and sandstone. Frequent root let's up to 1mm diameter.	0.25	
0.50	ES1	ES				MADE GROUND. Dark grey sandy angular fine to coarse GRAVEL of various lithologies including red brick and slag. Sand is fine to coarse. Very compact.	(0.55)	
							0.80	
1.30	ES2	ES		1		MADE GROUND. Dark brown black gravelly clsyey fine to coarse SAND. Gravel is angular fine to coarse of various lithologies including mudstone, red brick and slag.	(1.20)	
							2.00	
						Trial pit terminated at 2.0m bgl due to significant ground water.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 1.80m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Kieran Bancroft**	JB

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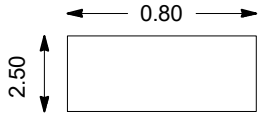
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP324**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**23.08.24** End: **23.08.24**	**---**	**E:277573.0 N:186424.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND. Dark brown sandy silt angular fine to coarse GRAVEL of various lithologies including limestone, metal and slag. Sand is fine to coarse. . . . Compacted layer of slag at 0.15m bgl.	(1.10)	
0.90	ES1	ES					1.10	
				1		MADE GROUND. Dark brown sandy clayey angular fine to coarse GRAVEL of various lithologies including red brick, metal and slag with pockets of pale orangish brown silty clay. Sand is fine to coarse.	(1.10)	
1.60	ES2	ES					2.20	
						Trial pit terminated at 2.20m bgl due to significant ground water.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 1.80m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Kieran Bancroft**	

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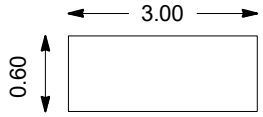
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP365**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**03.10.24** End: **03.10.24**	**---**	**E:277707.0 N:186312.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30-0.60	1	B				MADE GROUND: Dark grey to grey sandy angular coarse GRAVEL of slag. Low angular cobble content of slag. Sand is fine to coarse.	(1.20) 1.20	
1.50-1.60	2	B		≈		MADE GROUND: Dark brownish grey sandy angular fine to coarse GRAVEL of limestone, mudstone and slag. Rare fragments of metal.	(1.00) 2.20	
						Yellow brown fine to coarse SAND. (BLOWN SAND)	2.30	
						Terminated at 2.3mbgl		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.2m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Rachael Lockyer**	JB

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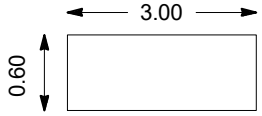
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP366**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**03.10.24** End: **03.10.24**	**---**	**E:277607.0 N:186395.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50-0.80	1	B				MADE GROUND:Dark grey to grey slightly sandy angular fine to coarse GRAVEL of slag and brick with rare clinker and tile. Medium angular cobble content. Low angular boulder content (upto 0.25m).	(1.20) 1.20	
				≈		MADE GROUND:Yellow brown slightly gravelly fine to coarse SAND. Frequent cobble size inclusions of stiff brown clay. Gravel is angular fine to coarse of slag.	(1.20) 2.40	
						. . . Possible obstruction at 2.40mbgl Terminated at 2.4mbgl.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. DEFAULT - Groundwater encountered at XX.XXm depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Rachael Lockyer**	JB

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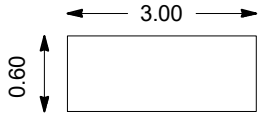
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP367**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**03.10.24** End: **03.10.24**	**---**	**E:277625.0 N:186274.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Dark brownish grey sandy angular to subrounded fine to coarse GRAVEL of slag, mudstone and brick. Low angular cobble content of slag and brick. Sand is fine to coarse.	(2.40)	
1.50-2.00	1	B		≈				
							2.40	
						Trial pit terminated at 2.4mbgl		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.4m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Rachael Lockyer**	JB

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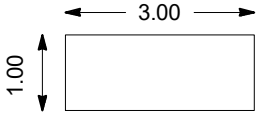
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
P-fields	**Tata Steel UK Ltd**	**TP368**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
315768	**03.10.24** End: **03.10.24**	**---**	**E:277550.0 N:186350.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50-1.00	1	B				MADE GROUND: Grey mottled yellow brown slightly sandy angular fine to coarse GRAVEL and COBBLES of concrete and very rare slag. Sand is fine to coarse.	(1.00)	
							1.00	
1.00-1.50	2	B				MADE GROUND: Black slightly ashy angular fine to coarse GRAVEL of mudstone and coal.	(1.50)	
							2.50	
						Terminated at 2.5mbgl		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT, Genny and GPR prior to excavation.
2. Groundwater encountered at 2.5m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**13 Ton Tracked Excavator**	**Rachael Lockyer**	JB

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RSK GEOSCIENCES

RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**15.10.21** End: **19.11.21**	**---**	**E:277486.3 N:186412.6**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND. Grass over soft brown slight sandy slightly gravelly SILT. Sand is fine and medium. Gravel is angular fine and medium of slag and brick.	0.20	
										[Open Hole]. MADE GROUND. Dark brownish grey gravelly SAND with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag and occasional brick.	(5.80)	
3.00-3.45	1	SPT(c)	N=20						2			
											6.00	
										Dark grey to light greyish brown slightly silty SAND. Sand is fine and medium.		
6.45-6.56	2	SPT(c)	1/2 for 35mm								(3.65)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater strike encountered at 1.90m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log COMPOSITE LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**15.10.21** End: **19.11.21**	**---**	**E:277486.3 N:186412.6**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Dark grey to light greyish brown slightly silty SAND. Sand is fine and medium. *(stratum copied from 6.00m from previous sheet)*	9.65	
9.65-9.80	1	B								Dark grey to light greyish brown silty SAND. Sand is fine.	(0.95)	
10.50-10.70	3	SPT(c)	2,1/2 for 50mm								10.60	
11.00-11.20	2	D								Soft to firm light blueish grey slightly peaty slightly sandy clayey SILT. Sand is fine. . . . 10.60m to 10.80m; soft. . . . 11.50m to 12.00m; dark brown fibrous peat.	(1.80)	
12.50-13.00	3	B								Dark brown fibrous locally amorphous PEAT. . . . 12.40m to 12.50m; amorphous peat.	12.40 (0.70) 13.10	
13.40-13.50	4	D								Stiff to firm blueish grey sandy SILT. Sand is fine.	13.50	
										Borehole terminated early due to ground gas encountered during drilling. Rotary borehole terminated at 13.50m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.11.21** End: **11.11.21**	**---**	**E:277282.0 N:186206.8**	**1** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Dark grey slightly sandy slightly clayey GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of slag.	(1.00) 1.00	
1.00-1.00	1	ES	1xT+1xJ+1xV							Light brown to greyish brown SAND. Sand is fine and medium.		
2.00-2.00	2	ES	1xT+1xJ+1xV									
3.00-3.00	3	ES	1xT+1xJ+1xV								(4.00)	
4.00-4.00	4	ES	1xT+1xJ+1xV									
5.00-5.00	5	ES	1xT+1xJ+1xV								5.00	
										Grey slightly silty SAND. Sand is fine.	(2.00)	
7.00-8.50											7.00	
7.00-7.23	1	SPT	/1,1,1 for 75mm	100						Grey locally dark grey SAND. Sand is fine and medium.		
7.10-7.10	6	ES	1xT+1xJ+1xV								(1.25)	
											8.25	
8.50-10.00										Grey clayey SAND. Sand is fine and medium.		
8.60-8.60	7	ES	1xT+1xJ+1xV	100							8.70	
										Description on next sheet		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.11.21** End: **11.11.21**	**---**	**E:277282.0 N:186206.8**	**2** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Soft grey slightly sandy silty CLAY. Sand is fine. With fibrous peat. *(stratum copied from 8.70m from previous sheet)* . . . 9.32m to 9.38m; peaty clay. . . . 9.38m to 9.41m; slightly clayey fibrous peat.	(0.71) 9.41	
9.60-9.60	8	ES	1xT+1xJ+1xV	100							(0.59)	
										Soft grey to blueish grey sandy CLAY. Sand is fine.	10.00	
10.00-10.45	2	SPT	N=32							Soft to firm grey slightly peaty silty CLAY. . . . 10.00m to 10.30m; soft to friable brown slightly clayey pseudo-fibrous peat.	(1.70)	
10.30-10.30	9	ES	1xT+1xJ+1xV									
11.50-13.00											11.70	
11.50-11.50	10	ES	1xT+1xJ+1xV	100						Soft to firm grey sandy CLAY. Sand is fine.	(1.40)	
13.00-14.50											13.10	
13.00-13.23	3	SPT	1/1,1 for 75mm							Grey clayey SAND. Sand is fine.	(1.40)	
13.00-13.00	11	ES	1xT+1xJ+1xV	100						. . . 14.07m to 14.17m; fine sand . . . 14.17m to 14.38m; slightly sandy silty clay.	14.50	
14.50-16.00				100						Soft grey sandy SILT. Sand is fine.	(1.00)	
										Grey silty SAND. Sand is fine.	15.50 (0.50)	
											16.00	
16.00-17.50										Grey slightly silty SAND. Sand is fine. . . . 16.00m to 16.80m; loose slightly silty sand.	(1.70)	
16.00-16.23	4	SPT	1/1,1,1/1,1 for 75mm	100								
17.50-19.00				87							17.70	
										Firm grey slightly peaty silty CLAY.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.11.21** End: **11.11.21**	**---**	**E:277282.0 N:186206.8**	**3** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				87						Firm grey slightly peaty silty CLAY. *(stratum copied from 17.70m from previous sheet)*	(1.10)	
										. . . 18.55m to 18.66m; fibrous peat.	18.80	
19.00-20.00 19.00-19.44	5	SPT	5,8/12,12,13,13 for 67mm	100						Firm to stiff grey locally light brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse, predominantly fine and medium. Gravel is angular to subrounded fine to coarse of mudstone and occasional sandstone. . . . 18.80m to 19.23m; firm. . . . 19.00m to 19.08m; fine and medium Sand.	(3.70)	
											22.50	
22.50-22.95	6	SPT	N=36							Grey slightly silty gravelly SAND. Sand is fine to coarse. Gravel is subangular and subrounded fine and medium of siltstone and sandstone.	(4.30)	
25.50-25.87	7	SPT	5,12/13,19,18 for 73mm									
											26.80	
										Description on next sheet		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.11.21** End: **11.11.21**	**---**	**E:277282.0 N:186206.8**	**4** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Possible boulder Clay. Recovered as grey sandy clayey GRAVEL. Sand is fine to coarse. Gravel is subangular to rounded fine and medium of siltstone and sandstone. *(stratum copied from 26.80m from previous sheet)*	(5.00)	
											31.80	
										Possible SILTSTONE. Recovered as sandy GRAVEL. Sand is fine to coarse. Gravel is angular of siltstone.	(2.20)	
											34.00	
										Rotary borehole terminated at 34.00m depth.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**22.11.21** End: **01.12.21**	**---**	**E:277262.0 N:186016.0**	**1** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.50	1	B								MADE GROUND: Dark brown/ black gravelly SILT. Gravels are angular to subrounded fine to coarse slag and clinker.	(0.50) 0.50	
0.50-1.00	2	B								MADE GROUND:Dark grey gravelly medium to coarse SAND of clinker and slag material. Gravels are angular to subrounded fine to coarse clinker and slag.	(2.50) 3.00	
3.00-3.30	1	SPT	1/1,1,1 for 75mm							Dark grey fine to medium SAND with rare sandstone gravels and cobbles	(1.00) 4.00	
3.50	1	ES										
										Brown silty fine to medium SAND with occasional reeds or seaweed.	(0.50) 4.50	
4.50-5.20	3	B								Light grey fine to medium SAND.	(0.70) 5.20	
6.00	1	D								Light grey and brown mottled CLAY.	(2.20) 7.40	
6.00-6.23	2	SPT	1/1,1 for 75mm									
										Reddish brown fibrous PEAT horizon with frequent wood inclusions.	(1.10) 8.50	
										Soft light grey CLAY . . . Occasional wood inclusions at the top of the strata		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater strike encountered at 1.90m

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**AGMay**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**22.11.21** End: **01.12.21**	**---**	**E:277262.0 N:186016.0**	**2** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	2	D								Soft light grey CLAY . . . Occasional wood inclusions at the top of the strata*(stratum copied from 8.50m from previous* sheet)	(1.70)	
9.00-9.30	3	SPT	1/1,1,1 for 75mm								10.20	
10.50-10.65	4	SPT	1/1,1,1/1,1 for 75mm							Light grey clayey fine to medium SAND with occasional shell fragments. . . . Becoming a sandy clay.	(0.90) 11.10	
										Light grey fine to medium SAND	(0.90) 12.00	
12.00-13.50	4	B								Light grey slightly clayey fine to medium SAND (very little recovery, sloppy sample)		
12.00-12.23	5	SPT	1/1,1,1/1,1/1,1,1 for 75mm									
13.50-15.00	5	B									(3.00)	
13.50-13.88	6	SPT	N=4								15.00	
15.00-15.45	7	SPT	N=5							Soft light grey sandy CLAY with occasional shell fragments.	(1.50)	
16.40	3	D									16.50	
16.50-18.00	6	B								Firm to stiff dark brown slightly sandy gravelly CLAY with rare pale yellow brown sand inclusions. Gravels are subangular to subrounded fine to coarse sandstone. Poor recovery from 16.5 to 18 and 19.5 to 22.5. Only bulk samples recovered, highly disturbed.		
16.50-16.64	8	SPT	NP									

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**AGMay**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**22.11.21** End: **01.12.21**	**---**	**E:277262.0 N:186016.0**	**3** of **4**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	9	SPT	N=37							Firm to stiff dark brown slightly sandy gravelly CLAY with rare pale yellow brown sand inclusions. Gravels are subangular to subrounded fine to coarse sandstone.		
										Poor recovery from 16.5 to 18 and 19.5 to 22.5. Only bulk samples recovered, highly disturbed. *(stratum copied from 16.50m from previous sheet)*		
19.00	4	D										
19.00-19.30	10	SPT	10,15/25,17,8 for 31mm									
19.50-21.00	7	B									(6.70)	
20.50-20.67	11	SPT	19,6/39,11 for 7mm									
21.00-22.50	8	B										
22.00-22.45	12	SPT	4,6/10,11,13,16 for 70mm									
											23.20	
										Stiff grey slightly gravelly CLAY with rare black mottling. Gravels are angular to subrounded fine to medium clay stone.		
23.50-24.00	5	D										
23.50-23.90	13	SPT	5,8/13,15,16,6 for 20mm									
24.00-25.50	9	B										
25.00-25.30	14	SPT	6,10/19,26,3 for 4mm									
											(6.60)	
26.50-26.83	15	SPT	6,13/16,22,12 for 31mm									

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**AGMay**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**22.11.21** End: **01.12.21**	**---**	**E:277262.0 N:186016.0**	**4** of **4**

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
28.00-28.14	16	SPT	25,39/11 for 17mm							Stiff grey slightly gravelly CLAY with rare black mottling. Gravels are angular to subrounded fine to medium clay stone. *(stratum copied from 23.20m from previous sheet)*		
29.50-29.62	17	SPT	9,16/50 for 22mm								29.80	
										Possible weathered MUDSTONE. Recovered as sandy gravel. Sand is fine to coarse. Gravel is angular fine to coarse of mudstone lithorelics.	(1.30)	
											31.10	
										Very weak dark grey MUDSTONE.	(1.50)	
											32.60	
										Rotary borehole terminated at 32.60m depth.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**AGMay**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.10.21** End: **20.10.21**	**---**	**E:277547.3 N:185924.7**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Grass over slightly sandy gravelly SILT. Sand is fine to coarse. Gravel is angular and sub-angular fine to coarse of clinker and slag.	0.20	
1.00-1.18	1	SPT(c)	17,8/38,12 for 11mm							MADE GROUND: Dark grey slightly silty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and sub-angular fine to coarse of clicker and slag. Cobbles are angular of slag (<30mm x 65mm x 80mm).	(1.30) 1.50	
									1.2	MADE GROUND: Recovered as COBBLES. Cobbles are sub-angular of slag (<50mm x 75mm x 95mm).	(0.50) 2.00	
										MADE GROUND: Dark grey slightly silty sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular and sub-angular fine to coarse of clicker and slag. Cobbles are angular of slag (<40mm x 75mm x 80mm).	(1.60) 3.60	
4.00-5.00 4.00-4.15 4.00-4.00 4.00	2 2	SPT ES PID	1/,1 for 75mm 1xT+1xJ+1xV 1.8ppm	100						Soft to firm grey locally bluish grey with black speckling slightly peaty silty CLAY. With mild to strong hydrocarbon odour.	(1.40) 5.00	
										Soft dark brown fibrous PEAT. (From spts, no recovery)	(2.00) 7.00	
7.00-8.50 7.00-7.23 7.50-7.50 7.50	3 3	SPT ES PID	1/,1,2 for 75mm 1xT+1xJ+1xV 6.4ppm	47						ASSUMED ZONE OF CORE LOSS.	(0.80) 7.80	VOID
8.50-10.00 8.60-8.60 8.60	4	ES PID	1xT+1xJ+1xV 2.0ppm	93						Soft dark brown slightly silty fibrous to pseudo-fibrous PEAT with lenses of clay silt (<10mm x 40mm). With mild to strong hydrocarbon odour. . . . 8.50m to 8.60m; assumed zone of core loss.	(1.40)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater strike encountered at 2.00m and 19.00m and rising to 2.00m

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.10.21** End: **20.10.21**	**---**	**E:277547.3 N:185924.7**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
											9.20	
				93						Soft to firm blueish grey slightly peaty to peaty clayey SILT. With hydrocarbon odour. . . . 9.20m to 10.60m; peaty.		
10.00-11.50											(1.80)	
10.00-10.15	4	SPT	1/,1,2,1/,1 for 75mm							. . . 10.00m to 10.35m; assumed zone of core loss.		
10.40-10.40	5	ES	1xT+1xJ+1xV									
10.40		PID	0.9ppm	77							11.00	
										Soft to firm grey slightly sandy SILT. Sand is fine.	(0.50)	
											11.50	
11.50-13.00										Soft to firm blueish grey SILT. . . . 11.50m to 11.80m; assumed zone of core loss.		
11.90-11.90	6	ES	1xT+1xJ+1xV								(1.30)	
11.90		PID	0.0ppm	80							12.80	
13.00-14.50										Soft to firm grey slightly peaty clayey SILT.		
13.00-13.38	5	SPT	N=4								(1.20)	
13.50-13.50	7	ES	1xT+1xJ+1xV									
13.50		PID	0.0ppm	100							14.00	
										Soft to firm dark grey slightly peaty slightly sandy SILT. Sand is fine.	(0.50)	
											14.50	
14.50-14.90										Soft grey slightly gravelly sandy SILT. Sand is fine. Gravel is angular fine and medium of siltstone lithorelicts.	(0.50)	
14.50-14.50	8	ES	1xT+1xJ+1xV	100							15.00	
14.50		PID	0.0ppm									
15.00-16.20										Medium dense greenish grey sandy silty fine to coarse angular to subrounded GRAVEL of mudstone and sandstone.	15.30	
15.00-15.45	6	SPT	N=35							Firm greenish grey slightly sandy gravelly CLAY. Sand is fine. Gravels are fine to coarse subangular to rounded mudstone and sandstone.	(0.90)	
				90							16.20	
16.20-17.50										Firm greenish grey slightly sandy SILT.		
				50							(2.30)	
17.50-18.50												
17.50-17.95	7	SPT	N=44	0								

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

after 20 minutes.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.10.21** End: **20.10.21**	**---**	**E:277547.3 N:185924.7**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				0						Firm greenish grey slightly sandy SILT. *(stratum copied from 16.20m from previous sheet)*	18.50	
18.50-20.00				0					2	Medium dense greenish grey sandy silty fine to coarse angular to subrounded GRAVEL of mudstone and sandstone.	(2.50)	
20.00-21.50				0							21.00	
21.00-21.45	8	SPT(c)	N=28							Firm greenish grey slightly sandy gravelly SILT.		
21.50-23.00				0								
23.00-24.50				0							(4.70)	
24.00-24.41	9	SPT	7,8/10,14,16,10 for 36mm								25.70	
										Possible weathered SILTSTONE. Recovered as gravelly SILT. Gravels are fine and medium angular of siltstone lithorelics.	(0.70)	
											26.40	
										Rotary borehole terminated at 26.40m due to SPT refusal on rockhead.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.11.21** End: **26.01.22**	**---**	**E:277894.0 N:185891.0**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND. Dark grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone and abundant slag.	(1.10) 1.10	
										MADE GROUND. Grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag. Cobbles are angular of slag (<50mm x 90mm x 200mm).	(3.40) 4.50	
3.45-3.90	1	SPT(c)	N=12									
										Soft grey slightly sandy silty CLAY.	(1.50) 6.00	
6.45-6.68	2	SPT(c)	1/1,1 for 75mm							Soft grey sandy SILT.	(3.00) 9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**CJA**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.11.21** End: **26.01.22**	**---**	**E:277894.0 N:185891.0**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Soft to firm blueish grey slightly sandy peaty CLAY SILT.	(2.00) 11.00	
										Soft brown psuedo-fibrous clayey PEAT.	(0.50) 11.50	
										Soft to firm blueish grey slightly sandy clayey SILT.	(0.50) 12.00	
										Grey sandy clayey GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.	(1.00) 13.00	
										Grey slightly clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. Cobbles are subrounded of siltstone (<20mm x 70mm x 180mm).	(3.00) 16.00	
										Grey sandy clayey GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. Cobbles are subrounded of siltstone (<30mm x 90mm x 160mm).	(4.00)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**CJA**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.11.21** End: **26.01.22**	**---**	**E:277894.0 N:185891.0**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Grey sandy clayey GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. Cobbles are subrounded of siltstone (<30mm x 90mm x 160mm). *(stratum copied from 16.00m from previous sheet)*		
										Rockhead not encountered. Rotary and Cable Percussion borehole terminated at 20.00m.	20.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Rotary Cored	**Beretta T41**	**CJA**	**RHorne**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.01.22** End: **18.01.22**	**---**	**E:278238.0 N:185582.0**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Dark greyish brown slighty silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and abundant slag and brick.	(1.50)	
1.00-1.50	1	B						
1.00-1.00	28	ES						
1.00		PID	0.1ppm					
1.50-1.95	2	SPT	N=8				1.50	
						MADE GROUND (Reworked clay). Soft dark grey mottled orangeish brown slightly sandy silty CLAY. Sand is fine.	(0.80)	
							2.30	
						Soft light greyish brown slighty sandy clayey SILT. Sand is fine.		
2.50-3.00	3	B						
2.70-2.70	29	ES						
2.70		PID	0.0ppm					
3.00-3.15	4	SPT	1/,1 for 75mm		1.1		(1.70)	
							4.00	
4.00-4.50	5	B				Soft grey silty CLAY with occasional shell fragments (<3mm x 10mm).		
4.50-4.95	6	SPT	N=4					
							(2.20)	
5.50-6.00	7	B						
6.00-6.45	8	SPT	N=6				6.20	
						Soft grey peaty silty CLAY. Peat is fibrous.	(0.80)	
							7.00	
7.00-7.50	9	B				Dark brown slightly clayey fibrous PEAT.	(0.50)	
7.00-7.45	10	SPT	N=7				7.50	
						Soft grey to dark grey slightly sandy peaty silty CLAY. Peat is fibrous.		
8.50-9.00	11	B					(2.70)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000**	**Phil Chappel**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.01.22** End: **18.01.22**	**---**	**E:278238.0 N:185582.0**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.38	12	SPT	1,1/,1,1,1 for 75mm			Soft grey to dark grey slightly sandy peaty silty CLAY. Peat is fibrous. *(stratum copied from 7.50m from previous sheet)*	10.20	
10.20-10.60	13	B				Firm grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine and medium of sandstone.	(0.70)	
10.60-10.83	14	SPT	5,10/25 for 75mm				10.90	
11.50-12.00	15	B				Grey sandy clayey GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of sandstone and siltstone.	(2.10)	
12.00-12.45	16	SPT	N=28				13.00	
13.00-13.50	17	B				Grey slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of sandstone and siltstone.	(1.10)	
13.50-13.95	18	SPT	N=36				14.10	
14.10-14.80	19	B				Grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of sandstone and siltstone.	(0.70)	
14.80-15.00	20	B					14.80	
15.00-15.45	21	SPT	N=29			Grey slightly clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of sandstone and siltstone.	(1.20)	
16.00-16.60	22	B				Grey slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of sandstone and siltstone.	16.00	
16.60-16.99	23	SPT	7,9/13,13,16,8 for 15mm				(2.10)	
17.60-18.00	24	B						

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

4. Groundwater strike encountered at 3.30m rising to 3.00m after 20 minutes.
5. SPT hammer 110.70-2021 (E_r = 78.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000**	**Phil Chappel**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.01.22** End: **18.01.22**	**---**	**E:278238.0 N:185582.0**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	25	SPT	N=34			Grey weathered MUDSTONE. Recovered as sandy silty GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of mudstone lithorelics.	18.10	
18.60-19.00	26	B					(1.00)	
19.00-19.10	27	SPT	NP			Cable Percussion borehole terminated at 19.10m depth.	19.10	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Dando 3000**	**Phil Chappel**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **14.01.22**	**---**	**E:277936.7 N:185013.4**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Grass followed by dark brown slightly sandy silty CLAY with many rootlets. (TOPSOIL)	0.40	
0.50	1	ES	1xT, 1xJ, 1xV							Soft to firm greenish grey clayey SILT.		
1.00-1.23	1	SPT	/1,1,1 for 75mm									
1.00	2	D										
1.50	3	ES	1xT, 1xJ, 1xV									
2.00-2.15	2	SPT	/1,1,1/1,1 for 75mm									
2.00	4	D									(4.20)	
2.60	5	D										
3.60	6	D										
4.00-4.30	3	SPT	/1,1,1/1,1,1/1,1,1 for 75mm									
											4.60	
4.60	7	D								Firm grey mottled brown very sandy gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse subangular to rounded mixed lithologies.	(2.20)	
5.50-5.95	4	SPT	N=36									
											6.80	
6.90	8	D								Firm greyish brown slightly sandy clayey SILT	(0.90)	
7.00-7.45	5	SPT	N=26									
											7.70	
										Medium dense greyish brown silty fine to coarse SAND.	8.20	
8.50-8.95	6	SPT	N=25							Firm brownish grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse. Gravels and cobbles are subangular to rounded sandstone and mudstone.		

Window run 65mm dia (95% rec)

Window run 65mm dia (90% rec)

Window run 65mm dia (95% rec)

Window run 65mm dia (100% rec)

Window run 65mm dia (50% rec)

Window run 65mm dia (95% rec)

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater seepage encountered at 0.80m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **14.01.22**	**---**	**E:277936.7 N:185013.4**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	9	D		Window run 65mm dia (95% rec)						Firm brownish grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse. Gravels and cobbles are subangular to rounded sandstone and mudstone. *(stratum copied from 8.20m from previous sheet)*	(3.30)	
10.00-10.45	7	SPT	N=20									
10.50	10	D		Window run 65mm dia (95% rec)								
											11.50	
11.50-11.85	8	SPT	17,8/17,10,12,11 for 21mm							Firm grey sandy clayey SILT.	11.90	
11.60	11	D		Window run 65mm dia (80% rec)						Firm grey sandy gravelly SILT. Gravels are fine to coarse subangular to rounded sandstone and mudstone.	(0.70)	
											12.60	
12.80	12	D								Medium dense greyish brown gravelly coarse SAND.	(0.50)	
13.00-13.45	9	SPT	N=32	Window run 65mm dia (0% rec)							13.10	
14.50-14.95	10	SPT	N=34	Window run 65mm dia (0% rec)						Firm grey sandy gravelly SILT. Gravels are fine to coarse subangular to rounded sandstone and mudstone.	(7.40)	
16.00-16.45	11	SPT	N=43	Window run 65mm dia (0% rec)								
17.50-17.95	12	SPT	N=46	Window run 65mm dia (0% rec)								

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **14.01.22**	**---**	**E:277936.7 N:185013.4**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
19.00-19.08	13	SPT	NP	Window run 65mm dia (0% rec)						Firm grey sandy gravelly SILT. Gravels are fine to coarse subangular to rounded sandstone and mudstone. *(stratum copied from 13.10m from previous sheet)*	20.50	
20.60-22.00				100	80	30				Weak moderate strong occasionally friable anthrocite COAL with occasinal pyrite.	(3.00)	
22.00-23.50 22.10	13	D		100	70	40					23.50	
										Rotary borehole terminated at 23.50m depth.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.01.22** End: **09.01.22**	**---**	**E:277861.0 N:185422.0**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Grass followed by dark brown slightly sandy silty CLAY with many rootlets. (TOPSOIL)	0.40	
0.50	1	ES	1xT, 1xJ, 1xV							Soft brown mottled grey silty CLAY.		
1.00-1.45	1	SPT	N=5									
1.20	2	ES	1xT, 1xJ, 1xV									
1.50	3	D		Window run 65mm dia (80% rec)							(3.30)	
2.50-2.73	2	SPT	1/1,1 for 75mm									
2.50	4	D		Window run 65mm dia (70% rec)								
3.80	5	ES	1xT, 1xJ, 1xV								3.70	
4.00-4.30	3	SPT	1/1,1,1/,1,2,2 for 75mm							Firm grey slightly clayey SILT.	(0.80)	
4.70	6	D		Window run 65mm dia (80% rec)							4.50	
										Spongy dark brown pseudofibrous PEAT with slight organic odour.	(0.70)	
											5.20	
										Soft becoming firm grey clayey SILT. Frequent organic remains/fibres.	(0.50)	
5.50-5.88	4	SPT	1,1/1,1,1 for 75mm								5.70	
				Window run 65mm dia (90% rec)						Firm grey slightly gravelly sandy SILT with occasional organic remains/fibres. Gravel is fine to coarse subangular to rounded sandstone and mudstone.	(1.30)	
7.00-7.15	5	SPT	1,1/1,1,1,1/,1 for 75mm								7.00	
7.50-8.00	7	B		Window run 65mm dia (100% rec)						Medium dense grey gravelly silty fine to coarse SAND. Gravels are fine to coarse angular to rounded sandstone and mudstone.		
8.50-8.95	6	SPT	N=20	Window run 65mm dia (95% rec)							(3.80)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater strike encountered at 0.45m rising to 0.37m after 20 minutes and

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.01.22** End: **09.01.22**	**---**	**E:277861.0 N:185422.0**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.50	8	D		Window run 65mm dia (95% rec)						Medium dense grey gravelly silty fine to coarse SAND. Gravels are fine to coarse angular to rounded sandstone and mudstone. *(stratum copied from 7.00m from previous sheet)*	10.80	
10.00-10.45 10.00-10.80	7 9	SPT B	N=32	Window run 65mm dia (40% rec)								
11.50-11.95	8	SPT	N=25	Window run 65mm dia (0% rec)						Soft to firm greyish brown sandy gravelly SILT. Gravels are fine to coarse subangular to rounded sandstone and mudstone.	(9.80)	
13.00-13.33	9	SPT	5,9/15,20,15 for 32mm	Window run 65mm dia (0% rec)								
14.50-14.80	10	SPT	6,8/18,27,5 for 4mm	Window run 65mm dia (0% rec)								
16.00-16.12	11	SPT	8,17/50 for 22mm	Window run 65mm dia (0% rec)								
17.50-17.68	12	SPT	19,6/39,11 for 18mm	Window run 65mm dia (0% rec)								

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

again at 20.10m.
5. Inspection pit hand dug to 1.2m depth.
6. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7.0m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.01.22** End: **09.01.22**	**---**	**E:277861.0 N:185422.0**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				Window run 65mm dia (0% rec)						Soft to firm greyish brown sandy gravelly SILT. Gravels are fine to coarse subangular to rounded sandstone and mudstone. *(stratum copied from 10.80m from previous sheet)*		
19.00-19.11	13	SPT	NP	Window run 65mm dia (0% rec)								
											20.60	
20.60-22.00										Strong grey MUDSTONE.		
20.60-20.69	14	SPT	NP	95	80	0				Gravel band		
										Gravel band		
											(2.90)	
22.00-23.50				100	95	10				Gravel band		
											23.50	
										Rotary borehole terminated at 23.50m.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Dynamic sampling + Rotary Cored	**Beretta T41**	**G.Haddock**	**CLewis**	JCB

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RAW FIELD DATA

BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.12.21** End: **13.12.21**	**---**	**E:277590.0 N:185693.0**	**1** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND. Moss over soft very dark brown slightly gravelly CLAY. Gravel is angular fine to coarse of slag.	0.05	
										MADE GROUND. Dark grey sandy GRAVEL with low cobble content. Sand is fine to coarse.Gravel is angular to subrounded fine to coarse of slag occasional brick. Cobbles are angular of slag (<40mm x 90mm x 120mm).	(1.95)	
											2.00	
										MADE GROUND. Dark grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of slag.	2.15	
2.70-2.70 2.70	1	ES PID	1xT+1xJ+1xV 0.5ppm							MADE GROUND. Dark grey slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of slag.	(0.95)	
3.10-3.50	4	B									3.10	
										Soft to firm grey to blueish grey mottled orange silty CLAY. With occasional decaying rootless (<1mm x 8mm).		
3.70-3.70 3.70	2	ES PID	1xT+1xJ+1xV 0.1ppm									
3.80-3.80	3	D									(2.40)	
5.00-5.30	1	SPT	1/,1,1,2 for 75mm									
											5.50	
										Soft blueish grey CLAY.	(1.00)	
6.00-6.00	5	D									6.50	
										Soft to firm blueish grey peaty CLAY. . . . 6.55m to 6.70m; brown psuedo-fibrous peat.	6.95	
7.00-7.50	6	B								Dark brown slightly clayey psuedo-fibrous PEAT.	(0.95)	
										. . . 7.75m to 7.90m: clayey peat.	7.90	
										Soft blueish grey slightly peaty CLAY.		
8.50-8.80	2	SPT	1/,1,1,2,1/1,1,1 for 75mm									

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.
4. Groundwater strike encountered at 10.00m and 16.80m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.12.21** End: **13.12.21**	**---**	**E:277590.0 N:185693.0**	**2** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.00	7	D								Soft blueish grey slightly peaty CLAY. *(stratum copied from 7.90m from previous sheet)*	(2.40)	
									1	. . . 9.70m to 10.00m; firm.		
10.00-10.15	3	SPT	1/,1 for 75mm								10.30	
10.50-10.50	8	D								Soft to firm blueish grey locally dark grey silty CLAY. With occasional decaying rootlets (1mm x 15mm) and rare shell fragments (<2mm x 6mm x 8mm).	(1.90)	
11.50-11.95	4	SPT	N=5							. . . 11.50m to 11.80m; soft clay.		
12.00-12.00	9	D									12.20	
										Soft blueish grey silty CLAY.		
13.00-13.23	5	SPT	1/,1/1,1,1 for 75mm								(1.90)	
											14.10	
14.10-14.50	10	B								Firm blueish grey peaty CLAY with frequent decaying plant material (2mm x 5mm x 20mm).	14.50	
14.50-14.79	6	SPT	11,14/18,25,7 for 9mm							Firm to stiff slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine and medium of sandstone and mudstone. With occasional light brown sand inclusions.		
14.50-14.80	11	B								. . . 14.80m to 22.00m; poor recovery, fines possibly washed out, recovered only as highly disturbed bulks.		
16.00-16.45	7	SPT	N=48						2		(3.00)	
											17.50	
17.50-17.81	8	SPT	5,13/21,22,7 for 11mm							*Description on next sheet*		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.12.21** End: **13.12.21**	**---**	**E:277590.0 N:185693.0**	**3** of **3**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Grey slightly sandy clayey GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine and medium of sandstone and mudstone. *(stratum copied from 17.50m from previous sheet)*	(4.50)	
19.00-19.45	9	SPT	N=49									
20.50-20.78	10	SPT	10,15/28,16,6 for 10mm								22.00	
22.00-22.10	11	SPT	NP							Possible weathered MUDSTONE. Recovered as soft grey slightly gravelly CLAY. Gravel is angular fine and medium of extremely weak mudstone lithorelics.	(2.00)	
											24.00	
										COAL.	(0.50)	
											24.50	
24.50-24.82	12	SPT	5,9/16,25,9 for 17mm							Extremely weak to very weak grey MUDSTONE.	(2.30)	
26.50-26.80	13	SPT	7,10/22,28 for 75mm								26.80	
										Rotary borehole terminated at 26.80m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Rotary Cored	**Beretta T41**	**G. Haddock**	**RHorne**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **13.01.22**	**---**	**E:278445.0 N:185460.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Grass followed by dark grey GRAVEL and COBBLES of slag and ballast. (TOPSOIL)	(1.00)	
1.00-1.45	1	SPT	N=22			Very soft grey slightly gravelly clayey SILT. Occasional slag and ballast.	1.00 (0.50)	
1.50	2	D				Very soft to soft greenish grey clayey SILT.	1.50	
2.50	3	B					(2.50)	
3.00-3.15	4	SPT	1/,1 for 75mm		1			
							4.00	
4.00	5	B				Soft to firm grey clayey SILT.	(0.60)	
4.50-4.95	6	SPT	N=7				4.60	
						Spongy pseudofibrous dark brown PEAT.	(0.90)	
5.50	7	B			2		5.50	
5.50-5.95	8	SPT	N=5			Soft grey clayey SILT with occasional organic remains/fibres.	(0.50)	
							6.00	
					3	Very soft grey clayey SILT.		
7.00	9	B						
7.50-7.58	10	SPT	NP				(3.70)	
8.50	11	B						

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.2m depth.
3. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 7m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Unknown**	**Phil Chappel**	**CLewis**	JCB

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BOREHOLE LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **13.01.22**	**---**	**E:278445.0 N:185460.0**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.23	12	SPT	1/1,1 for 75mm			Very soft grey clayey SILT. *(stratum copied from 6.00m from previous sheet)*	9.70	
10.00	13	B				Dense to very dense brown sandy silty fine to coarse subangular to well rounded GRAVEL of mudstone and sandstone.	(1.80)	
10.50-10.90	14	SPT	3,10/14,14,14,8 for 20mm				11.50	
11.00	15	B						
11.50	16	B				Soft to firm gravelly silty CLAY with medium cobble content. occasional thin silt bands. Gravels are fine to coarse. Gravels and cobbles are subangular to rounded mudstone and sandstone.	(1.50)	
12.00-12.45	17	SPT	N=9				13.00	
13.00	18	B				Dense brown sandy silty fine to coarse subangular to rounded GRAVEL of mudstone and sandstone with medium cobble content.	(2.90)	
13.70-14.15	19	SPT	N=31					
14.50	20	B						
15.10-15.55	21	SPT	N=29				15.90	
15.60	22	B						
15.90	23	B				Weak becoming strong thinly laminated weathered MUDSTONE.	(1.00)	
16.60-16.85	24	SPT	3,5/15,35 for 20mm				16.90	
						Cable Percussion borehole terminated at 16.90m due to sampler and SPT refusal.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

4. Groundwater strike encountered at 3.50m rising to 3.20m after 20 minutes and again at 6.50m rising to 5.70m after 20 minutes.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion	**Unknown**	**Phil Chappel**	**CLewis**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH201**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.04.22** End: **06.04.22**	**6.02**	**E:277419.7 N:185839.6**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Grass over black slightly gravelly SAND. Sand is fine. Gravel is angular and subangular fine and medium of abundant slag.	0.15	
						MADE GROUND. Dark grey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag and brick. With slight hydrocarbon odour.	(1.25)	
							1.40	
1.60 1.60	1	ES PID	1xT+1xJ+1xV 4.0ppm			MADE GROUND. Brown locally grey slightly gravelly silty SAND with low cobble content. Sand is fine. Gravel is subangular fine and medium of sandstone and slag. With moderate hydrocarbon odour and visual evidence of olfactory contamination.	(3.60)	
3.90 3.90	2	ES PID	1xT+1xJ+1xV 17.0ppm					
							5.00	
5.50 5.50	3	ES PID	1xT+1xJ+1xV 3.0ppm			Soft grey CLAY. With slight hydrocarbon odour.	(1.00)	
							6.00	
6.50 6.50	4	ES PID	1xT+1xJ+1xV 1.7ppm			Soft brown psuedo-fibrous PEAT.	(3.00)	
							9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20mm depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH201**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.04.22** End: **06.04.22**	**6.02**	**E:277419.7 N:185839.6**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Soft grey CLAY.	(0.80) 9.80	
						Soft grey silty CLAY with occasional decaying rootlets. . . . 9.80m to 10.20m; slightly sandy.	(0.70) 10.50	
						Soft to firm grey locally dark grey CLAY with occasional decaying rootless (<2mm x 20mm).	(5.00)	
14.90 14.90	5	ES PID	1xT+1xJ+1xV 0.0ppm					
						Sonic Borehole terminated at 15.50m.	15.50	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

AGS

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH202**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.04.22** End: **11.04.22**	**6.67**	**E:277390.7 N:185985.2**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Dark grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag and brick. With frequent metal fragments and rebar. (Possible redig on TP210).	(2.50)	
							2.50	
						COBBLES. Cobbles are angular and subangular of concrete.	(0.50)	
							3.00	
						REINFORCED CONCRETE.	(2.00)	
							5.00	
						Soft blueish grey slighty peaty CLAY. With very strong hydrocarbon odour and slight sheen.	(2.20)	
6.00 6.00	1	ES PID	1xT+1xJ+1xV 250.0ppm					
							7.20	
						Soft brown fibrous PEAT. With very strong hydrocarbon odour.	(1.80)	
7.50 7.50	2	ES PID	1xT+1xJ+1xV 300.0ppm					
							9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20m depth.
4. Suspected heavy contamination in groundwater within sand layer down to 15.20m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH202**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.04.22** End: **11.04.22**	**6.67**	**E:277390.7 N:185985.2**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00 9.00	3	ES PID	1xT+1xJ+1xV 700.0ppm			Soft blueish grey slightly peaty CLAY. With very strong hydrocarbon odour.	(1.20) 10.20	
10.50 10.50	4	ES PID	1xT+1xJ+1xV 250.0ppm			Soft blueish grey slightly sandy clayey SILT. Sand is fine. With very strong hydrocarbon odour and visual signs of olfactory contamination.	(1.80) 12.00	
12.00 12.00	5	ES PID	1xT+1xJ+1xV 1200.0ppm			Grey silty locally clayey SAND. With very strong hydrocarbon odour and visual signs of olfactory contamination. . . . 12.00m to 12.50m; extremely heavy olfactory contamination and hydrocarbon smell. PID 1200ppm. Decreasing with depth.	(3.20)	
13.50 13.50	6	ES PID	1xT+1xJ+1xV 400.0ppm			. . . 14.7m to 14.80m; brown staining of heavy olfactory contamination.	15.20	
15.00 15.00	7	ES PID	1xT+1xJ+1xV 430.0ppm			Firm grey silty CLAY. No evidence of olfactory contamination.	(1.30)	
16.00 16.00	8	ES PID	1xT+1xJ+1xV 0.5ppm				16.50	
						Sonic Borehole terminated at 16.50m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH203**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.04.22** End: **13.04.22**	**6.62**	**E:277466.1 N:186099.3**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Dark grey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of concrete, brick and slag (<40mm x 100mm x 100mm). With various anthropogenic material such as plastic bags, plastic fragments, metals fragments and rebar. With slight hydrocarbon odour.	(0.50) 0.50	
						MADE GROUND. Possible CONCRETE.	(1.00) 1.50	
						MADE GROUND. Light grey slight clayey slightly gravelly SAND. Sand is fine and medium. Gravel is angular fine and medium of slag and brick.	1.90	
2.00 2.00	1	ES PID	1xT+1xJ+1xV 3.2ppm			MADE GROUND. Grey to dark grey SAND. With hydrocarbon odour and black staining of olfactory contamination.	(1.10) 3.00	
3.00 3.00	2	ES PID	1xT+1xJ+1xV 0.6ppm			MADE GROUND. Dark grey gravelly clayey SAND. Sand is fine and medium. Gravel is angular to subrounded fine to coarse of quartzite,sandstone and occasional slag. Slight hydrocarbon odour.	(0.60) 3.60	
						Soft dark grey slighty sandy clayey SILT. Sand is fine. With occasional decaying rootless (1mm x 8mm).	(0.50) 4.10	
4.00 4.00	3	ES PID	1xT+1xJ+1xV 0.5ppm			Soft dark grey silty CLAY.	(0.70) 4.80	
						Firm light grey CLAY locally sandy. Sand is fine. With occasional decaying rootless (<1mm x 15mm). . . . 5.20m to 5.50m; clayey sand band.	(3.10) 7.90	
6.00 6.00	4	ES PID	1xT+1xJ+1xV 0.2ppm			Soft dark brown psuedo-fibrous PEAT.	(1.00) 8.90	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH203**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**13.04.22** End: **13.04.22**	**6.62**	**E:277466.1 N:186099.3**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	5	ES	1xT+1xJ+1xV			Soft brown clayey psuedo-fibrous PEAT. *(stratum copied from 8.90m from previous sheet)*	(0.80) 9.70	
						Soft blueish grey slightly peaty silty CLAY.	(4.40)	
						. . . 12.60m to 12.75m; clayey peat.		
							14.10	
						Soft grey sandy SILT.	(0.70) 14.80	
						Soft grey silty CLAY.	15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH204**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **20.04.22**	**7.07**	**E:277377.0 N:186087.2**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Brown slightly silty sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag, brick and concrete. Cobbles are angular of brick and concrete (<150mm x 160mm x 180mm).	(0.70) 0.70	
						MADE GROUND. Grey sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of abundant slag, brick and concrete. Cobbles are angular and subangular of concrete (<100mm x 150mm x 180mm).	(0.70) 1.40	
1.40 1.40	1	ES PID	1xT+1xJ+1xV 103.0ppm			MADE GROUND. Dark grey gravelly silty SAND with high cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular and subangular of concrete (<100mm x 110mm x 130mm). With strong hydrocarbon odour.	(3.10) 4.50	
4.60 4.60	2	ES PID	1xT+1xJ+1xV 1.8ppm			Soft to firm blueish grey CLAY. With occasional decaying rootlets (<2mm x 20mm). With slight hydrocarbon odour.	(2.70) 7.20	
7.30 7.30	3	ES PID	1xT+1xJ+1xV 0.5ppm			Firm brown psuedo-fibrous PEAT.	(1.80) 9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH204**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**20.04.22** End: **20.04.22**	**7.07**	**E:277377.0 N:186087.2**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.10 9.10	4	ES PID	1xT+1xJ+1xV 0.7ppm			Soft to firm grey peaty silty CLAY.	(0.50) 9.50	
						Soft grey slightly sandy clayey SILT. Sand is fine.	(0.60) 10.10	
						Soft grey locally clayey sandy SILT. Sand is fine. . . . 10.50m to 11.75m; clayey silt. . . . 11.80m to 12.00m; clayey silt.	(2.70) 12.80	
						Grey silty SAND. Sand is fine.	(1.00) 13.80	
						Grey slightly silty SAND. Sand is fine.	(1.20) 15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH205**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**19.04.22** End: **19.04.22**	**7.47**	**E:277465.9 N:186292.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Orangeish brown sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag and brick. With frequent metal fragments (<20mm x 50mm x 90mm).	(0.50) 0.50	
						MADE GROUND. Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of mustone, quartzite and abundant slag and brick.	(4.50) 5.00	
6.00 6.00	1	ES PID	1xT+1xJ+1xV 2.7ppm			MADE GROUND. Brown to dark grey SAND. Sand is fine to coarse. . . . 5.80m to 6.50m; dark grey, possible olfactory contamination.	(1.50) 6.50	
7.00 7.00	2	ES PID	1xT+1xJ+1xV 0.8ppm			Soft grey clayey SILT.	(0.90) 7.40	
						Soft grey sandy SILT. Sand is fine.	(1.50) 8.90	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.2m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH205**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **19.04.22**	**7.47**	**E:277465.9 N:186292.0**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Firm grey CLAY. With occasional shell fragments (<3mm x 5mm) *(stratum copied from 8.90m from previous sheet)*	(0.90) 9.80	
10.00 10.00	3	ES PID	1xT+1xJ+1xV 0.3ppm			Firm brown psuedo-fibrous PEAT.	(1.20) 11.00	
						Soft to firm grey clayey SILT.	(0.50) 11.50	
						Soft grey slightly sandy to sandy clayey SILT. With frequent decaying rootlets (<2mm x 20mm).	(1.90) 13.40	
						Soft grey slight peaty silty CLAY.	(1.60) 15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Ervin Demha**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH206**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**12.04.22** End: **12.04.22**	**7.14**	**E:277625.5 N:186190.9**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Depth (Thick ness)	Material Graphic Legend
						MADE GROUND. Dark grey slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag.	0.20	
						MADE GROUND. Dark grey slighty clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag and occasional brick.	(2.05)	
1.90 1.90	1	ES PID	1xT+1xJ+1xV 0.7ppm			. . . 1.90m to 2.25m; light grey.	2.25	
						MADE GROUND. Dark grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag and occasional brick.	(0.95)	
							3.20	
						MADE GROUND. Dark grey sandy clayey GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag and occasional brick.	(1.20)	
							4.40	
						MADE GROUND. Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of abundant slag.	(0.60)	
							5.00	
5.00 5.00	2	ES PID	1xT+1xJ+1xV 1.1ppm			MADE GROUND. Very stiff dark grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of mudstone and occasional slag.	(0.90)	
							5.90	
						Soft grey locally blueish grey CLAY.	(1.30)	
6.20 6.20	3	ES PID	1xT+1xJ+1xV 0.1ppm				7.20	
						Soft light brownish grey clayey SILT. With occasional shell fragments (2mm x 10mm x 12mm).	(1.50)	
							8.70	
						Description on next sheet		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH206**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**12.04.22** End: **12.04.22**	**7.14**	**E:277625.5 N:186190.9**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Grey to blueish grey slightly silty to silty SAND. With occasional shell fragments (<2mm x 8mm x 10mm). . . . 8.70m to 9.00m; green slighty silty glauconitic sand.*(stratum copied from* 8.70m from previous sheet) . . . 9.30m to 9.70m; silty . . . 10.50m to 10.80m; silty. . . . 10.50m to 11.00m; peaty.	(2.30) 11.00	
						Soft dark brown slightly clayey psuedo-fibrous PEAT.	(0.90) 11.90	
						Soft grey peaty CLAY.	(0.60) 12.50	
						Soft to firm brownish grey slightly sandy slightly gravelly to gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of quartzite and sandstone. Cobbles are subrounded of quartzite (<60mm x 80mm x 100mm). . . . 12.50m to 12.90m; slightly gravelly.	(1.10) 13.60	
						Brownish grey sandy clayey GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and mudstone. Cobbles are angular of mudstone (<40mm x 70mm x 100mm).	(1.40) 15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH207**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**20.04.22** End: **20.04.22**	**7.00**	**E:277644.3 N:185938.1**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Tarmacadam.	0.10	
						MADE GROUND. Grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag and concrete. Cobbles are angular and subangular of slag and concrete (<65mm x 120mm x 180mm).	(2.90)	
3.10	1	ES	1xT+1xJ+1xV			MADE GROUND. Brown slightly gravelly SAND. Gravel is subangular and subrounded fine and medium of quartzite. . . . 3.00m to 3.20m; slightly gravelly.	3.00 (2.90)	
6.00	2	ES	1xT+1xJ+1xV			Soft blueish grey locally slightly sandy clayey SILT. Sand is fine. . . . 6.00m to 6.20m; slightly sandy.	5.90 (0.60)	
						Firm blueish grey locally peaty silty CLAY. With occasional decaying rootlets (<2mm x 15mm). . . . 7.50m to 7.80m; peaty.	6.50 (1.30)	
8.00	3	ES	1xT+1xJ+1xV			Firm brown psuedo-fibrous PEAT.	7.80 (1.30)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to AAAm depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH207**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**20.04.22** End: **20.04.22**	**7.00**	**E:277644.3 N:185938.1**	**2** of **2**

Depth (m)	Samples & Testing No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Firm grey peaty CLAY.	9.10 (2.40) 11.50	
						Firm grey slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine and medium of mudstone and siltstone.	(1.40) 12.90	
						Grey locally brown sandy clayey GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of mudstone and siltstone.	(1.10) 14.00	
						Soft grey locally brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse, predominantly fine and medium. Gravel is subangular and subrounded fine and medium of mudstone.	(0.50) 14.50	
						Grey slightly sandy clayey GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse of mudstone, siltstone and occasional coal.	(0.50) 15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH208**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.04.22** End: **06.04.22**	**6.18**	**E:277559.7 N:185748.9**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instru-mentation	Water	Description of Strata	Depth (Thick ness)	Material Graphic Legend
						MADE GROUND. MADE GROUND. Grass over black gravelly SAND. Sand is fine. Gravel is angular and subangular fine and medium of abundant slag and concrete.	0.10	
						MADE GROUND. Dark grey sandy GRAVEL. Sand is fine. Gravel is angular and subangular fine and medium of slag, brick and concrete.	(0.70)	
							0.80	
1.00 1.00	1	ES PID	0.1ppm			MADE GROUND. Firm dark grey mottled orange slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and abundant slag. With hydrocarbon odour.	(0.70)	
							1.50	
						MADE GROUND. Dark grey sandy clayey GRAVEL. Sand is fine and medium. Gravel is angular and subangular fine and medium of slag.	(2.60)	
3.20 3.20	2	ES PID	1xT+1xJ+1xV 0.1ppm					
							4.10	
						Firm to stiff grey CLAY with occasional decaying rootless (<2mm x 20mm).	4.50	
4.40 4.40	3	ES PID	1xT+1xJ+1xV 0.0ppm			Soft grey slightly sandy silty CLAY. Sand is fine.	(1.70)	
							6.20	
						Soft brown psuedo-fibrous PEAT.	(0.60)	
							6.80	
						Soft brownish grey clayey PEAT	7.20	
						Soft grey peaty CLAY.	(1.30)	
							8.50	
						Soft to firm grey slightly peaty CLAY.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20mm depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH208**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.04.22** End: **06.04.22**	**6.18**	**E:277559.7 N:185748.9**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Soft to firm grey slightly peaty CLAY. *(stratum copied from 8.50m from previous sheet)*	(5.50) 14.00	
						Soft grey peaty silty CLAY.	(1.00) 15.00	
14.90 14.90	4	ES PID	1xT+1xJ+1xV 0.0ppm			Sonic Borehole terminated at 15m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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RAW FIELD DATA

SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH209**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**19.04.22** End: **19.04.22**	**6.75**	**E:277497.3 N:186002.1**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND. Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone and abundant slag and brick.	(1.60)	
1.20 1.20	1	ES PID	1xT+1xJ+1xV 0.5ppm				1.60	
						MADE GROUND. Brown to dark grey SAND. Sand is fine and medium. With Hydrocarbon odour.		
2.00 2.00	2	ES PID	1xT+1xJ+1xV 3.8ppm				(3.20)	
						. . . 4.30m to 4.80m; dark grey . . . 4.40m to 4.47m; 1 No. Cobble of tarmac (<30mm x 65mm x 70mm). . . . 4.50m to 4.80m; dark grey silty sand.		
4.40 4.40	3	ES PID	1xT+1xJ+1xV 4.7ppm				4.80	
						Firm grey mottled orangish brown CLAY,		
5.40 5.40	4	ES PID	1xT+1xJ+1xV 0.2ppm				(2.40)	
						. . . 6.80m to 7.20m; slightly peaty.	7.20	
						Firm brown psuedo-fibrous PEAT.	(1.00)	
							8.20	
						Soft grey locally slightly sandy SILT. Sand is fine.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Checks for buried ferrous objects carried out during excavation by specialist unexploded ordnance (UXO) officer using magnetometer.
3. Inspection pit hand dug to 1.20m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log SONIC DRILLING LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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SONIC DRILLING LOG

Contract:	Client:	Borehole:
Project Cronus	**Tata Steel UK Ltd**	**BH209**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**19.04.22** End: **19.04.22**	**6.75**	**E:277497.3 N:186002.1**	**2** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						Soft grey locally slightly sandy SILT. Sand is fine. *(stratum copied from 8.20m from previous sheet)* . . . 10.10m to 10.50m; slightly sandy. . . . 11.40m to 11.70m; slightly sandy.	(3.50) 11.70	
						Firm blueish grey slightly peaty CLAY.	(3.20) 15.00	
						Sonic borehole terminated at 15.00m.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Sonic drilling	**Sonic Drilling Rig**	**Grant Goodwin**	**RHorne**	JCB

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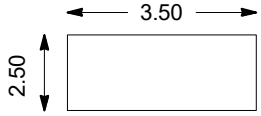
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP201**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**30.03.22** End: **30.03.22**	**5.79**	**E:277607.9 N:185831.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10	1	ES PID	 0.3ppm			Grass over dark brown gravelly silty topsoil with frequent rootlets.	0.10	
						MADE GROUND: Dark brown to black silty angular cobbles of slag . Medium boulder content (upto 1300x600x500mm) of slag and concrete. Fragments of metal, rubber (shoe).	(1.20)	
0.60 0.60	2	ES PID	 0.2ppm					
1.10 1.10	3	ES PID	 0.4ppm				1.30	
				1 1		MADE GROUND. Dark grey very soft slightly gravelly silty clay. Gravel is angular fine to coarse of slag. Strong burnt/hydrocarbon odour. Water has a sheen at 2.6m depth.	(1.60)	
1.60 1.60	4	ES PID	 1.1ppm				2.90	
						MADE GROUND. Black slightly silty gravelly angular COBBLES of slag. Gravel is angular fine to coarse of slag.	3.00	
						Trial pit terminated at 3.0m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR
2. Groundwater seepage encountered at 2.60 m depth
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

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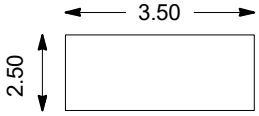
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP202**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**30.03.22** End: **30.03.22**	**5.59**	**E:277590.1 N:185765.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10	1	ES PID	 0.1ppm			Grass over black slightly gravelly slightly sandy topsoil. Gravel is angular fine to coarse of slag. Sand is fine. Frequent rootlets and fragments of wood. . . . Becoming slightly clayey and dark brown to grey at 0.35mbgl.	(0.80)	
0.50 0.50	2	ES PID	 0.1ppm				0.80	
1.00 1.00	3	ES PID	 0.1ppm	1		MADE GROUND. Grey silty angular fine to coarse gravel of slag with high cobble content of slag.	(0.90)	
							1.70	
						MADE GROUND. Dark grey gravelly silty clay. Gravel is angular fine to coarse of slag. Sheen on water seepage. Oil slick/sheen on soil.	(1.40)	
							3.10	
						Trial pit terminated at 3.10m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.70 m depth
3. Trial pit backfilled with arisings in reverse order upon completion.
4. Moderate spalling at 1.10m

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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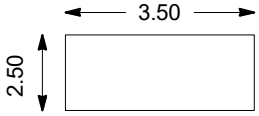
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP203**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**30.03.22** End: **30.03.22**	**5.84**	**E:277552.4 N:185801.9**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10	1	ES PID	 0.0ppm			Grass over brown slighty gravelly slightly sandy silty topsoil with frequent rootlets. Sand is fine. Gravel is subrounded to angular fine to medium of slag. Rare fragments of potential brick. Low cobble content of slag flat slabs 400x250x10mm.	(0.35) 0.35	
0.60 0.60	2	ES PID	 0.0ppm			MADE GROUND. Grey silty sandy angular gravel of slag with high angular cobble content of slag . Low angular boulder content 900x430x600mm	(0.85) 1.20	
1.30 1.30	3	ES PID	 0.0ppm			MADE GROUND. Dark grey mottled orange slightly gravelly silty clay. Gravel is angular fine to coarse of slag. Moderate odour.		
2.00	4	ES		1 1		. . . Becoming orange and yellow brown at 1.8mbgl.	(1.40) 2.60	
						Trial pit terminated at 2.60m due to refusal on hard strata.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 2.30 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

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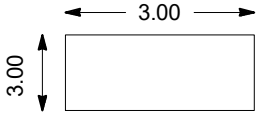
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP204**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**31.03.22** End: **31.03.22**	**6.67**	**E:277393.7 N:185854.8**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				MADE GROUND. Brown silty, slightly gravelly SAND. Gravel is fine to medium, angular to sub-angular. Comprising slag. Abundant rootlets.	(0.80) 0.80	
0.80	2	ES				MADE GROUND. Brownish orange, slightly silty SAND. Rare slag gravel, fine to coarse, angular.	(0.40) 1.20	
1.30	3	ES				MADE GROUND. Dark blackish brown very gravelly SAND. Gravel is fine to coarse, frequent cobbles. Rare boulders up to 40cm. Comprising slag.	(0.60) 1.80	
2.00	4	ES		1 1		MADE GROUND. Orange and grey, slightly silty SAND. Rare slag cobbles. Very wet. Coal tar/ hydrocarbon odour. Sheen on water.	(0.60) 2.40	
						Trial pit terminated at 2.40m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 2.00 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

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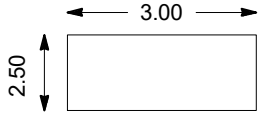
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP205**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**31.03.22** End: **31.03.22**	**6.24**	**E:277368.2 N:185918.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Grass over brown, silty, slightly gravelly SAND. Abundant rootlets. Rare cobbles of limestone.	(0.50) 0.50	
0.60	2	ES				MADE GROUND. Brownish orange, slightly silty, gravelly SAND. Gravel is fine to coarse, rare fine to coarse cobbles. Comprising slag and limestone. Rare slag boulders uptown 0.8m x 0.8m.	(0.50) 1.00	
1.10	3	ES		1 1		MADE GROUND. Pale black, slightly silty, gravelly SAND. Gravel is fine to coarse, frequent cobbles. Comprising slag, limestone and brick. Rare limestone and slag boulders. Sheen on water. . . . Becomes greenish grey. Slightly silty.	(1.50) 2.50	
						Trial pit terminated due to pit instability at 2.50m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.40 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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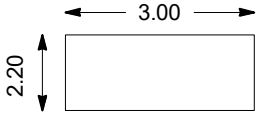
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP206**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**31.03.22** End: **31.03.22**	**6.38**	**E:277344.0 N:185994.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				Grass over brown, slightly silty, slightly gravelly SAND. Gravel is fine to medium. Angular to sub-angular. Comprising slag and limestone.	(0.35) 0.35	
0.60	2	ES				MADE GROUND. Brownish orange, slightly gravelly SAND. Gravel is fine to medium, angular to sub-rounded. Comprising slag and limestone.	(0.35) 0.70	
1.10	3	ES		1 1		MADE GROUND. Blackish greenish brown, slightly silty very gravelly, cobbley SAND. Travels and cobbles comprise, slag, limestone and rare brick. Rare large concrete boulders 0.6 x 0.8m.	(2.00) 2.70	
						Trial pit terminated at 2.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.40 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

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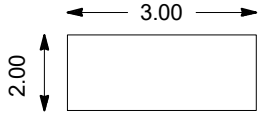
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP207**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**31.03.22** End: **31.03.22**	**6.53**	**E:277329.3 N:186044.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				Grass over, brown slightly silty, very gravelly SAND. Abundant rootlets. Gravel is fine to medium, with rare large cobbles. Angular to sub-rounded. Comprising limestone, concrete, brick, slag.	(0.50) 0.50	
0.60	2	ES				MADE GROUND. Grey and pale orange mottled, slightly silty, gravelly, cobbley SAND. Fine gravel to coarse cobbles. Sub-angular to rounded. Comprising Limestone, concrete, brick and slag.	(0.30) 0.80	
1.10	3	ES		1 1		MADE GROUND. Slightly greenish grey, slightly silty, gravelly, slightly cobbley SAND. Gravell and cobbles as above. Sheen on water. Coal-tar smell.	(1.10) 1.90	
						Trial pit terminated due to shallow groundwater ingress at 1.90m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 0.90 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

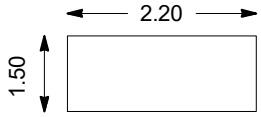
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP208**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**7.12**	**E:277375.3 N:186082.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND. Black silty angular fine to coarse gravel of brick, slag with , frequent wood and metal fragments. Boulder size metal fragments 600x350x10. medium angular cobble content of brick. Strong hydrocarbon odour.	(0.50)	
							0.50	
0.50	2	ES				MADE GROUND Brown gravelly coarse SAND with high cobble content of brick and concrete. Gravel is angular fine to coarse of slag, brick, concrete. Concrete block along entire length of pit between 0.6 to 1.1m about 0.3m wide... frequent metal fragments. . . . Boulders of concrete upto 650x450x150mm . . . Becoming dark grey	(0.60)	
1.00	3	ES		1 1			1.10	
						Trial pit terminated due to concrete obstruction at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.00 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

RSK GEOSCIENCES

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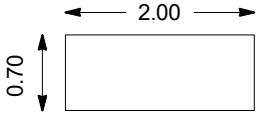
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP209**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**6.85**	**E:277371.5 N:186033.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND. Dark brown slightly clay slightly sandy fine to coarse GRAVEL of brick, slag, metal, concrete. Sand is fine to coarse.	(0.90) 0.90	
0.90	2	ES				MADE GROUND. Brown grey slightly sandy gravelly COBBLES of concrete. Frequent fragments of metal , textiles. Sand is fine to coarse.	(0.30) 1.20	
1.20	3	ES		1 1		MADE GROUND. Pale brown to green brown gravelly fine to coarse SAND. Rare brick. Gravel is angular fine to coarse of concrete and sandstone.	(0.80) 2.00	
						Trial pit terminated due to wall instability at 2.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.40 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

RSK GEOSCIENCES

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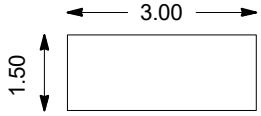
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP210**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**6.67**	**E:277388.7 N:185985.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Dark brown clayey angular fine to coarse GRAVEL of brick, plastic, slag.	0.15	
0.10		PID	1.0ppm					
0.20	2	ES				MADE GROUND. Black very sandy angular fine to coarse GRAVEL of slag, brick . Frequent metal fragments, braded/twisted cables. Strong odour. Low cobble content of angular brick, slag.	(0.80)	
0.20		PID	0.1ppm			. . . 50mm thick horizontal metal panel protruding from one wall	0.95	
0.95	3	ES				MADE GROUND. Grey and brown slightly silty gravelly fine to medium SAND. Extremely strong odour. Gravel is subangular fine to medium of slag. Plastic fragments. Hydrocarbon sheen. Rare cobbles of slag.		
0.95		PID	0.4ppm	1 1		. . . Frequent twisted cables.		
						. . . Becoming pale bluish grey	(1.65)	
						. . . Mottled black	2.60	
						Trial pit terminated due to wall instability at 2.60m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.80 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

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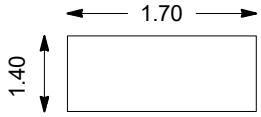
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP211**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**7.37**	**E:277453.0 N:186294.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10	1	ES PID	 0.1ppm			MADE GROUND. Reddish brown silty fine to coarse GRAVEL of slag.	0.05	
						MADE GROUND. Grey sandy angular fine to coarse GRAVEL of slag and brick. Metallic particles in the sand.	0.15	
						MADE GROUND brown grey slightly gravelly silty angular COBBLES of slag. Low boulder content upto 250x150x190mm. . . . Concrete wall along south wall of pit.	(1.00)	
0.50 0.50	2	ES PID	 0.1ppm	1 1				
						Trial pit terminated due to concrete obstruction at 1.15m depth.	1.15	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.00 m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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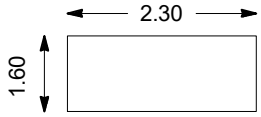
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP212**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22**	**7.47**	**E:277465.9 N:186294.0**	**1** of **1**
	End: **04.04.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10 0.10	1	ES PID	0.5ppm			MADE GROUND red brown silty angular fine to coarse GRAVEL of slag.	0.20	
						MADE GROUND Grey sandy angular fine to coarse gravel of slag and brick. Metallic particles in sand.	(0.30) 0.50	
0.50 0.50	2	ES PID	0.0ppm			Made GROUND dark grey to black slightly gravelly fine to medium SAND. Gravel subrounded angular fine to medium of slag and brick.	(0.60)	
						. . . Concrete or hard slag step on shortest end of trial pit.	1.10	
1.00 1.00	3	ES PID	0.1ppm			Trial pit terminated due to concrete or hard slag between 0.90m and 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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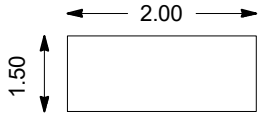
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP213**

Contract Ref:	Start: **04.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **04.04.22**	**6.83**	**E:277476.3 N:186252.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND. Brown gravelly SILT. Gravel is angular fine of slag.	0.15	
0.20	1	ES				MADE GROUND. Dark grey sandy angular to subangular fine to coarse GRAVEL of slag and concrete. Sand is fine to medium. Low cobble content of angular slag.	(0.45)	
0.20		PID	0.0ppm					
0.45	2	ES					0.60	
0.45		PID	0.0ppm					
0.55	3	ES				MADE GROUND. Solid compacted slag.	0.70	
0.55		PID	0.1ppm			Trial pit terminated due to hard strata at 0.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

RSK GEOSCIENCES

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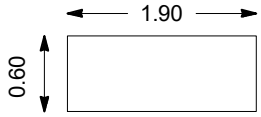
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP214**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**6.79**	**E:277535.0 N:186106.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Brown sandy silty angular to subangular fine to medium GRAVEL of slag, brick, clicker, glass. Sand is fine to coarse.	(0.70)	
0.50	2	ES						
0.60	3	ES					0.70	
						Trial pit terminated due to concrete obstruction across entire pit width and length at 0.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

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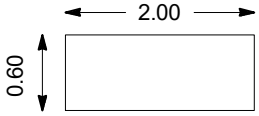
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP215**

Contract Ref:	Start: **01.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **01.04.22**	**7.02**	**E:277543.9 N:186080.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND: Brown sandy angular fine to coarse GRAVEL of slag and metal fragments.	(0.30)	
						Trial pit terminated due to obstruction/hard strata solid slag at 0.30m depth.	0.30	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered at.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

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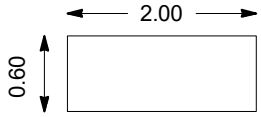
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP216**

Contract Ref:	Start: **01.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **01.04.22**	**7.14**	**E:277548.4 N:186047.8**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				MADE GROUND. Brown and dark grey slightly silty sandy angular fine to coarse GRAVEL of slag, brick with low cobble content of slag. Sand is fine to coarse. Frequent fragments of wood. . . . Becoming black mottled white gravel of concrete	(0.70)	
0.60	2	ES					0.70	
						Trial pit terminated due reinforced concrete slab across entire pit width and length at 0.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RLockyer**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:54 | SB5 |

RSK GEOSCIENCES

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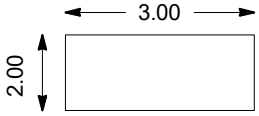
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP217**

Contract Ref:	Start: **05.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **05.04.22**	**6.84**	**E:277476.3 N:186252.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Dark brownish black slightly silty, very sandy GRAVEL. Gravel is fine to coarse, angular to sub-rounded. Comprising mostly slag and metal chunks.	(0.30) 0.30	
0.50	2	ES				MADE GROUND. Dark grey slightly sandy cobbley GRAVEL. Fine gravel to coarse cobbles. Comprising slag and natural stone. Angular to sub-rounded. Conta	(0.80) 1.10	
1.20	3	ES				MADE GROUND. Dark black silty, gravelly SAND. Appears to comprise in the most part from coal dust. Gravel is fine to coarse. Angular to sub-rounded. Comprising slag and coal.	(0.40) 1.50	
						MADE GROUND. Light grey, rare mottled black, slightly sandy GRAVEL & COBBLES. Fine gravel to coarse cobbles. Comprising slag.	(0.50) 2.00	
						Trial pit terminated due to refusal at 2.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

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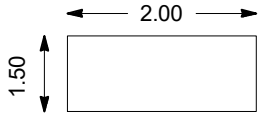
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP218**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**05.04.22** End: **05.04.22**	**7.57**	**E:277655.5 N:186040.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND. Dark blackish brown slightly silty, very sandy GRAVEL. Gravel is fine to coarse, angular to sub-rounded. Comprising slag and natural stone.	(0.60)	
0.60	2	ES				Trial pit terminated due to refusal at 0.60m depth.	0.60	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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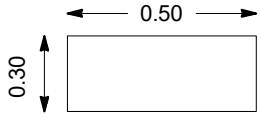
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP221**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.04.22** End: **07.04.22**	**5.25**	**E:277748.6 N:185842.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Grass over dark brownish black, very sandy, slightly gravelly SILT. Gravel is fine to coarse, angular to sub-rounded. Comprising slag. Contains abundant rootlets.	0.15	
						MADE GROUND. Light grey slightly silty, very gravelly SAND. Gravel is fine to coarse, angular to sub-rounded. Comprising slag.	(0.45)	
0.50	2	ES					0.60	
						Hand pit terminated due to refusal at 0.60m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Hand pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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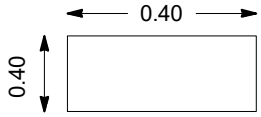
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP222**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.04.22** End: **06.04.22**	**5.32**	**E:277734.0 N:185801.9**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				Grass over black slightly silty, gravelly SAND. Gravel is fine to coarse, angular to sub-rounded. Comprising slag.	(0.90)	
0.50	2	ES						
0.90	3	ES				Hand pit terminated due to refusal at 0.90m depth.	0.90	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Hand pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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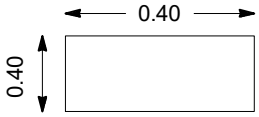
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP223**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.04.22** End: **07.04.22**	**5.38**	**E:277756.7 N:185792.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Grass over soft to firm dark brownish black very sandy, slightly gravelly SILT. Gravel is fine to medium. Angular to sub-rounded. Comprising slag. Abundant rootlets.	0.10	
0.20	1	ES				MADE GROUND. Greyish black, slightly silty, gravelly SAND. Rare cobbles. Gravel is fine to coarse, angular to sub-rounded. Comprising slag.	(0.80)	
0.50	2	ES						
0.90	3	ES				Hand pit terminated due to refusal at 0.90m depth.	0.90	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Hand pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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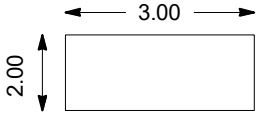
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP224**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**6.31**	**E:277832.5 N:185829.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND. Slightly greyish brown slightly silty, very gravelly SAND. Occasional cobbles. Fine gravel to medium cobbles. Comprising mostly slag with rare natural stone and bricks.	(0.40)	
							0.40	
0.50	2	ES				MADE GROUND. Estimated very dense, dark reddish brown slightly silty, very sandy cobbley GRAVEL. Gravel is fine to coarse. Cobbles are fine to medium. Comprising slag and natural stone. . . . Loose coiled wires.		
1.10 1.10	3	ES PID	0.5ppm			. . . Becomes grey, rare mottled brown.	(1.20)	
							1.60	
						MADE GROUND. Bluish grey, rare mottled pale yellow and brown sandy very cobbley GRAVEL. Fine gravel to coarse cobbles. Comprising slag.	(1.40)	
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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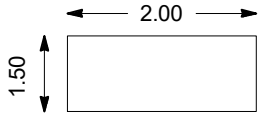
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP225**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**6.36**	**E:277800.0 N:185828.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20 0.20	1	ES PID	0.3ppm			MADE GROUND. Greyish brown slightly silty, very sandy GRAVEL. Gravel is fine to coarse, rounded to sub-angular. Comprising mostly slag, with rare concrete and brick fragments.	(0.35) 0.35	
0.50 0.50	2	ES PID	0.2ppm			MADE GROUND. Brownish grey sandy slightly cobbley GRAVEL. Fine gravel to coarse cobbles. Angular to sub-rounded. Comprising slag and concrete.	0.50	
						Trial pit terminated due to refusal at 0.50m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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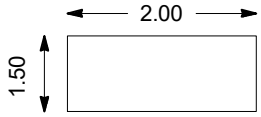
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP226**

Contract Ref:	Start: **04.04.22** End: **04.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075		**6.21**	**E:277868.2 N:185760.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20 0.20	1	ES PID	 0.2ppm			MADE GROUND. Brownish grey slightly silty, sandy GRAVEL. Gravel is fine to coarse, rounded to sub-angular. Comprising slag, natural stone and brick fragments. Rare cobbles of same composition.	(0.40) 0.40	
0.50 0.50	2	ES PID	 0.2ppm			MADE GROUND. Slightly brownish grey slightly silty, very gravelly, cobbley SAND. Fine gravel to coarse cobbles. Rounded to sub-angular. Comprising slag, iron, brick, concrete and natural stone.	(0.30) 0.70	
						Trial pit terminated due to refusal at 0.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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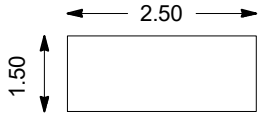
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP227**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**5.88**	**E:277786.5 N:185694.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Black, slightly silty, very gravelly, cobbledy SAND. Mostly comprising coal. Gravel is fine to coarse, sub-angular to sub-rounded.	(0.40)	
							0.40	
0.50	2	ES				MADE GROUND. Brownish grey slightly silty, very gravelly slightly cobbley SAND. Gravel is fine to coarse, cobbles are fine to coarse. Sub-angular to rounded. Comprising, natural stone, coal, tiles, concrete and slag.		
1.20	3	ES				. . . Gravel and cobbles become predominantly slag. Becomes cobbley.	(1.90)	
							2.30	
						MADE GROUND. Firm slightly greyish brown sandy, very gravelly SILT. Gravel is fine to coarse, angular to sub-rounded. Comprising slag and natural stone.	(1.00)	
							3.30	
						Trial pit terminated at 3.30m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 2.20m.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:55 | SB5 |

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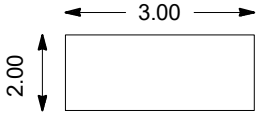
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP228**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**5.66**	**E:277809.7 N:185667.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND. Black very gravelly SAND. Gravel and sand comprises mostly coal with rare slag and natural stone. Fine to coarse, angular to sub-rounded.	(0.30)	
							0.30	
0.30	1	ES				MADE GROUND. Greyish brown and black mottled, very gravelly, very cobbley SAND. Gravel is fine to coarse, cobbles are fine to coarse, rare concrete and slag boulders up to 50cm. Gravel comprises mostly slag, concrete, white stone, rare tile fragments.		
0.60	2	ES						
1.20	3	ES				. . . Becomes very sandy, very cobbley GRAVEL.	(2.10)	
							2.40	
						MADE GROUND. Firm dark blackish brown, very gravelly SILT. Rare cobbles. Gravel is fine to coarse, angular to sub-rounded, comprising slag and natural stone.	(0.60)	
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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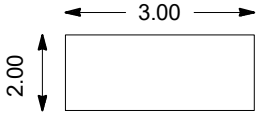
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP229**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**01.04.22** End: **01.04.22**	**5.93**	**E:277732.0 N:185577.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND. Slightly brownish black, very gravelly, cobbley SAND. Most of the material comprises coal and slag. Gravel is fine to coarse, angular to sub-rounded. Occasional concrete.	(0.50) 0.50	
0.60	2	ES				MADE GROUND. Blackish brown slightly silty, gravelly, very cobbley SAND. Fine gravel to coarse cobbles. Sub-angular to rounded. Comprising concrete and slag. Contains old crushed containers, nothing contained within, approx 10l originally. Also contains conveyor wheels, wire bricks, bottles, plastic lids, fabric, metal sheeting and tubes, wood.	(1.40) 1.90	
1.30	3	ES		≈		MADE GROUND. Firm, greenish, blackish brown, very sandy, slightly gravelly, slightly cobbley SILT. Rare concrete boulders up to 60cm. Gravel is fine to coarse, angular to sub-rounded. Comprising slag and natural stone	(1.10) 3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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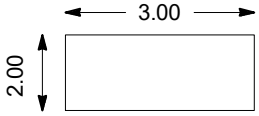
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP230**

Contract Ref:	Start: **01.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **01.04.22**	**5.85**	**E:277798.3 N:185609.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				MADE GROUND. Black very gravelly, slightly cobbley SAND. Material comprises coal and slag. Gravel is fine to coarse. Very difficult to excavate.	(0.50)	
0.50	2	ES				Trial pit terminated due to refusal at 0.50m depth.	0.50	

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. No groundwater encountered.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

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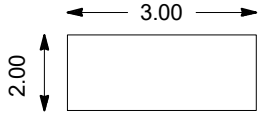
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP231**

Contract Ref:	Start: **05.04.22**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	End: **05.04.22**	**5.66**	**E:277809.7 N:185667.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Blackish brown slightly silty, very gravelly SAND. Gravel is fine to coarse, angular to sub-rounded. Comprising slag and concrete. Occasional cobbles, rare slag boulders up to 60cm.	(1.20)	
0.60	2	ES					1.20	
1.40	3	ES				Pale greenish grey very sandy, slightly gravelly SILT. Gravel is fine to medium, rounded to sub-angular, comprising natural stone. Contains relict rootlets.	(1.80)	
						. . . Becomes soft at 2.2m. Slightly sandy.	3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.20m.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:55 | SB5 |

RSK GEOSCIENCES

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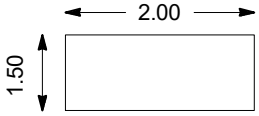
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP232**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**05.04.22** End: **05.04.22**	**5.22**	**E:278206.4 N:185683.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Light and dark brown mottled, slightly silty, gravelly SAND. Gravel is fine to coarse, rare cobbles, angular to sub-rounded. Comprising slag, concrete and mixed grey and red bricks. Rare iron splatter fragments.	(1.00)	
0.50	2	ES						
0.50		PID	0.1ppm				1.00	
1.20	3	ES		1 1		MADE GROUND. Firm dark blackish brown sandy, slightly gravelly SILT. Gravel is fine to medium. Rounded to sub-angular. Comprising slag and natural stone. Contains large wooden pieces (2" x 4") and wire. Olfactory reaction, organic and hydrocarbon. Contains grey silty sand lenses throughout.	(1.40)	
							2.40	
						Trial pit terminated due to water ingress at 2.40m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 2.00m.
3. Trial pit backfilled with arisings in reverse order upon completion.
4. Hydrocarbon sheen on water.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:55 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

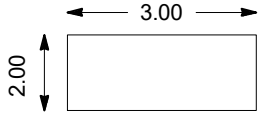
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP233**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**5.08**	**E:278255.7 N:185571.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Reddish brown slightly silty, very gravelly SAND. Gravel is fine to coarse. Occasional cobbles. Comprising slag, concrete and natural stone.	(0.60) 0.60	
0.65	2	ES				MADE GROUND. Grey with red mottling, very sandy cobbley GRAVEL. Fine gravel to coarse cobbles. Comprising slag. Rare boulders upto	(0.70) 1.30	
1.40	3	ES		1		MADE GROUND. Stiff black and orange mottled very sandy, slightly gravelly SILT. Gravel is fine to coarse, angular to sub-rounded. Comprising slag.	(0.30) 1.60	
						Stiff pale orange and black slightly sandy (with very sandy lenses), clayey SILT. Rare relict rootlets. No olfactory reaction.	(2.10) 3.70	
						Trial pit terminated at 3.70m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 1.60m.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:55 | SB5 |

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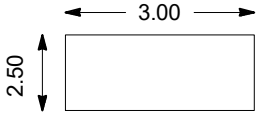
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP234**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**04.04.22** End: **04.04.22**	**5.35**	**E:278242.4 N:185570.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND. Brown slightly silty, very sandy GRAVEL. Gravel is fine to coarse. Rare cobbles. Rounded to sub-angular. Comprising slag. Contains shredded metal containers.	(0.40)	
							0.40	
0.50	2	ES				MADE GROUND. Slightly brownish grey sandy, very cobbley GRAVEL. Fine gravel to coarse cobbles. Rare boulders up to 50cm. Comprising slag.	(0.90)	
1.10	3	ES					1.30	
1.50	4	ES		1 1		MADE GROUND. Black with rare orange bottling, sandy, slightly gravelly SILT. Gravel is fine to medium, rounded to sub-angular. Comprising natural stone and slag. Occasional grey very sandy lenses. Evidence of hydrocarbon contamination (oil/ coal tar). . . . Becomes grey and brown mottled.	(2.00)	
							3.30	
						Trial pit terminated ta 3.30m depth.		

Plan (Not to Scale)



General Remarks

1. Utility clearance undertaken using CAT and Genny and GPR.
2. Groundwater encountered at 2.30m.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**FNorman**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 26/10/22 - 11:55 | SB5 |

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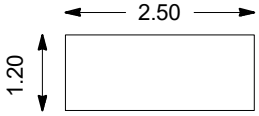
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**24.11.21**	**---**	**E:277600.0 N:186360.0**	**1** of **1**
	End: **24.11.21**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly silty sand GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag, concrete and occasional.	(0.60)	
							0.60	
0.80-0.80 0.80 0.90-1.40	1 3	ES PID B	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Dark grey slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of slag. With 2 No fragments of asbestos cement (<10mm x 45mm x 65mm).	(0.80)	
1.40-1.40	2	ES				. . . 1.35m to 1.40m; With 2 No fragments of asbestos cement (<10mm x 45mm x 65mm).	1.40	

Plan (Not to Scale)



General Remarks

1. Pit terminated due to ACM found, samples taken and pit backfilled.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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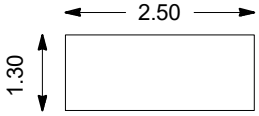
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**03.12.21** End: **03.12.21**	**---**	**E:277737.0 N:186412.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND. Slag gravel over dark grey slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of slag.	0.20	
0.30-0.30 0.30-0.60 0.30	1 2	ES B PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND. Light pinkish brown sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick. Cobbles are angular of slag (<30mm x 70mm x 120mm).	(0.50) 0.70	
0.80-1.00	3	B				MADE GROUND. Grey slightly sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag. Cobbles are angular of slag (<40mm x 70mm x 100mm).	(0.30) 1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit refused at 1.00 m depth.
2. Trial pit remained stable during excavation.
3. Trial pit remained dry during excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Caterpillar 320**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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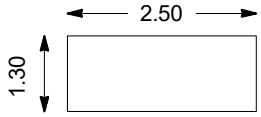
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**18.01.22** End: **18.01.22**	**---**	**E:277558.0 N:186030.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND. Dark brown sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone with abundant brick, concrete and frequent slag. Cobbles are angular of abundant concrete (<40mm x 80mm x 180mm). With various types of anthropogenic material such as metal fragments, metal pipes, rebar, metal cylinders, plastic bags and wood.	(0.40) 0.40	
0.80-0.80 0.80-1.20	2 3	ES B	1xT+1xJ+1xV			MADE GROUND. Dark grey to black sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone with abundant brick, concrete and frequent slag. Cobbles are angular of abundant concrete (<40mm x 80mm x 180mm). With various types of anthropogenic material such as metal fragments, metal pipes, rebar, metal cylinders, plastic bags and wood. Hydrocarbon odour.	(0.80) 1.20	
1.20		PID	0.2ppm			Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.
2. Water seepage at 1.20m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RSK GEOSCIENCES

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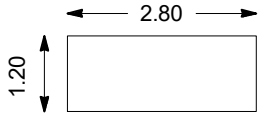
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.01.22** End: **06.01.22**	**---**	**E:277271.0 N:185943.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.3ppm			MADE GROUND. Black slightly gravelly slightly silty SAND. Sand is fine. Gravel is angular and subangular fine and medium of slag and sandstone.	(0.35) 0.35	
0.50-0.50 0.50-1.00 0.50	2 3	ES B PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND. Brown slightly gravelly silty SAND. Sand is fine. Gravel is subangular fine and medium of sandstone and slag.	(1.25) 1.60	
1.80-2.20 1.90-1.90 1.90	5 4	B ES PID	 1xT+1xJ+1xV 0.8ppm			MADE GROUND: Dark grey locally black slightly gravelly clayey SAND. Sand is fine. Gravel is angular to subrounded fine to coarse of mudstone and slag. With 1 No.metal fragment (<10mm x 40mm x 100mm) and slightly hydrocarbon odour.	(0.90) 2.50	
						Trial pit terminated at 2.50m depth due to being unstable.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.5 m depth.
2. Terminated due to pit unstable.
3. Water seepage at 1.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

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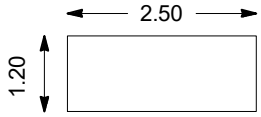
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.01.22** End: **06.01.22**	**---**	**E:277345.0 N:185769.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Grass over black slightly gravelly slightly silty SAND. Sand is fine. Gravel is angular and subangular fine and medium of slag and sandstone.	(0.30) 0.30	
0.40-0.40 0.40 0.50-1.00	1 2	ES PID B	1xT+1xJ+1xV 0.3ppm	1		MADE GROUND: Brown slightly gravelly SAND with low cobble content. Sand is fine. Gravel is subangular fine and medium of sandstone and slag. Cobbles are angular of concrete (<20mm x 70mm x 80mm).	(1.70) 2.00	
2.10-2.10 2.10-2.50 2.10	3 4	ES B PID	1xT+1xJ+1xV 1.0ppm	1		MADE GROUND: Dark grey sandy clayey GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular and subrounded fine to coarse of slag, brick and mudstone. Cobbles are angular of slag and brick (<30mm x 100mm x 120mm). With hydrocarbon odour.	(0.60) 2.60	
						Trial pit terminated at 2.60m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.5 m depth.
2. Pit terminated due to instability.
3. Water seepage at 2.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RSK GEOSCIENCES

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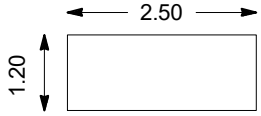
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**06.01.22** End: **06.01.22**	**---**	**E:277454.0 N:185860.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20 0.30-0.60	1 2	ES PID B	1xT+1xJ+1xV 0.5ppm			MADE GROUND: Grass over black slightly gravelly SAND. Sand is fine. Gravel is angular and subangular fine and medium of slag and sandstone.	0.15	
						MADE GROUND: Dark grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag and brick. Cobbles are angular of slag and brick (<30mm x 65mm x 90mm). With slight hydrocarbon odour.	(0.45)	
							0.60	
0.70-0.70 0.70-1.20 0.70	3 4 	ES B PID	1xT+1xJ+1xV 0.9ppm			MADE GROUND: Brown locally grey slightly gravelly silty SAND with low cobble content. Sand is fine. Gravel is subangular fine and medium of sandstone and slag. Cobbles are angular of concrete (<20mm x 70mm x 80mm). With slight hydrocarbon odour.	(2.00)	
2.20-2.20 2.20	5	ES PID	 0.9ppm				2.60	
						Trial pit terminated at 2.60m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.00 m depth.
2. Poor stability

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**30T tracked 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RSK GEOSCIENCES

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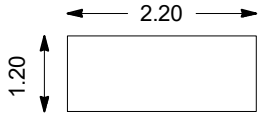
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**24.11.21**	**---**	**E:277748.0 N:186220.0**	**1** of **1**
	End: **24.11.21**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
				1		MADE GROUND: Dark brown slightly silty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of concrete, clinker and slag.		
0.30-0.30	1	ES	1xT+1xJ+1xV				(0.80)	
0.30-0.60	2	B						
0.30		PID	0.1ppm			. . . 0.50m to 0.55m; 1 No. Metal rod.		
						. . . 0.70m to 0.80m; dark reddish brown.	0.80	
						MADE GROUND: Dark brown sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick.		
1.00-1.50	4	B						
1.30-1.30	3	ES	1xT+1xJ+1xV					
1.30		PID	0.1ppm				(1.50)	
1.80-1.90	5	B				. . . 1.80m to 1.90m; layer of slag.		
2.20-2.20	6	ES	1xT+1xJ+1xV	1				
2.20		PID	0.1ppm				2.30	
						Trial pit terminated at 2.30m depth.		

Plan (Not to Scale)



General Remarks

1. Stopped due to water ingress.
2. Water seepage at 2.20m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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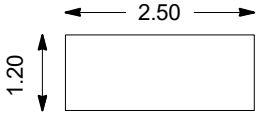
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**03.12.21** End: **03.12.21**	**---**	**E:277535.0 N:186237.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Dark grey slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag. With occasional metal pellets (<20mm x 20mm x 25mm).	0.20	
0.30-0.30 0.30-0.70 0.30	1 2	ES B PID	1xT+1xJ+1xV 0.3ppm			MADE GROUND: Dark grey to black sandy GRAVEL. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick.	(0.50) 0.70	
0.70-0.90	3	B				MADE GROUND: Grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag. Cobbles are angular of slag (<60mm x 90mm x 100mm).	0.90	
						Trial pit terminated at 0.90m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit refused at 0.90m depth.
2. Trial pit remained dry and stable during excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Caterpillar 320**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

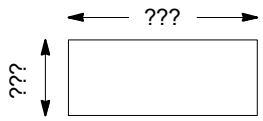
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**03.12.21**	**---**	**E:277675.0 N:186174.0**	**1** of **1**
	End: **03.12.21**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Dark grey slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag. With occasional metal pellets (<20mm x 20mm x 20mm).	0.20	
0.30-0.30 0.30	1	ES PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Grey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick. Cobbles are angular of slag and occasional brick (<60mm x 120mm x 160mm). With rare large metal sheets (<5mm x 250mm x 300mm).	(1.50)	
0.50-1.00	2	B						
1.50-1.50 1.50-1.70 1.50	3 4	ES B PID	1xT+1xJ+1xV 0.1ppm				1.70	
						MADE GROUND: Grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick. Cobbles are angular of slag and occasional brick (<80mm x 190mm x 200mm).	(1.30)	
2.50-2.50 2.50-3.00 2.50	5 6	ES B PID	1xT+1xJ+1xV 0.3ppm	≈			3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit refused at 3.00m depth.
2. Trial pit remained dry and stable during excavation.
3. Slow digging due to compact ground.
4. Water seepage at 2.90m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Caterpillar 320**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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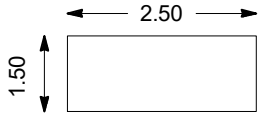
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP14**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**03.12.21**	**---**	**E:277730.0 N:186026.0**	**1** of **1**
	End: **03.12.21**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Pinkish brown gravelly silty SAND. Sand is fine to coarse. Gravel is angular fine to coarse of slag.	0.20	
0.30-0.30 0.30-0.60 0.30	1 2	ES B PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Dark grey sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag and occasional brick. Cobbles are angular of slag (<50mm x 180mm 210mm).		
0.60-0.80	3	B						
						. . . 1.10m to 1.30m; 1No. Redundant pipe running SE-NW at North end of pit.	(2.30)	
2.00-2.00 2.00-2.50 2.00	4 5	ES B PID	1xT+1xJ+1xV 0.4ppm					
							2.50	
						Trial pit terminated at 2.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit refused at 2.50m depth.
2. Trial pit remained dry and stable during excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Caterpillar 320**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

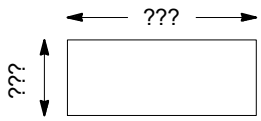
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP15**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**02.12.21** End: **02.12.21**	**---**	**E:277819.0 N:186051.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.50 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND: Grey sandy GRAVEL with medium cobble. Sand is fine to coarse. Gravel is angular fine to coarse of slag and occasional brick. Cobbles are angular of slag (<30mm x 90mm x 200mm)	(0.50) 0.50	
						Trial pit refused at 0.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit refused at 0.50m depth.
2. Trial pit remained dry and stable during excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Caterpillar 320**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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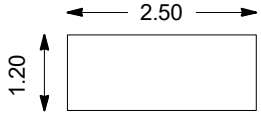
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP16**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**24.11.21**	**---**	**E:277773.0 N:185928.0**	**1** of **1**
	End: **24.11.21**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag. With occasional metal pellets and 1 No. Metal piece possible old handrail (<20mm x 300mm x 400mm)	(0.30)	
						0.30		
						. . . 0.15m to 0.18m; light grey silty sandy gravel.		
0.50-0.50 0.50-1.00 0.50	1 2	ES B PID	1xT+1xJ+1xV 0.3ppm			MADE GROUND: Dark grey slightly silty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag and concrete. Cobbles are angular of slag (<30mm x 95mm x 190mm).	(0.75)	
						1.05		
						. . . 1.00m to 1.05m; 1 No. redundant metal pipe running east-west along pit.		
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Terminated due to redundant pipe.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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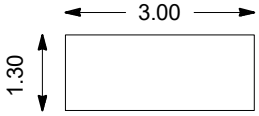
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP19**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.01.22** End: **07.01.22**	**---**	**E:277572.0 N:185980.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20	1	ES	1xT+1xJ+1xV	1		MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag, brick and concrete. Cobbles are angular of slag and brick (<30mm x 100mm x 120mm). With occasional wood and metal fragments (<10mm x 40mm x 180mm).	(0.30) 0.30	
0.50-0.50	2	ES	1xT+1xJ+1xV			MADE GROUND: Grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag. Cobbles are angular of slag and occasional brick.	(1.20) 1.50	
0.50-1.00	3	B						
2.00-2.50	4	B	1xT+1xJ+1xV	1		MADE GROUND: Grey gravelly COBBLES with medium boulder content. Gravel is angular fine to coarse of slag. Cobbles are angular of slag (<70mm x 180mm x 200mm). Boulders are angular of slag (<300mm x 450mm x 460mm). With slight hydrocarbon odour.	(1.10) 2.60	
						Trial pit terminated at 2.60m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.50 m depth.
2. LNAPL seen on water surface.
3. Terminated due to water ingress and pit instability.
4. Water seepage at 2.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

RAW FIELD DATA

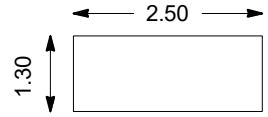
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP20**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.01.22** End: **07.01.22**	**---**	**E:277634.0 N:186035.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag, brick and concrete. Cobbles are angular of slag and brick (<30mm x 100mm x 120mm). With occasional metal fragments (<30mm x 40mm x 180mm).	(0.30) 0.30	
0.50-0.50 0.50-1.00 0.50	2 3	ES B PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND: Light brown sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of slag and brick. Cobbles are angular of slag and occasional brick (<30mm x 70mm x 120mm).	(0.90) 1.20	
1.30-1.30 1.30-1.80 1.30	4 5	ES B PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND: Yellowish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of slag. . . . 1.50m to 1.70m; band of coarse slag gravel.	(1.30) 2.50	
						Trial pit terminated at 2.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.50 m depth.
2. Terminated due to pit instability.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:15 | SB5 |

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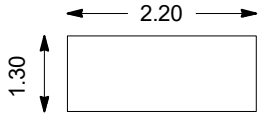
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP21**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.01.22** End: **07.01.22**	**---**	**E:277523.0 N:185829.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.3ppm	1		MADE GROUND: Grass over black gravelly SAND. Sand is fine. Gravel is angular and subangular fine and medium of slag and concrete.	(0.30) 0.30	
0.40-0.40 0.40 0.50-1.00	2 3	ES PID B	1xT+1xJ+1xV 0.7ppm			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine. Gravel is angular and subangular fine and medium of slag, brick and concrete. Cobbles are angular of slag (<30mm x 100mm x 180mm).	(1.30) 1.60	
1.70-2.00 1.70-1.70 1.70	4 5 	B ES PID	 1xT+1xJ+1xV 0.5ppm	1		MADE GROUND: Soft dark grey mottled orange slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and abundant slag.	(0.40) 2.00	
						Trial pit terminated at 2.00m depth.		

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.
2. Water strike at 1.80m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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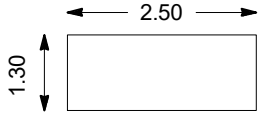
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP22**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.01.22** End: **07.01.22**	**---**	**E:277603.0 N:185742.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
				1		MADE GROUND: Grass over black gravelly SAND. Sand is fine. Gravel is angular and subangular fine and medium of slag and concrete.	0.15	
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.3ppm			MADE GROUND: Dark grey sandy GRAVEL with low cobble content. Sand is fine. Gravel is angular and subangular fine and medium of slag, brick and concrete. Cobbles are angular of slag (<35mm x 110mm x 160mm).	(1.45)	
				1			1.60	
2.00-2.00 2.00-2.50 2.00	3 4	ES B PID	1xT+1xJ+1xV 0.7ppm			MADE GROUND: Soft dark grey mottled orange slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and slag. With slight hydrocarbon odour.	(1.00)	
							2.60	
						Trial pit terminated at 2.60m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Terminated due to water ingress.
3. Water strike at 1.60m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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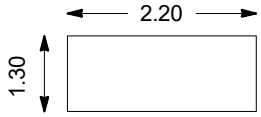
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP23**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**07.01.22** End: **07.01.22**	**---**	**E:277476.0 N:185635.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20	1	ES	1xT+1xJ+1xV	1		MADE GROUND: Grass over black sandy GRAVEL. Sand is fine. Gravel is angular and subangular fine and medium of slag, brick coal and concrete.	(0.50)	
0.20-0.50	2	B						
0.20		PID	0.1ppm					
							0.50	
0.50-0.50	3	ES	1xT+1xJ+1xV			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine. Gravel is angular and subangular fine and medium of slag, brick and concrete. Cobbles are angular of slag (<40mm x 110mm x 190mm).		
0.50		PID	0.7ppm					
1.00-1.30	4	B		1			(1.00)	
							1.50	
						Trial pit terminated at 1.50m depth.		

Plan (Not to Scale)



General Remarks

1. Pit terminated due to water ingress.
2. Water seepage at 1.20m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

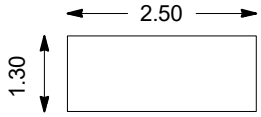
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP25**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277705.0 N:185752.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Dark grey slightly sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag and occasional brick. Cobbles are angular of abundant slag and rare brick (<30mm x 85mm x 130mm).	(1.20) 1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

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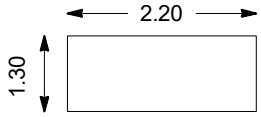
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP26**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277670.0 N:185712.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.6ppm	1		MADE GROUND: Dark grey to black sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant slag (<20mm x 80mm x 150mm).	(0.90) 0.90	
1.00-1.50	3	B				MADE GROUND: Dark grey locally yellowish brown sandy clayey GRAVEL with low cobble content. Sand is fine to coarse, predominantly fine and medium. Gravel is angular and subangular fine to coarse of sandstone and abundant slag. Cobbles are angular of abundant slag (30mm x 70mm x 120mm). With rare pockets of grey silty CLAY. With hydrocarbon odour.		
1.50-1.50 1.50	4	ES PID	1xT+1xJ+1xV 2.0ppm				(1.80) 2.70	
2.70-2.70 2.70-3.20 2.70	5 6	ES B PID	1xT+1xJ+1xV 1.1ppm	1		MADE GROUND (Reworked clay). Firm to stiff dark grey slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone and abundant slag. With hydrocarbon odour.	(0.60) 3.30	
						Trial pit terminated at 3.30m depth.		

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.
2. Water seepage at 2.70m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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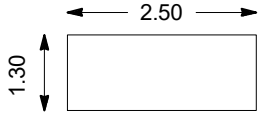
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP27**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277758.0 N:185737.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND: Slag.	0.05	
						MADE GROUND: Dark grey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant slag and rare brick (<30mm x 65mm x 120mm). With metal wire (<3mm x 3mm x 200mm).	(0.95)	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

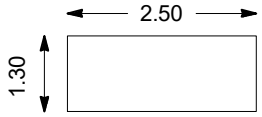
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP28**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277648.0 N:185633.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.3ppm	1		MADE GROUND: Dark grey to black slighty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant (<50mm x 90mm x 140mm). With rare metal wire (<20mm x 20mm x 80mm).	(0.90) 0.90	
1.00-1.00 1.00 1.10-1.50	3 4	ES PID B	1xT+1xJ+1xV 0.3ppm			MADE GROUND: Dark grey locally yellowish brown sandy clayey GRAVEL with low cobble content. Sand is fine to coarse, predominantly fine and medium. Gravel is angular and subangular fine to coarse of sandstone and abundant slag. Cobbles are angular of abundant slag (30mm x 70mm x 120mm).	(1.30) 2.20	
2.50-2.50 2.50-2.60 2.50	5 6	ES D PID	1xT+1xJ+1xV 0.1ppm	1		Stiff grey silty locally gravelly CLAY. Gravel is angular fine to coarse of sandstone. . . . 2.20m to 2.50m; possibly Reworked clay.	(1.10) 3.30	
						Trial pit terminated at 3.30m depth.		

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.
2. Water seepage at 2.20m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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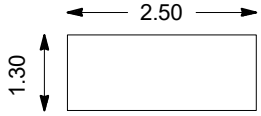
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP29**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277723.0 N:185709.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.3ppm			MADE GROUND: Dark greyish brown slighty silty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag, concrete and brick. Cobbles are angular of abundant slag and rare brick (<30mm x 85mm x 140mm).	(1.80) 1.80	
1.90-1.90 1.90-2.10 1.90	3 4	ES B PID	1xT+1xJ+1xV 0.6ppm			MADE GROUND: Dark grey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant slag and rare brick (<30mm x 65mm x 120mm).	(0.30) 2.10	

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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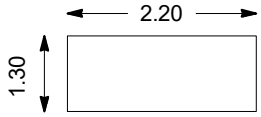
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP30**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277644.0 N:185580.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND: Dark grey to black slighty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant (<50mm x 100mm x 130mm).	(1.10) 1.10	
1.20-1.70	3	B				MADE GROUND: Dark grey locally yellowish brown sandy clayey GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles are angular of abundant slag.		
1.70-1.70 1.70	4	ES PID	 0.2ppm			. . . 2.00m to 2.40mm; pocket of stiff grey gravelly clay.	(1.70) 2.80	

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

RAW FIELD DATA

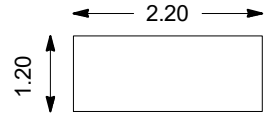
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP31**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**17.01.22** End: **17.01.22**	**---**	**E:277828.0 N:185588.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.8ppm			MADE GROUND: Dark grey to black slighty sandy GRAVEL with low cobble and boulder content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of abundant slag. Cobbles and boulders are angular of abundant slag (<200mm x 290mm x 400mm). With rare plastic bag (<1mm x 20mm x 80mm).	(0.70) 0.70	

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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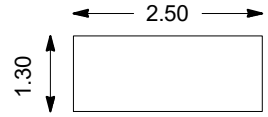
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP34**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**14.01.22**	**---**	**E:277953.0 N:185632.0**	**1** of **1**
	End: **14.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag (<60mm x 90mm x 160mm). With rare metal fragments (<20mm x 50mm x 250mm).	(1.40) 1.40	

Plan (Not to Scale)



General Remarks

1. Terminated due to refusal at 1.40m.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

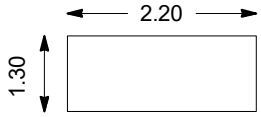
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP42**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **10.01.22**	**---**	**E:278434.0 N:185381.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.10 0.10	1	ES PID	1xT+1xJ+1xV 0.0ppm			TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (2mm x 8mm).	0.20	
						Soft greyish brown silty CLAY.	(0.30) 0.50	
						Soft slightly sandy silty CLAY. Sand is fine.		
1.00-1.50	2	B					(1.00) 1.50	
1.50-1.50 1.50	3	ES PID	1xT+1xJ+1xV 0.0ppm			Soft to firm blueish grey silty CLAY with frequent decaying rootlets (<1mm x 8mm).	(2.00) 3.50	
						Trial pit terminated at 3.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.50 m depth.
2. Both sides collapsed after 10 minutes being left open.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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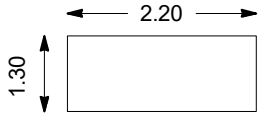
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP43**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **10.01.22**	**---**	**E:278478.0 N:185325.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10		PID	0.0ppm			TOPSOIL. Grass over soft brown slightly sandy CLAY. Sand is fine. With abundant rootlets (2mm x 10mm).	0.25	
0.30-0.30	1	ES	1xT+1xJ+1xV			Soft greyish brown silty CLAY.	0.50	
0.50-1.00	2	B				Firm brownish grey silty CLAY.	(1.00)	
1.00-1.00 1.00	3	ES PID	1xT+1xJ+1xV 0.0ppm				1.50	
2.00-2.25	4	B		1		Soft brownish grey to blueish grey sandy SILT. Sand is fine. . . . 2.25m to 3.50m; blueish grey.	(2.00)	
3.00-3.50	5	B					3.50	
3.50-3.50 3.50	6	ES PID	1xT+1xJ+1xV 0.0ppm			Trial pit terminated at 3.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.50 m depth.
2. Water seepage at 2.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

RAW FIELD DATA

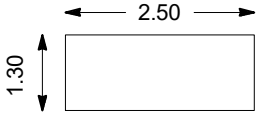
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP44**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**10.01.22** End: **10.01.22**	**---**	**E:278404.0 N:185269.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine.	0.25	
0.30-0.30 0.30-0.50 0.30	1 2	ES B PID	1xT+1xJ+1xV 0.0ppm			Soft greyish brown silty CLAY.	0.50	
						Firm brownish grey silty CLAY.	(1.40)	
1.50-2.00	4	B					1.90	
2.00-2.00 2.00	3	ES PID	 0.0ppm	≈		Soft greyish brown to blueish grey CLAY. With abundant decaying rootlets (<1mm x 6mm). . . . 2.20m to 3.50m; blueish grey.	(1.60)	
3.00-3.50	6	B					3.50	
3.50-3.50 3.50	5	ES PID	1xT+1xJ+1xV 0.0ppm			Trial pit terminated at 3.50m depth.		

Plan (Not to Scale)



General Remarks

1. Water seepage at 2.00m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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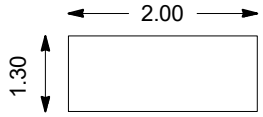
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP45**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22** End: **11.01.22**	**---**	**E:278297.0 N:185227.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.10 0.10	1	ES PID	1xT+1xJ+1xV 0.1ppm			TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (2mm x 10mm).	0.15	
						Soft greyish brown mottled orange silty CLAY.	(0.35)	
							0.50	
0.70-0.70	2	D				Soft to firm grey mottled orange CLAY.	(1.50)	
							2.00	
2.50-2.50	3	D		≈		Soft to firm blueish grey silty CLAY. With frequent decaying rootlets (<2mm x 8mm).	(1.50)	
3.00-3.00 3.00	4	ES PID	1xT+1xJ+1xV 0.1ppm				3.50	
						Trial pit terminated at 3.50m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 2.0 m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:16 | SB5 |

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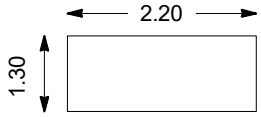
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP46**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22** End: **11.01.22**	**---**	**E:278166.0 N:185153.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (2mm x 10mm).	0.15	
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.2ppm			Soft light greyish brown mottled orangish brown silty CLAY.	(0.35) 0.50	
						Soft to firm brownish grey to blueish grey silty CLAY. With frequent decaying rootlets (<1mm x 9mm).		
1.00-1.00	2	D						
1.50-1.50 1.50	3	ES PID	0.1ppm				(2.70)	
						. . . 2.00m to 3.50m; blueish grey.		
2.50-2.50	4	D						
3.00-3.00 3.00	5	ES PID	0.1ppm				3.20	

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1 m depth.
2. Terminated due to instability.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

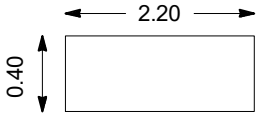
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP47**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22** End: **11.01.22**	**---**	**E:278078.0 N:185161.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.10 0.10	1	ES PID	1xT+1xJ+1xV 0.0ppm			TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (3mm x 20mm).	0.15	
0.30-0.30	2	D				Soft to firm light greyish brown mottled orange silty CLAY.	(0.35) 0.50	
1.50-1.50 1.50-2.00 1.50	3 4	ES B PID	1xT+1xJ+11xV 0.0ppm	1		Firm brownish grey mottled orange slightly sandy silty CLAY. Sand is fine. With occasional pocket of silty fine Sand (<30mm x 60mm x 100mm).	(1.50) 2.00	
3.00-3.00	5	D				Soft blueish grey silty CLAY. With frequent decaying rootlets (3mm x 12mm).	(1.20) 3.20	
3.20-3.20 3.20	6	ES PID	1xT+1xJ+1xV 0.0ppm					

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.5 m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RSK GEOSCIENCES

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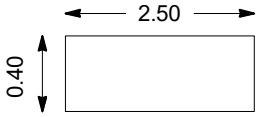
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP48**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22** End: **11.01.22**	**---**	**E:277936.0 N:185071.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (3mm x 20mm).	0.15	
0.30-0.30 0.30	1	ES PID	1xT+1xJ+1xV 0.1ppm			Soft light greyish brown mottled orangish brown CLAY.	(0.35) 0.50	
0.70-0.70 0.70-0.70 0.70	2 3	D ES PID	 1xT+1xJ+1xV 0.0ppm			Soft to firm brownish grey silty CLAY.	(0.90) 1.40	
1.70-2.00	4	B		1		Soft blueish grey slightly sandy SILT. Sand is fine.	(1.60) 3.00	
2.50-2.50 2.50	5	ES PID	 0.0ppm					

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.50m m depth.
2. Terminated due to instability.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

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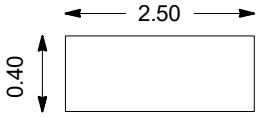
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP49**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22**	**---**	**E:277860.0 N:185236.0**	**1** of **1**
	End: **11.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.10 0.10	1	ES PID	1xT+1xJ+1xV 0.0ppm			TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (3mm x 15mm).	0.20	
0.40-0.40	2	D				Soft light greyish brown mottled orange alightky sandy silty CLAY. Sand is fine.	(0.30) 0.50	
1.00-1.00	3	D				Grey firm silty CLAY.	(0.70) 1.20	
2.00-2.00 2.00-2.50 2.00	4 5	ES B PID	0.0ppm	1		Soft blueish grey sandy SILT. Sand is fine.	(1.30) 2.50	

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.2 m depth.
2. Terminated due to pit collapse .

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

RAW FIELD DATA

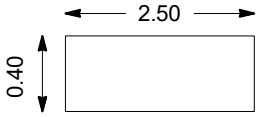
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP50**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**11.01.22** End: **11.01.22**	**---**	**E:277861.0 N:185366.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
				1		TOPSOIL. Grass over sofy brown slightly sandy CLAY. Sand is fine. With abundant rootlets (2mm x 10mm).	0.15	
0.30-0.30 0.30	1	ES PID	1xT+1xJ+1xV 0.0ppm			Soft light greyish brown mottled orange alightky sandy silty CLAY. Sand is fine.	(0.35) 0.50	
0.70-0.70 0.70	2	ES PID	1xT+1xJ+1xV 0.0ppm			Soft greyish brown mottled orange alightky sandy silty CLAY. Sand is fine. With frequent decaying rootlets (<1mm x 8mm).	(1.50)	
1.00-1.50	3	B		1			2.00	
2.20-2.20 2.20	4	ES PID	0.0ppm			Soft blueish grey silty CLAY.	(1.20)	
3.20-3.20	5	D					3.20	

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1 m depth.
2. Pit terminated due to instability.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RAW FIELD DATA

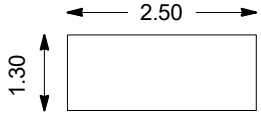
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP51**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**18.01.22** End: **18.01.22**	**---**	**E:277462.0 N:186177.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30-0.30 0.30-0.80 0.30	1 2	ES B PID	1xT+1xJ+1xV 0.4ppm	1		MADE GROUND: Dark brown sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone with abundant brick, concrete and frequent slag. Cobbles are angular and subangular of concrete and brick (<40mm x 100mm x 180mm). With slight hydrocarbon odour.	(0.90) 0.90	
				1		MADE GROUND: Old brick structure. Recovered as cobbles of brick.	(0.40) 1.30	

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RAW FIELD DATA

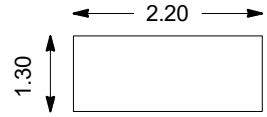
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP53**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**18.01.22**	**---**	**E:277464.0 N:186067.0**	**1** of **1**
	End: **18.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50-0.50 0.50-1.00 0.50	1 2	ES B PID	1xT+1xJ+1xV 0.2ppm	1 1		MADE GROUND: Dark grey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of concrete, brick and slag (<40mm x 100mm x 180mm). With various anthropogenic material such as plastic bags, plastic fragments, metals fragments and rebar. With strong hydrocarbon odour.	(1.00) 1.00	

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress and refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RAW FIELD DATA

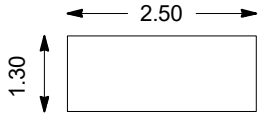
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP54**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**18.01.22** End: **18.01.22**	**---**	**E:277555.0 N:185997.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.70 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Dark brown to black sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone with abundant brick, concrete and frequent slag. Cobbles are angular of abundant concrete (<30mm x 90mm x 150mm). With abundant rebar (<40mm x 40mm x 300mm).	(1.00) 1.00	
1.10-1.10 1.10	3	ES PID	1xT+1xJ+1xV 0.2ppm			MADE GROUND: Light brown sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone with abundant concrete and brick. Cobbles are angular of concrete and brick (<50mm x 90mm x 150mm).	1.20	

Plan (Not to Scale)



General Remarks

1. Terminated due to pit refusal.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

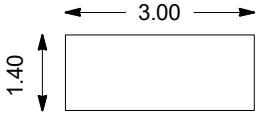
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP55**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**19.01.22**	**---**	**E:277846.0 N:185723.0**	**1** of **1**
	End: **19.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20	1	ES PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND: Brown slithtly sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and abundant slag and occasional brick.	(0.60) 0.60	
0.70-0.70 0.70-1.20 0.70	2 3	ES B PID	1xT+1xJ+1xV 0.1ppm			MADE GROUND: Brown sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and abundant slag and occasional brick. Cobbles are angular of abundant slag (<50mm x 90mm x 150mm). . . . 1.00m to 1.20m; orangeish brown.	(0.90) 1.50	
1.60-1.60 1.60	4	ES PID	1xT+1xJ+1xV 0.4ppm			MADE GROUND: Dark grey slighty silty slighty sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and abundant slag and occasional brick.	(0.30) 1.80	
2.50-2.50 2.50-3.00 2.50	5 6	ES B PID	1xT+1xJ+1xV 0.1ppm	1		MADE GROUND: Grey slightly sandy gravelly COBBLES. Sand is fine to coarse. Gravel is angular fine to coarse of slag. Cobbles are angular of slag (<90mm x 200mm x 200mm).	(1.80) 3.60	

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 1.80 m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
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RSK GEOSCIENCES

RAW FIELD DATA

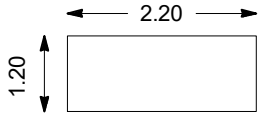
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP56**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**12.01.22**	**---**	**E:278002.0 N:185683.0**	**1** of **1**
	End: **12.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30-0.30	1	ES	1xT+1xJ+1xV	1		MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag (<50mm x 90mm x 200mm).	(1.60)	
0.30-0.80	2	B						
0.30		PID	0.9ppm					
1.50-2.00	3	B					1.60	
				1		MADE GROUND: Grey GRAVEL with high cobble and low boulder content. Gravel is angular fine to coarse of abundant slag. Cobbles and boulders are angular of slag (<200m x 350mm x 450mm).	(0.90)	
							2.50	

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

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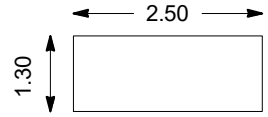
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP57**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**12.01.22** End: **12.01.22**	**---**	**E:278029.0 N:185645.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.60 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.4ppm			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag.	(0.80) 0.80	
1.00-1.50	3	B				MADE GROUND: Grey sandy GRAVEL with medium cobble content. With wood and glass and plastic	(0.90) 1.70	
1.80-1.80 1.80	4	ES PID	0.5ppm	1		Soft dark grey CLAY with abundant decaying rootlets (<2mm x 15mm) and occasional shell fragments (<3mm x 10mm x 12mm). . . . 1.70m to 2.00m; Reworked clay with occasional slag gravel.		
2.00-2.50	5	B						
2.50-2.50 2.50	6	ES PID	1xT+1xJ+1xV 0.1ppm				(1.80) 3.50	

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RSK GEOSCIENCES

RAW FIELD DATA

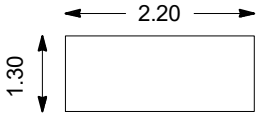
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP58**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**14.01.22**	**---**	**E:277956.0 N:185597.0**	**1** of **1**
	End: **14.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20	1	ES	1xT+1xJ+1xV	1		MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag (<20mm x 70mm x 120mm).	(1.20)	
0.20-0.70	2	B						
0.20		PID	0.8ppm				1.20	
1.50-2.00	3	B		1		MADE GROUND: Grey GRAVEL with high cobble and low boulder content. Gravel is angular fine to coarse of abundant slag. Cobbles and boulders are angular of slag (<200m x 350mm x 450mm).	(1.30)	
							2.50	
2.80-2.80	4	ES	1xT+1xJ+1xV			MADE GROUND (Reworked clay). Dark blueish grey slightly sandy gravelly CLAY with frequent decaying rootlets (<2mm x 20mm). Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone and abundant slag. With slight hydrocarbon odour.	(0.50)	
2.80-3.00	5	B						
3.00		PID	1.0ppm				3.00	

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

RAW FIELD DATA

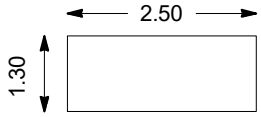
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP59**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**14.01.22** End: **14.01.22**	**---**	**E:278296.0 N:185633.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.60 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.6ppm	1		MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag (<50mm x 90mm x 150mm).	(1.00) 1.00	
1.20-1.70	3	B		1		MADE GROUND: Grey GRAVEL with high cobble and low boulder content. Gravel is angular fine to coarse of abundant slag. Cobbles and boulders are angular of slag (<200m x 350mm x 450mm).	(0.80) 1.80	
1.90-1.90 1.90 2.00-2.50	4 5	ES PID B	1xT+1xJ+1xV 0.8ppm			MADE GROUND (Reworked clay). Dark blueish grey slightly sandy gravelly CLAY with frequent decaying rootlets (<2mm x 20mm). Sand is fine to coarse. Gravel is angular and subangular fine to coarse of sandstone and abundant slag.	(1.20) 3.00	

Plan (Not to Scale)



General Remarks

1. Terminated due to water ingress.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

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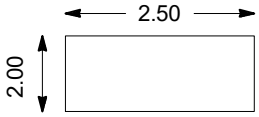
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP60**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**14.01.22**	**---**	**E:277791.0 N:185878.0**	**1** of **1**
	End: **14.01.22**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20-0.60 0.20	1 2	ES B PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND: Dark brown slightly silty gravelly SAND with low cobble content. Sand is fine and medium. Gravel is angular and subangular fine to coarse of sandstone and abundant slag. Cobbles are angular of slag (<40mm x 65mm x 100mm).	(0.60) 0.60	
1.00-1.00 1.00-1.50 1.00	3 4	ES B PID	1xT+1xJ+1xV 0.0ppm			MADE GROUND: Yellowish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to subrounded fine and medium of sandstone and abundant slag.	(1.20) 1.80	

Plan (Not to Scale)



General Remarks

1. Trial pit was unstable below 0.6 m depth.
2. Terminated due to pit instability.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

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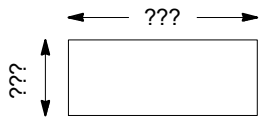
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Project Cronus	**Tata Steel UK Ltd**	**TP61**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
315075	**14.01.22** End: **14.01.22**	**---**	**E:278221.0 N:185715.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.20 0.20 0.30-0.80	1 2	ES PID B	1xT+1xJ+1xV 0.4ppm			MADE GROUND: Dark grey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone with abundant slag and brick. Cobbles are angular of slag (<40mm x 80mm x 170mm).	(1.00) 1.00	
1.20-1.20 1.20-1.70 1.20	3 4 	ES B PID	1xT+1xJ+1xV 0.5ppm			Stiff dark grey CLAY with abundant decaying rootlets (<2mm x 15mm).	(1.00) 2.00	
						Soft grey mottled orange clayey SILT.	(1.50) 3.50	
3.00-3.00 3.00-3.10 3.00	5 6 	ES D PID	1xT+1xJ+1xV 0.5ppm					

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled 360° excavator**	**RHorne**	JCB

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 315075-PROJECT-CRONUS.GPJ - v10_01.
RSK Environment Ltd, The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel: 0117 947 1006 Fax: 0117 947 1009 Web: www.rsk.co.uk. | 04/03/22 - 11:17 | SB5 |

APPENDIX E
GROUND GAS MONITORING DATA AND SITE CONDITIONS

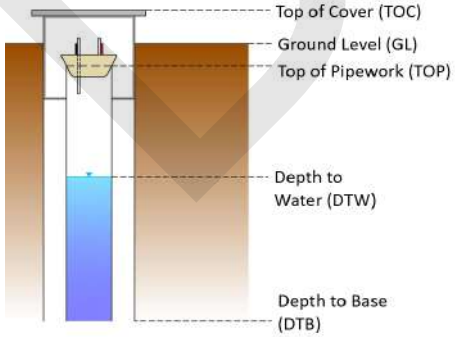
DRAFT

GAS MONITORING FIELD SHEET

Monitoring Date:	01/08/2024	Measurement datum: TOC / GL / TOP / Other		Offset to GL (m):					
Pre-Testing Remarks:		Air Temperature: °C		Device:	G508232				
		Weather:	Sunny	Serial Number:					
		Ground Conditions:	Dry	Daily Check:					
		Wind: NONE / LIGHT / MEDIUM / STRONG							
		Tidal State: (if applicable) High / Low / Rising / Falling							
Exploratory Position ID:	BH317	Monitoring Round Number:	1	Test Number:					
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep		Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)					

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE				
Time Start (hh:mm)	11:00		1011		Observations (e.g. on-site activities):				
Time End (hh:mm)	14:30								
Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0	0.7	0	10.7	0.3	14.5	2	0		
5	0.7	15	9.1	0.3	14.5	2	0		
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							
Stage 1 gas flow - Peak (l/h)			**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.						
Stage 1 gas flow - Steady State (l/h)									

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	2.45	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	16.12	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	EAF Prroject	Data Collected By:	
	Project Manager / Engineer:	James Bloore	Checked:	
	Contract Ref:	315531	Page number:	

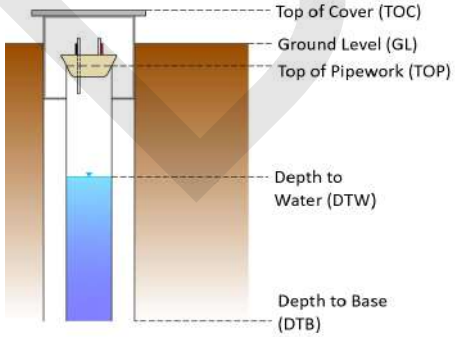
DRAFT

GAS MONITORING FIELD SHEET

Monitoring Date:	09/08/2024	Measurement datum: TOC / GL / TOP / Other		Offset to GL (m):					
Pre-Testing Remarks:		Air Temperature: °C		Device:	G508232				
		Weather:	Sunny	Serial Number:					
		Ground Conditions:	Dry	Daily Check:					
		Wind: NONE / LIGHT / MEDIUM / STRONG							
		Tidal State: (if applicable) High / Low / Rising / Falling							
Exploratory Position ID:	BH317	Monitoring Round Number:	2	Test Number:					
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep		Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)					

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE				
Time Start (hh:mm)	10:00		1014		Observations (e.g. on-site activities):				
Time End (hh:mm)	14:00								
Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0	0.7	0	10	0.2	14.9	2	0		N/A
5	0.7	15	9.3	0.2	14.9	2	0		
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							
Stage 1 gas flow - Peak (l/h)			**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.						
Stage 1 gas flow - Steady State (l/h)									

STAGE 3 WATER LEVEL OBSERVATION					
	Depth (from datum) to water (DTW): (m)	2.58	Time:		LNAPL Top (from datum) (m):
	Depth (from datum) to well base (DTB): (m)	16.12	Purge Start:		DNAPL Top (from datum) (m):
	Hole Purged: Yes / No		Purge End:		Water Observations:
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)		



Post testing remarks:

Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	EAF Prroject	Data Collected By:	
	Project Manager / Engineer:	James Bloore	Checked:	
	Contract Ref:	315531	Page number:	

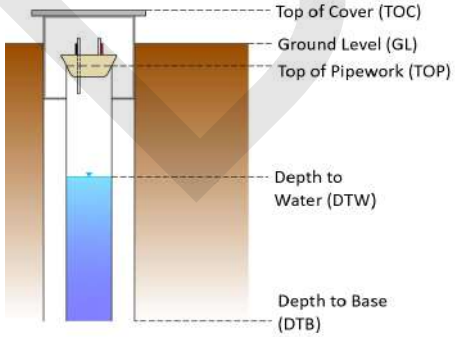
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GAS MONITORING FIELD SHEET

Monitoring Date:	01/08/2024	Measurement datum: TOC / GL / TOP / Other		Offset to GL (m):					
Pre-Testing Remarks:		Air Temperature: °C		Device:	G508232				
		Weather:	Sunny	Serial Number:					
		Ground Conditions:	Dry	Daily Check:					
		Wind: NONE / LIGHT / MEDIUM / STRONG							
		Tidal State: (if applicable) High / Low / Rising / Falling							
Exploratory Position ID:	BH322	Monitoring Round Number:	1	Test Number:					
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep		Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)					

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE				
Time Start (hh:mm)	11:00		1011		Observations (e.g. on-site activities):				
Time End (hh:mm)	14:30								
Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0	0.5	0	0.2	0.1	19.5	2	0		
5	0.5	15	0.2	0.1	19.5	2	0		
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							
Stage 1 gas flow - Peak (l/h)			**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.						
Stage 1 gas flow - Steady State (l/h)									

STAGE 3 WATER LEVEL OBSERVATION					
	Depth (from datum) to water (DTW): (m)	1.26	Time:		LNAPL Top (from datum) (m):
	Depth (from datum) to well base (DTB): (m)	14.74	Purge Start:		DNAPL Top (from datum) (m):
	Hole Purged: Yes / No		Purge End:		Water Observations:
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)		



Post testing remarks:

Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	EAF Prroject	Data Collected By:	
	Project Manager / Engineer:	James Bloore	Checked:	
	Contract Ref:	315531	Page number:	

DRAFT

GAS MONITORING FIELD SHEET

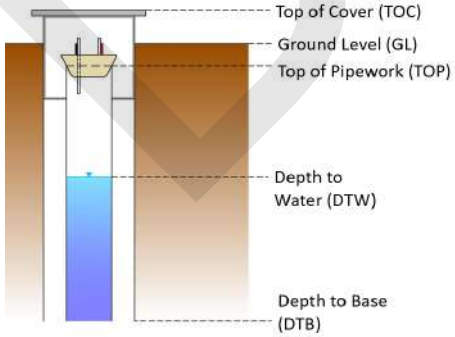
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Pre-Testing Remarks:		Air Temperature: °C		Device:	G508232	
		Weather:	Sunny	Serial Number:		
		Ground Conditions:	Dry	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG				
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH324	Monitoring Round Number:	2	Test Number:		
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep		Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	
Time Start (hh:mm)	10:00		1014		Observations (e.g. on-site activities):	
Time End (hh:mm)	14:00					

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0	0.4	0	0.2	0.1	19.5	2	0		N/A
5	0.4	15	0.2	0.1	19.5	2	0		
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)		

STAGE 3 WATER LEVEL OBSERVATION					
	Depth (from datum) to water (DTW): (m)	1.43	Time:		LNAPL Top (from datum) (m):
	Depth (from datum) to well base (DTB): (m)	14.62	Purge Start:		DNAPL Top (from datum) (m):
	Hole Purged: Yes / No		Purge End:		Water Observations:
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)		



Post testing remarks:

Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	EAF Prroject	Data Collected By:
	Project Manager / Engineer:	James Bloore	Checked:
	Contract Ref:	315531	Page number:

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GAS MONITORING FIELD SHEET

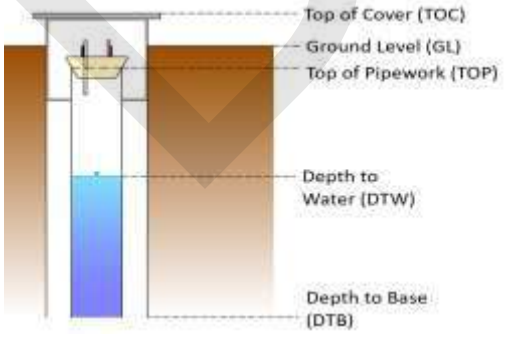
Monitoring Date:	10/29/2024	Measurement datum: TOC / GL / TOP / Other	TOP	Offset to GL (m):			0.3
Pre-Testing Remarks:		Air Temperature: °C	13	Device:	GA5000		
		Weather:	Sunny	Serial Number:	G507779		
		Ground Conditions:	Wet	Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		Light			
		Tidal State: (if applicable) High / Low / Rising / Falling		NA			
Exploratory Position ID:	BH317	Monitoring Round Number:	4	Test Number:	1		
Install Type: SINGLE / DOUBLE	Single	Pipe Ref: 1) Shallow 2) Deep	Shallow	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	50		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	Single
Time Start (hh:mm)	10:36	10:36	1025	5.5	Observations (e.g. on-site activities):	
Time End (hh:mm)	10:39	10:46				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane	Carbon Dioxide (%/vol)	Oxygen	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL	PID
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)	(%/vol)		(%/vol)			(%)	(ppm)
0	0	0	0	0	21.3	0	0		
5	0	15	93.3	1.8	0.4	1	0		
10	0	30	93.8	1.8	0.2	1	0		
15	0	60	93.8	1.8	0.2	1	0		
20	0	90	93.9	1.8	0.2	1	0		
25	0	120	94	1.8	0.1	1	0		
30	0	180	93.9	1.8	0.1	1	0		
40		240	84.3	1.6	3.2	0	8		
50		300	60.1	1.2	7.3	0	0		
60		360	39.3	0.8	11.6	0	0		
90		420	36.1	0.7	12.3	0	0		
120		480	33.7	0.7	12.9	0	0		
150		540	29.7	0.6	13.9	0	0		
180		600	27.7	0.6	14.4	0	0		

Stage 1 gas flow - Peak (l/h)	0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	2.45	Time:	10:36:00 AM	LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	6.82	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No	No	Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	No
	Sample Media: Gas/Water	N/A
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	EAF		Data Collected By:	Rachael Lockyer
Project Manager / Engineer:	James Bloore		Checked:	

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GAS MONITORING FIELD SHEET

	Contract Ref:	315531	Page number:	
TPF210 Issue 6				

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GAS MONITORING FIELD SHEET

Monitoring Date:	30/09/2024	Measurement datum: TOC / GL / TOP / Other	GL	Offset to GL (m):	0

Pre-Testing Remarks:	Air Temperature: °C		Device:
Steady state value are taken when there is no chang	Weather:	OVERCAST	Serial Number: G508232
	Ground Conditions:	WET	Daily Check:
	Wind: NONE / LIGHT / MEDIUM / STRONG		
	Tidal State: (if applicable) High / Low / Rising / Falling		

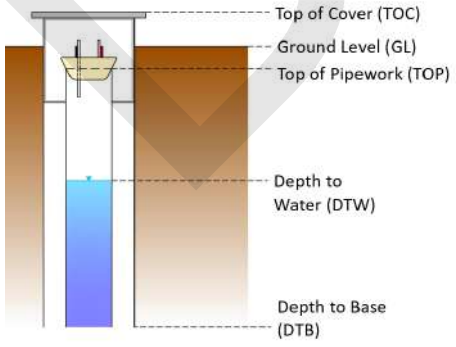
Exploratory Position ID:	BH317	Monitoring Round Number:	3	Test Number:
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	
Time Start (hh:mm)			986		Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0		0	6.2	0.2	15.8	1	0	0	
5		15							
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							

Stage 1 gas flow - Peak (l/h)	0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	2.15	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	16.09	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	TATA Steel	Data Collected By:	James Bloor
	Project Manager / Engineer:	James Bloor	Checked:	
	Contract Ref:	2072340	Page number:	

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GAS MONITORING FIELD SHEET

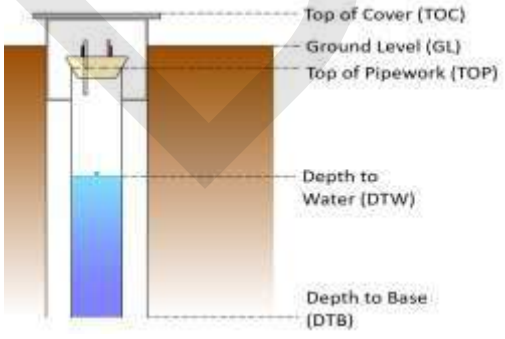
Monitoring Date:	11/14/2024	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			0.4
Pre-Testing Remarks:		Air Temperature: °C	16		Device:	GA5000	
		Weather:	Cloudy, dry ground		Serial Number:	NA	
		Ground Conditions:	Dry		Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG			Light		
		Tidal State: (if applicable) High / Low / Rising / Falling			NA		
Exploratory Position ID:	BH317	Monitoring Round Number:	5		Test Number:	1	
Install Type: SINGLE / DOUBLE	Single	Pipe Ref: 1) Shallow 2) Deep	Shallow		Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	50	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	Single
Time Start (hh:mm)	9:55	9:55	1032	0	Observations (e.g. on-site activities):	
Time End (hh:mm)	9:58	10:05				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane	Carbon Dioxide (%/vol)	Oxygen	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL	PID
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)	(%/vol)		(%/vol)			(%)	(ppm)
0	0	0	0	1	21	1			
5	0	15	93.2	1.9	12				
10	0.1	30	93.9	2	1.5	1	0	3	
15	0.1	60	94	2	0.3	1		3	
20	0.1	90	94.1	2	0.2	1		3	
25	0.1	120	94.1	2	0.2	1			
30	0.1	180	94.1	2	0.2	1		3	
40		240	94.1	2	0.2	1		3	
50		300	94.1	2	0.2	1		3	
60		360							
90		420							
120		480							
150		540							
180		600							

Stage 1 gas flow - Peak (l/h)	0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	2.65	Time:	9:55:00 AM	LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	16.3	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No	No	Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	No
	Sample Media: Gas/Water	N/A
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	EAF		Data Collected By:	Jagan Raj
Project Manager / Engineer:	James Bloore		Checked:	

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GAS MONITORING FIELD SHEET

	Contract Ref:	315531	Page number:	
TPF210 Issue 6				

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GAS MONITORING FIELD SHEET

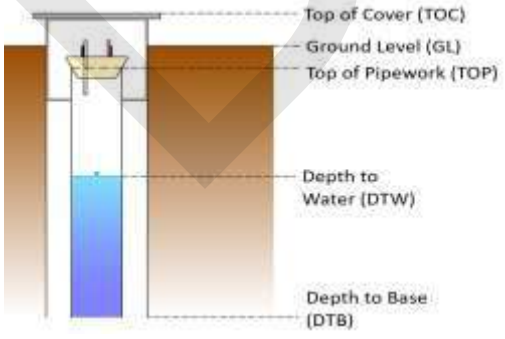
Monitoring Date:	10/29/2024	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			0.35
Pre-Testing Remarks:		Air Temperature: °C	13	Device:	GA5000		
		Weather:	Sunny	Serial Number:	G507779		
		Ground Conditions:	Wet	Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		Light			
		Tidal State: (if applicable) High / Low / Rising / Falling		NA			
Exploratory Position ID:	BH324	Monitoring Round Number:	4	Test Number:	1		
Install Type: SINGLE / DOUBLE	Single	Pipe Ref: 1) Shallow 2) Deep	Shallow	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	50		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	Single
Time Start (hh:mm)	14:58	14:58	1023	0.02	Observations (e.g. on-site activities):	
Time End (hh:mm)	15:01	15:08				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0	0	0	0	0	20.6	0	0		
5	0	15	0.1	0	20.8	2	0		
10	0	30	0	0	20.9	2	0		
15	0	60	0	0	20.9	2	0		
20		90	0	0	20.9	2	0		
25		120	0	0	21	2	0		
30		180	0	0	21	2	0		
40		240	0	0	21	2	0		
50		300	0	0	21	2	0		
60		360	0	0	21	1	0		
90		420	0	0	21.1	2	0		
120		480							
150		540							
180		600							

Stage 1 gas flow - Peak (l/h)	0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	1.29	Time:	2:58:00 PM	LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	2.4	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No	No	Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	No
	Sample Media: Gas/Water	N/A
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

	Contract Name:	EAF		Data Collected By:	Rachael Lockyer
	Project Manager / Engineer:		James Bloore	Checked:	

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GAS MONITORING FIELD SHEET

	Contract Ref:	315531	Page number:	
TPF210 Issue 6				

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GAS MONITORING FIELD SHEET

Monitoring Date:	30/09/2024	Measurement datum: TOC / GL / TOP / Other	GL	Offset to GL (m):	0

Pre-Testing Remarks:	Air Temperature: °C		Device:
Steady state value are taken when there is no chang	Weather:	OVERCAST	Serial Number: G508232
	Ground Conditions:	WET	Daily Check:
	Wind: NONE / LIGHT / MEDIUM / STRONG		
	Tidal State: (if applicable) High / Low / Rising / Falling		

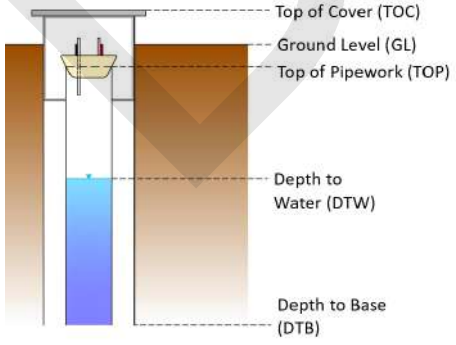
Exploratory Position ID:	BH324	Monitoring Round Number:	3	Test Number:
Install Type: SINGLE / DOUBLE		Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	
Time Start (hh:mm)			986		Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
0		0	0	0.1	20.1	0	0	0	
5		15							
10		30							
15		60							
20		90							
25		120							
30		180							
40		240							
50		300							
60		360							
90		420							
120		480							
150		540							
180		600							

Stage 1 gas flow - Peak (l/h)	0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0	

STAGE 3 WATER LEVEL OBSERVATION					
	Depth (from datum) to water (DTW): (m)	1.43	Time:		LNAPL Top (from datum) (m):
	Depth (from datum) to well base (DTB): (m)	14.62	Purge Start:		DNAPL Top (from datum) (m):
	Hole Purged: Yes / No		Purge End:		Water Observations:
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)		



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	TATA Steel	Data Collected By:	James Bloor
	Project Manager / Engineer:	James Bloor	Checked:	
	Contract Ref:	2072340	Page number:	

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APPENDIX F
LABORATORY CERTIFICATES FOR SOIL ANALYSIS

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

Amended Report

Report No.:	24-18337-6		
Initial Date of Issue:	01-Jul-2024	**Date of Re-Issue:**	16-Jan-2025
Re-Issue Details:	This report has been revised and directly supersedes 24-18337-5 in its entirety		
Client	RSK Geosciences		
Client Address:	Battle Gate Road Boxworth Cambridge CB23 4NN		
Contact(s):	Rachel Cann		
Project	315531 EAF Meltshop		
Quotation No.:	Q24-35208	**Date Received:**	11-Jun-2024
Order No.:	P02150967	**Date Instructed:**	20-Jun-2024
No. of Samples:	7		
Turnaround (Wkdays):	27	**Results Due:**	26-Jul-2024
Date Approved:	24-Jul-2024	**Subcon Results Due:**	26-Jul-2024

Approved By:



Details: David Smith, Technical Director

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

DRAFT

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

Amended Report

Report No.:	24-19025-3		
Initial Date of Issue:	01-Jul-2024	**Date of Re-Issue:**	16-Jan-2025
Re-Issue Details:	This report has been revised and directly supersedes 24-19025-2 in its entirety		
Client	RSK Geosciences		
Client Address:	Battle Gate Road Boxworth Cambridge CB23 4NN		
Contact(s):	Rachel Cann		
Project	EAF 315531 Port Talbet		
Quotation No.:	Q24-35208	**Date Received:**	17-Jun-2024
Order No.:	P02150967	**Date Instructed:**	20-Jun-2024
No. of Samples:	6		
Turnaround (Wkdays):	8	**Results Due:**	01-Jul-2024
Date Approved:	27-Jun-2024		
Approved By:			



Details: David Smith, Technical Director

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

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

Amended Report

Report No.:	24-25899-4		
Initial Date of Issue:	20-Aug-2024	**Date of Re-Issue:**	16-Jan-2025
Re-Issue Details:	This report has been revised and directly supersedes 24-25899-3 in its entirety		
Client	RSK Geosciences		
Client Address:	Battle Gate Road Boxworth Cambridge CB23 4NN		
Contact(s):	James Bloore		
Project	EAF Meltshop Project		
Quotation No.:	Q24-35208	**Date Received:**	13-Aug-2024
Order No.:	P02150967	**Date Instructed:**	13-Aug-2024
No. of Samples:	6		
Turnaround (Wkdays):	6	**Results Due:**	20-Aug-2024
Date Approved:	20-Aug-2024	**Subcon Results Due:**	20-Aug-2024

Approved By:



Details: David Smith, Technical Director

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

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-19025
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1819250	1819251	1819252	1819253	1819254	1819255	1819256	1821789
				Sample Location:		BH323	BH317	BH317	BH317	BH317	BH317	BH317	BH317
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	2.2	1.5	0.70	6.50	3.3	4.10	10.50
				Date Sampled:		03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	12-Jun-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	2.4	16	8.6	7.5	18	27	20	17
Soil Colour		N	2040		N/A	Black	Brown	Brown	Brown	Brown	Brown	Brown	Grey
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	None	Stones	Stones	None
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand	Clay	Sand	Clay	Clay
Arsenic		M	2455	mg/kg	0.5	2.6	9.0	14	5.7	18	11	21	4.3
Cadmium		M	2455	mg/kg	0.10	0.64	< 0.10	0.56	0.40	< 0.10	< 0.10	0.22	< 0.10
Chromium		M	2455	mg/kg	0.5	200	29	1100	1400	36	43	18	14
Copper		M	2455	mg/kg	0.50	14	3.4	52	42	11	40	27	5.6
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	0.10	0.07	< 0.05	0.09	< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	7.3	4.5	34	20	33	36	20	13
Lead		M	2455	mg/kg	0.50	25	11	60	64	22	24	27	7.6
Selenium		M	2455	mg/kg	0.25	< 0.25	0.39	1.7	0.72	0.72	0.75	0.52	< 0.25
Zinc		M	2455	mg/kg	0.50	67	22	190	200	92	89	85	38
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	0.66	< 0.50	< 0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[B] < 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[B] 4.4	5.6	7.4	5.9	3.3	9.4	6.4	3.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	[B] 3.1	6.3	12	6.1	1.2	6.1	4.8	1.1
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[B] 11	2.9	35	74	< 2.0	3.5	3.4	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	[B] 180	< 3.0	280	880	< 3.0	< 3.0	10	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[B] < 10	< 10	32	110	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	[B] 200	15	340	970	5.5	19	25	5.6
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[B] 200	15	370	1100	< 10	19	25	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[B] < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[B] < 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[B] < 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[B] < 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[B] 6.7	3.0	3.6	6.5	3.3	3.8	3.4	3.4
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[B] 5.9	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	19	2.1
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	[B] 2.5	1.1	16	42	< 1.0	1.2	33	< 1.0

Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-19025
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1819250	1819251	1819252	1819253	1819254	1819255	1819256	1821789
				Sample Location:		BH323	BH317	BH317	BH317	BH317	BH317	BH317	BH317
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	2.2	1.5	0.70	6.50	3.3	4.10	10.50
				Date Sampled:		03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	12-Jun-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	[B] 13	< 5.0	< 5.0	6.5	< 5.0	< 5.0	24	5.5
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	[B] 15	< 10	16	49	< 10	< 10	57	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[B] < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	[B] 210	18	340	980	< 10	24	49	11
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	[B] 220	19	390	1100	< 10	25	82	11
Naphthalene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	0.59	< 0.10	2.3	< 0.10	
Acenaphthylene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	0.18	< 0.10	0.41	< 0.10	
Acenaphthene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	0.21	< 0.10	0.81	< 0.10	
Fluorene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	0.23	< 0.10	1.0	< 0.10	
Phenanthrene		M	2700	mg/kg	0.10	[B] < 0.10	0.33	< 0.10	0.81	< 0.10	2.6	< 0.10	
Anthracene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	0.15	< 0.10	0.15	< 0.10	
Fluoranthene		M	2700	mg/kg	0.10	[B] < 0.10	0.46	< 0.10	0.74	< 0.10	0.70	< 0.10	
Pyrene		M	2700	mg/kg	0.10	[B] < 0.10	0.46	< 0.10	1.2	< 0.10	0.69	< 0.10	
Benzo[a]anthracene		M	2700	mg/kg	0.10	[B] < 0.10	0.45	< 0.10	1.6	< 0.10	0.20	< 0.10	
Chrysene		M	2700	mg/kg	0.10	[B] < 0.10	0.75	< 0.10	3.2	< 0.10	0.71	< 0.10	
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[a]pyrene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Total Of 16 PAH's		M	2700	mg/kg	2.0	[B] < 2.0	2.5	< 2.0	8.8	< 2.0	9.5	< 2.0	
Dichlorodifluoromethane		U	2760	µg/kg	1.0								
Chloromethane		M	2760	µg/kg	1.0								
Vinyl Chloride		M	2760	µg/kg	1.0								
Bromomethane		M	2760	µg/kg	20								
Chloroethane		U	2760	µg/kg	2.0								
Trichlorofluoromethane		M	2760	µg/kg	1.0								
1,1-Dichloroethene		M	2760	µg/kg	1.0								
Dichloromethane		N	2760	µg/kg	50								
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0								
1,1-Dichloroethane		M	2760	µg/kg	1.0								
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0								
Bromochloromethane		U	2760	µg/kg	5.0								
Trichloromethane		M	2760	µg/kg	1.0								
1,1,1-Trichloroethane		M	2760	µg/kg	1.0								
Tetrachloromethane		M	2760	µg/kg	1.0								
1,1-Dichloropropene		U	2760	µg/kg	1.0								
Benzene		M	2760	µg/kg	1.0								

Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-19025
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1819250	1819251	1819252	1819253	1819254	1819255	1819256	1821789
				Sample Location:		BH323	BH317	BH317	BH317	BH317	BH317	BH317	BH317
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	2.2	1.5	0.70	6.50	3.3	4.10	10.50
				Date Sampled:		03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	12-Jun-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
1,2-Dichloroethane		M	2760	µg/kg	2.0								
Trichloroethene		N	2760	µg/kg	1.0								
1,2-Dichloropropane		M	2760	µg/kg	1.0								
Dibromomethane		M	2760	µg/kg	1.0								
Bromodichloromethane		M	2760	µg/kg	5.0								
cis-1,3-Dichloropropene		N	2760	µg/kg	10								
Toluene		M	2760	µg/kg	1.0								
Trans-1,3-Dichloropropene		N	2760	µg/kg	10								
1,1,2-Trichloroethane		M	2760	µg/kg	10								
Tetrachloroethene		M	2760	µg/kg	1.0								
1,3-Dichloropropane		U	2760	µg/kg	2.0								
Dibromochloromethane		U	2760	µg/kg	10								
1,2-Dibromoethane		M	2760	µg/kg	5.0								
Chlorobenzene		M	2760	µg/kg	1.0								
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0								
Ethylbenzene		M	2760	µg/kg	1.0								
m & p-Xylene		M	2760	µg/kg	1.0								
o-Xylene		M	2760	µg/kg	1.0								
Styrene		M	2760	µg/kg	1.0								
Tribromomethane		U	2760	µg/kg	1.0								
Isopropylbenzene		M	2760	µg/kg	1.0								
Bromobenzene		M	2760	µg/kg	1.0								
1,2,3-Trichloropropane		N	2760	µg/kg	50								
N-Propylbenzene		U	2760	µg/kg	1.0								
2-Chlorotoluene		M	2760	µg/kg	1.0								
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0								
4-Chlorotoluene		U	2760	µg/kg	1.0								
Tert-Butylbenzene		U	2760	µg/kg	1.0								
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0								
Sec-Butylbenzene		U	2760	µg/kg	1.0								
1,3-Dichlorobenzene		M	2760	µg/kg	1.0								
4-Isopropyltoluene		U	2760	µg/kg	1.0								
1,4-Dichlorobenzene		M	2760	µg/kg	1.0								
N-Butylbenzene		U	2760	µg/kg	1.0								
1,2-Dichlorobenzene		M	2760	µg/kg	1.0								
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50								
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0								
Hexachlorobutadiene		N	2760	µg/kg	1.0								
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0								

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-19025
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1819250	1819251	1819252	1819253	1819254	1819255	1819256	1821789
				Sample Location:		BH323	BH317	BH317	BH317	BH317	BH317	BH317	BH317
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	2.2	1.5	0.70	6.50	3.3	4.10	10.50
				Date Sampled:		03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	12-Jun-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0								
N-Nitrosodimethylamine		M	2790	mg/kg	0.50								
Phenol		M	2790	mg/kg	0.50								
2-Chlorophenol		N	2790	mg/kg	0.50								
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50								
1,3-Dichlorobenzene		M	2790	mg/kg	0.50								
1,4-Dichlorobenzene		N	2790	mg/kg	0.50								
1,2-Dichlorobenzene		M	2790	mg/kg	0.50								
2-Methylphenol		M	2790	mg/kg	0.50								
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50								
Hexachloroethane		N	2790	mg/kg	0.50								
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50								
4-Methylphenol		M	2790	mg/kg	0.50								
Nitrobenzene		N	2790	mg/kg	0.50								
Isophorone		M	2790	mg/kg	0.50								
2-Nitrophenol		N	2790	mg/kg	0.50								
2,4-Dimethylphenol		N	2790	mg/kg	0.50								
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50								
2,4-Dichlorophenol		N	2790	mg/kg	0.50								
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50								
Naphthalene		M	2790	mg/kg	0.50								
4-Chloroaniline		N	2790	mg/kg	0.50								
Hexachlorobutadiene		M	2790	mg/kg	0.50								
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50								
2-Methylnaphthalene		M	2790	mg/kg	0.50								
4-Nitrophenol		N	2790	mg/kg	0.50								
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50								
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50								
2-Chloronaphthalene		M	2790	mg/kg	0.50								
2-Nitroaniline		N	2790	mg/kg	0.50								
Acenaphthylene		M	2790	mg/kg	0.50								
Dimethylphthalate		M	2790	mg/kg	0.50								
2,6-Dinitrotoluene		N	2790	mg/kg	0.50								
Acenaphthene		M	2790	mg/kg	0.50								
3-Nitroaniline		N	2790	mg/kg	0.50								
Dibenzofuran		M	2790	mg/kg	0.50								
4-Chlorophenylphenylether		M	2790	mg/kg	0.50								
2,4-Dinitrotoluene		N	2790	mg/kg	0.50								
Fluorene		M	2790	mg/kg	0.50								

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-18337	24-19025
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1819250	1819251	1819252	1819253	1819254	1819255	1819256	1821789
				Sample Location:		BH323	BH317	BH317	BH317	BH317	BH317	BH317	BH317
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	2.2	1.5	0.70	6.50	3.3	4.10	10.50
				Date Sampled:		03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	12-Jun-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Diethyl Phthalate		M	2790	mg/kg	0.50								
4-Nitroaniline		N	2790	mg/kg	0.50								
Azobenzene		M	2790	mg/kg	0.50								
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50								
Hexachlorobenzene		M	2790	mg/kg	0.50								
Phenanthrene		M	2790	mg/kg	0.50								
Anthracene		M	2790	mg/kg	0.50								
Carbazole		M	2790	mg/kg	0.50								
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50								
Fluoranthene		M	2790	mg/kg	0.50								
Pyrene		M	2790	mg/kg	0.50								
Butylbenzyl Phthalate		N	2790	mg/kg	0.50								
Benzo[a]anthracene		M	2790	mg/kg	0.50								
Chrysene		M	2790	mg/kg	0.50								
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50								
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50								
Benzo[b]fluoranthene		M	2790	mg/kg	0.50								
Benzo[k]fluoranthene		M	2790	mg/kg	0.50								
Benzo[a]pyrene		M	2790	mg/kg	0.50								
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50								
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50								
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50								
Naphthalene		M	2800	mg/kg	0.10								< 0.10
Acenaphthylene		N	2800	mg/kg	0.10								< 0.10
Acenaphthene		M	2800	mg/kg	0.10								< 0.10
Fluorene		M	2800	mg/kg	0.10								< 0.10
Phenanthrene		M	2800	mg/kg	0.10								< 0.10
Anthracene		M	2800	mg/kg	0.10								< 0.10
Fluoranthene		M	2800	mg/kg	0.10								< 0.10
Pyrene		M	2800	mg/kg	0.10								< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10								< 0.10
Chrysene		M	2800	mg/kg	0.10								< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10								< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10								< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10								< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10								< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10								< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10								< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0								< 2.0

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-19025	24-19025	24-19025	24-19025	24-19025	24-25899	24-25899
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1821790	1821791	1821792	1821793	1821794	1850277	1850280
				Sample Location:		BH317	BH317	BH324	BH324	BH324	TP309	TP311
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		14.00	17.50	0.20	0.70	3.50	0.4	0.5
				Date Sampled:		12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024		
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		U	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	7.9	16	7.1	10	20	6.1	4.0
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Black	Black
Other Material		N	2040		N/A	Stones	None	Stones	Stones	None	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
Arsenic		M	2455	mg/kg	0.5	7.1	9.1	6.0	16	22	3.4	3.0
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	0.33	0.14	0.28	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	10	11	450	120	18	1300	530
Copper		M	2455	mg/kg	0.50	14	9.3	24	36	42	43	200
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	0.06	0.05	< 0.05	0.09	0.11
Nickel		M	2455	mg/kg	0.50	18	24	16	17	15	38	58
Lead		M	2455	mg/kg	0.50	11	8.8	49	46	40	26	280
Selenium		M	2455	mg/kg	0.25	< 0.25	0.30	1.2	1.6	0.76	< 0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	63	83	140	79	92	260	1200
Chromium (Hexavalent)		N	2490	mg/kg	0.50						0.58	0.64
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[A] < 0.10	[A] < 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	[A] < 0.25	[A] < 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.8	< 2.0	6.7	6.2	6.2	[A] < 2.0	[A] < 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.0	1.1	1.8	2.1	4.1	[A] < 1.0	[A] < 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	4.5	2.1	< 2.0	[A] 3.2	[A] < 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0	280	6.5	4.5	[A] 300	[A] 26
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	10	< 10	< 10	[A] 56	[A] < 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0	290	17	17	[A] 310	[A] 27
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	300	17	17	[A] 360	[A] 27
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	[A] < 0.05	[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	[A] < 0.25	[A] < 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[A] < 1.0	[A] < 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	[A] < 1.0	[A] < 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	2.6	3.1	3.8	< 2.0	2.7	[A] 3.3	[A] 3.6
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0	2.8	< 2.0	7.4	[A] < 2.0	[A] < 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0	4.8	28	2.1	[A] 1.5	[A] < 1.0

Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-19025	24-19025	24-19025	24-19025	24-19025	24-25899	24-25899
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1821790	1821791	1821792	1821793	1821794	1850277	1850280
				Sample Location:		BH317	BH317	BH324	BH324	BH324	TP309	TP311
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		14.00	17.50	0.20	0.70	3.50	0.4	0.5
				Date Sampled:		12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024		
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0	< 5.0	6.6	< 5.0	10	[A] < 5.0	[A] < 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	< 10	< 10	11	28	12	[A] < 10	[A] < 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	[A] < 0.50	[A] < 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10	< 10	300	18	27	[A] 310	[A] 31
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	< 10	< 10	310	46	29	[A] 370	[A] 31
Naphthalene		M	2700	mg/kg	0.10							
Acenaphthylene		M	2700	mg/kg	0.10							
Acenaphthene		M	2700	mg/kg	0.10							
Fluorene		M	2700	mg/kg	0.10							
Phenanthrene		M	2700	mg/kg	0.10							
Anthracene		M	2700	mg/kg	0.10							
Fluoranthene		M	2700	mg/kg	0.10							
Pyrene		M	2700	mg/kg	0.10							
Benzo[a]anthracene		M	2700	mg/kg	0.10							
Chrysene		M	2700	mg/kg	0.10							
Benzo[b]fluoranthene		M	2700	mg/kg	0.10							
Benzo[k]fluoranthene		M	2700	mg/kg	0.10							
Benzo[a]pyrene		M	2700	mg/kg	0.10							
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10							
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10							
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10							
Total Of 16 PAH's		M	2700	mg/kg	2.0							
Dichlorodifluoromethane		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Chloromethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Vinyl Chloride		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Bromomethane		M	2760	µg/kg	20						[A] < 20	[A] < 20
Chloroethane		U	2760	µg/kg	2.0						[A] < 2.0	[A] < 2.0
Trichlorofluoromethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,1-Dichloroethene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Dichloromethane		N	2760	µg/kg	50						[A] < 50	[A] < 50
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,1-Dichloroethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Bromochloromethane		U	2760	µg/kg	5.0						[A] < 5.0	[A] < 5.0
Trichloromethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,1,1-Trichloroethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Tetrachloromethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Benzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-19025	24-19025	24-19025	24-19025	24-19025	24-25899	24-25899
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1821790	1821791	1821792	1821793	1821794	1850277	1850280
				Sample Location:		BH317	BH317	BH324	BH324	BH324	TP309	TP311
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		14.00	17.50	0.20	0.70	3.50	0.4	0.5
				Date Sampled:		12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024		
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
1,2-Dichloroethane		M	2760	µg/kg	2.0						[A] < 2.0	[A] < 2.0
Trichloroethene		N	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2-Dichloropropane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Dibromomethane		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Bromodichloromethane		M	2760	µg/kg	5.0						[A] < 5.0	[A] < 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10						[A] < 10	[A] < 10
Toluene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10						[A] < 10	[A] < 10
1,1,2-Trichloroethane		M	2760	µg/kg	10						[A] < 10	[A] < 10
Tetrachloroethene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0						[A] < 2.0	[A] < 2.0
Dibromochloromethane		U	2760	µg/kg	10						[A] < 10	[A] < 10
1,2-Dibromoethane		M	2760	µg/kg	5.0						[A] < 5.0	[A] < 5.0
Chlorobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0						[A] < 2.0	[A] < 2.0
Ethylbenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Styrene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Tribromomethane		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Isopropylbenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Bromobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50						[A] < 50	[A] < 50
N-Propylbenzene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
2-Chlorotoluene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Sec-Butylbenzene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,3-Dichlorobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,4-Dichlorobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
N-Butylbenzene		U	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2-Dichlorobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50						[A] < 50	[A] < 50
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0						[A] < 2.0	[A] < 2.0

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Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-19025	24-19025	24-19025	24-19025	24-19025	24-25899	24-25899
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1821790	1821791	1821792	1821793	1821794	1850277	1850280
				Sample Location:		BH317	BH317	BH324	BH324	BH324	TP309	TP311
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		14.00	17.50	0.20	0.70	3.50	0.4	0.5
				Date Sampled:		12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024		
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0						[A] < 1.0	[A] < 1.0
N-Nitrosodimethylamine		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Phenol		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Chlorophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Methylphenol		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Hexachloroethane		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Methylphenol		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Nitrobenzene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Isophorone		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Nitrophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Naphthalene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Chloroaniline		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Nitrophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2-Nitroaniline		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Acenaphthylene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Dimethylphthalate		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Acenaphthene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
3-Nitroaniline		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Dibenzofuran		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Fluorene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50

DRAFT

Results - Soil

Project: 315531 EAF Meltshop

Client: RSK Geosciences				**Chemtest Job No.:**		24-19025	24-19025	24-19025	24-19025	24-19025	24-25899	24-25899
Quotation No.: Q24-35208				**Chemtest Sample ID.:**		1821790	1821791	1821792	1821793	1821794	1850277	1850280
				Sample Location:		BH317	BH317	BH324	BH324	BH324	TP309	TP311
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		14.00	17.50	0.20	0.70	3.50	0.4	0.5
				Date Sampled:		12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024	12-Jun-2024		
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Diethyl Phthalate		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Nitroaniline		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Azobenzene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Phenanthrene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Anthracene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Carbazole		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Fluoranthene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Pyrene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Butylbenzyl Phthalate		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Benzo[a]anthracene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Chrysene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Benzo[b]fluoranthene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Benzo[k]fluoranthene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Benzo[a]pyrene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50						[A] < 0.50	[A] < 0.50
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.41	< 0.10	< 0.10	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.42	< 0.10	0.59	0.79	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.63	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.38	< 0.10	0.27	2.4	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.30	< 0.10	0.25	2.5	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.4	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.6	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.1	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.8	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.8	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.2	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.9	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.9	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	37	< 2.0

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Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1819250			BH323	##########	B	Amber Glass 250ml
1819250			BH323	##########	B	Amber Glass 60ml
1819250			BH323	##########	B	Plastic Tub 500g
1850277			TP309		A	Amber Glass 250ml
1850277			TP309		A	Amber Glass 60ml
1850277			TP309		A	Plastic Tub 1000g
1850280			TP311		A	Amber Glass 250ml
1850280			TP311		A	Amber Glass 60ml
1850280			TP311		A	Plastic Tub 1000g

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	

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Report Information

Key	
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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

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

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DRAFT

Report Information

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

Clean Up Codes

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

HWOL Acronym System

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

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

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APPENDIX G
LABORATORY CERTIFICATES FOR GROUNDWATER WATER ANALYSIS

DRAFT

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

Amended Report

Report No.:	24-25102-5		
Initial Date of Issue:	13-Aug-2024	**Date of Re-Issue:**	20-Jan-2025
Re-Issue Details:	This report has been revised and directly supersedes 24-25102-4 in its entirety		
Client	RSK Geosciences		
Client Address:	Battle Gate Road Boxworth Cambridge CB23 4NN		
Contact(s):	James Bloore		
Project	315531 Port Talbot		
Quotation No.:	Q24-35208	**Date Received:**	06-Aug-2024
Order No.:	P02150967	**Date Instructed:**	06-Aug-2024
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	12-Aug-2024
Date Approved:	13-Aug-2024		
Approved By:			



Details: David Smith, Technical Director

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

DRAFT

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

Amended Report

Report No.:	24-25105-4		
Initial Date of Issue:	13-Aug-2024	**Date of Re-Issue:**	20-Jan-2025
Re-Issue Details:	This report has been revised and directly supersedes 24-25105-3 in its entirety		
Client	RSK Geosciences		
Client Address:	Battle Gate Road Boxworth Cambridge CB23 4NN		
Contact(s):	James Bloore		
Project	315531 Port Talbot		
Quotation No.:	Q24-35208	**Date Received:**	06-Aug-2024
Order No.:	P02150967	**Date Instructed:**	06-Aug-2024
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	12-Aug-2024
Date Approved:	13-Aug-2024		
Approved By:			



Details: David Smith, Technical Director

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

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Results - Water

Project: 315531 Port Talbot

Client: RSK Geosciences			**Chemtest Job No.:**			24-25102	24-25105
Quotation No.: Q24-35208			**Chemtest Sample ID.:**			1846697	1846707
				Sample Location:		BH324	BH317
				Sample Type:		WATER	WATER
				Sample Sub Type:			
				Top Depth (m):		1.42	1.37
				Date Sampled:		02-Aug-2024	02-Aug-2024
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
pH at 20C		U	1010		4.0	8.6	7.7
Sulphate		U	1220	mg/l	1.0	84	< 1.0
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	37	6.6
Boron (Dissolved)		U	1455	µg/l	10.0	320	300
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)		U	1455	µg/l	0.50	0.67	< 0.50
Copper (Dissolved)		U	1455	µg/l	0.50	1.2	< 0.50
Mercury (Dissolved)		U	1455	µg/l	0.05	0.09	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	1.2	< 0.50
Lead (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50
Zinc (Dissolved)		U	1455	µg/l	2.5	< 2.5	7.0
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10
Naphthalene		U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthylene		U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthene		U	1800	µg/l	0.10	< 0.10	< 0.10
Fluorene		U	1800	µg/l	0.10	< 0.10	< 0.10
Phenanthrene		U	1800	µg/l	0.10	< 0.10	< 0.10
Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10
Fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10
Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10
Chrysene		U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		U	1800	µg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's		U	1800	µg/l	2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection	
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	PL GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	PL GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

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

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

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Water Sample Category Key for Accreditation

DRAFT

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HWOL Acronym System

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

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APPENDIX H
GAC HUMAN HEALTH

DRAFT

Generic assessment criteria for human health: commercial scenario

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were initially published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Further C4SL were published in 2021 for vinyl chloride, tetrachloroethene (PCE) and trichloroethene (TCE). Where a C4SL has been published, the RSK GAC duplicates the C4SL using all input parameters within the SP1010 final project report[3] and associated chemical specific reports[6], and adopts them as GAC for these substances. Due to the use of decimal places rather than significant figures applied to the Contaminated Land Exposure Assessment (CLEA) tool outputs, the GAC presented may be marginally differently to the C4SL values, however any differences between the values are minimal and would not equate to an unacceptable risk.

For all other substances the only C4SL exposure modification relevant to a commercial end use are daily inhalation rates.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7] or by the USEPA[14], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the CLEA tool v1.071, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. The SAC are also termed GAC.

Pathway selection

In accordance with SR3[5] the commercial scenario considers risks to a female worker who works from the age of 16 to 65 years. It should be noted that this end use is not suitable for a workplace nursery but may be appropriate for a sports centre or shopping centre where children are present. In accordance with Box 3.5, SR3[5] the pathways considered for production of the SAC in the commercial scenario are

- direct soil and dust ingestion

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- dermal contact with soil both indoors and outdoors
- indoor air inhalation from soil and vapour and outdoor inhalation of soil and vapour.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

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Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated chemical specific reports[3,6], the 2015 LQM/CIEH report[7] or the USEPA IRIS database[14]. Where a LLTC[3,6] has been published for a substance, RSK has used these input parameters to derive the RSK GAC. Toxicological and specific chemical parameters for 1,2,4-trimethylbenzene, barium, methyl tertiary-butyl ether (MTBE), 1,1,2-trichlorethane, 1,1-dichloroethene, 1,2-dichloropropane, 2-chloronaphthalene, chloroethane, chloromethane, cis 1,2-dichloroethene, dichloromethane, hexachloroethane and trans 1,2-dichloroethene were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene (>EC5-EC7) and toluene (>EC7-EC8), which are modelled separately.

Physical parameters

For the commercial end use, the CLEA default pre-1970s three-storey office building was used. SR3[5] notes this commercial building type to be the most conservative in terms of protection from vapour intrusion. The default input building parameters presented in Table 3.10 of SR3[5] have been used.

The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for this SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

Summary of modifications to the default CLEA SR3[5] input parameters for a commercial land use

In summary, the RSK commercial GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Table 2 below. The sole modification to the default commercial input parameters is the updated inhalation rate.

The final selected GAC are presented by pathway in Table 3 with the combined GAC in Table 4.

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Figure 1: Conceptual model for CLEA commercial scenario

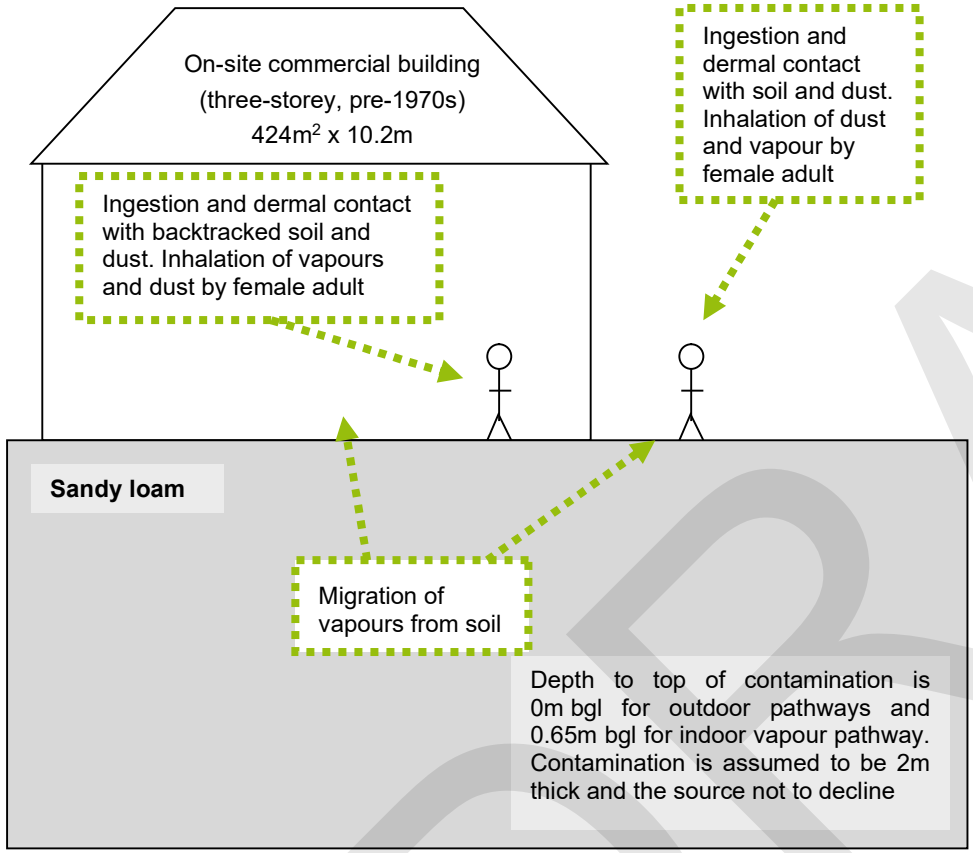


Table 1: Exposure assessment parameters for commercial scenario – inputs for CLEA model

Parameter	Value	Justification
Land use	Commercial	Chosen land use
Receptor	Female worker	Taken as female adult exposed over 49 years from age 16 to 65 years, Box 3.5, SR3[5]
Building	Office (pre-1970)	Key generic assumption given in Box 3.5, SR3[5]. Pre-1970s three-storey office building chosen as it is the most conservative in terms of protection from vapour intrusion (Section 3.4.6, SR3[5])
Soil type	Sandy loam	Most common UK soil type (Section 4.3.1, Table 4.4, SR3[5])
Start age class (AC)	17	AC corresponding to key generic assumption that the critical receptor is a working female adult exposed over a 49-year period from age 16 to 65 years. Assumption given in Box 3.5, SR3[5]
End AC	17	
SOM (%)	6	Representative of sandy loam according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
	1	To provide SAC for sites where SOM < 6% as often observed by RSK
	2.5	
pH	7	Model default

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Table 2: Commercial – modified receptor inputs

Parameter	Unit	Value	Justification
Inhalation rate (AC17)	m^3 day^{-1}	15.7	Mean value USEPA, 2011[12]; Table 3.2, SP1010[3]

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - COMMERCIAL

Table 3

Human health generic assessment criteria by pathway for commercial scenario

Compound	Notes	SAC appropriate to pathway SOM 1% (mg/kg)			Soil saturation limit (mg/kg)	SAC appropriate to pathway SOM 2.5% (mg/kg)			Soil saturation limit (mg/kg)	SAC appropriate to pathway SOM 6% (mg/kg)			Soil saturation limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals													
Arsenic	(a,b)	6.35E+02	1.25E+03	NR	NR	6.35E+02	1.25E+03	NR	NR	6.35E+02	1.25E+03	NR	NR
Barium	(b)	2.21E+04	NR	NR	NR	2.21E+04	NR	NR	NR	2.21E+04	NR	NR	NR
Beryllium		3.97E+03	1.17E+01	NR	NR	3.97E+03	1.17E+01	NR	NR	3.97E+03	1.17E+01	NR	NR
Boron		2.38E+05	2.82E+07	NR	NR	2.38E+05	2.82E+07	NR	NR	2.38E+05	2.82E+07	NR	NR
Cadmium	(a)	7.73E+02	8.57E+02	4.10E+02	NR	7.73E+02	8.57E+02	4.10E+02	NR	7.73E+02	8.57E+02	4.10E+02	NR
Chromium (III) - trivalent	(c)	3.31E+05	8.57E+03	NR	NR	3.31E+05	8.57E+03	NR	NR	3.31E+05	8.57E+03	NR	NR
Chromium (VI) - hexavalent	(a,d)	9.62E+02	4.91E+01	NR	NR	9.62E+02	4.91E+01	NR	NR	9.62E+02	4.91E+01	NR	NR
Copper		1.89E+05	8.96E+04	6.83E+04	NR	1.89E+05	8.96E+04	6.83E+04	NR	1.89E+05	8.96E+04	6.83E+04	NR
Lead	(a)	2.32E+03	NR	NR	NR	2.32E+03	NR	NR	NR	2.32E+03	NR	NR	NR
Elemental Mercury (Hg^0)	(d)	NR	1.54E+01	NR	4.31E+00	NR	3.26E+01	NR	1.07E+01	NR	5.80E+01	NR	2.58E+01
Inorganic Mercury (Hg^{2+})		1.18E+03	1.97E+04	1.12E+03	NR	1.18E+03	1.97E+04	1.12E+03	NR	1.18E+03	1.97E+04	1.12E+03	NR
Methyl Mercury (Hg^{4+})		3.38E+02	2.13E+03	2.92E+02	7.33E+01	3.38E+02	3.87E+03	3.11E+02	1.42E+02	3.38E+02	7.33E+03	3.23E+02	3.04E+02
Nickel	(d)	3.06E+03	9.83E+02	NR	NR	3.06E+03	9.83E+02	NR	NR	3.06E+03	9.83E+02	NR	NR
Selenium	(b)	1.23E+04	NR	NR	NR	1.23E+04	NR	NR	NR	1.23E+04	NR	NR	NR
Vanadium		2.15E+04	9.03E+03	NR	NR	2.15E+04	9.03E+03	NR	NR	2.15E+04	9.03E+03	NR	NR
Zinc	(b)	7.35E+05	1.97E+08	NR	NR	7.35E+05	1.97E+08	NR	NR	7.35E+05	1.97E+08	NR	NR
Cyanide (free)		6.56E+02	7.51E+04	6.53E+02	NR	6.56E+02	7.51E+04	6.53E+02	NR	6.56E+02	7.51E+04	6.53E+02	NR
Volatile Organic Compounds													
Benzene	(a)	1.09E+03	2.79E+01	2.72E+01	1.22E+03	1.09E+03	5.19E+01	4.96E+01	2.26E+03	1.09E+03	1.08E+02	9.80E+01	4.71E+03
Toluene		4.24E+05	6.49E+04	5.63E+04	8.69E+02	4.24E+05	1.43E+05	1.07E+05	1.92E+03	4.24E+05	3.24E+05	1.84E+05	4.36E+03
Ethylbenzene		1.91E+05	5.89E+03	5.71E+03	5.18E+02	1.91E+05	1.38E+04	1.28E+04	1.22E+03	1.91E+05	3.21E+04	2.75E+04	2.84E+03
Xylene - m		3.43E+05	6.26E+03	6.15E+03	6.25E+02	3.43E+05	1.47E+04	1.41E+04	1.47E+03	3.43E+05	3.44E+04	3.12E+04	3.46E+03
Xylene - o		3.43E+05	6.73E+03	6.60E+03	4.78E+02	3.43E+05	1.57E+04	1.50E+04	1.12E+03	3.43E+05	3.65E+04	3.30E+04	2.62E+03
Xylene - p		3.43E+05	6.03E+03	5.92E+03	5.76E+02	3.43E+05	1.41E+04	1.36E+04	1.35E+03	3.43E+05	3.28E+04	3.00E+04	3.17E+03
Total xylene		3.43E+05	6.03E+03	5.92E+03	6.25E+02	3.43E+05	1.41E+04	1.36E+04	1.47E+03	3.43E+05	3.28E+04	3.00E+04	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		5.72E+05	7.58E+03	7.48E+03	2.04E+04	5.72E+05	1.23E+04	1.21E+04	3.31E+04	5.72E+05	2.34E+04	2.24E+04	6.27E+04
1,1,1,2 Tetrachloroethane		1.10E+04	1.09E+02	1.08E+02	2.60E+03	1.10E+04	2.53E+02	2.47E+02	6.02E+03	1.10E+04	5.88E+02	5.59E+02	1.40E+04
1,1,2,2-Tetrachloroethane		1.10E+04	2.81E+02	2.74E+02	2.67E+03	1.10E+04	5.75E+02	5.46E+02	5.46E+03	1.10E+04	1.26E+03	1.13E+03	1.20E+04
1,1,1-Trichloroethane		1.14E+06	6.60E+02	6.60E+02	1.43E+03	1.14E+06	1.35E+03	1.35E+03	2.92E+03	1.14E+06	2.96E+03	2.95E+03	6.39E+03
1,1,2 Trichloroethane		7.62E+03	9.02E+01	8.91E+01	4.03E+03	7.62E+03	1.84E+02	1.80E+02	8.21E+03	7.62E+03	4.02E+02	3.82E+02	1.80E+04
1,1-Dichloroethene		8.76E+04	2.43E+01	2.43E+01	2.23E+03	8.76E+04	4.30E+01	4.30E+01	3.94E+03	8.76E+04	8.68E+01	8.67E+01	7.94E+03
1,2-Dichloroethane		2.29E+02	6.73E-01	6.71E-01	3.41E+03	2.29E+02	9.71E-01	9.67E-01	4.91E+03	2.29E+02	1.67E+00	1.65E+00	8.43E+03
1,2,4-Trimethylbenzene		NR	3.29E+02	NR	4.74E+02	NR	6.41E+02	NR	1.16E+03	NR	1.04E+03	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
1,2-Dichloropropane		2.57E+04	3.14E+00	3.13E+00	1.19E+03	2.57E+04	5.54E+00	5.54E+00	2.11E+03	2.57E+04	1.11E+01	1.11E+01	4.24E+03
Carbon Tetrachloride (tetrachloromethane)		7.62E+03	2.87E+00	2.87E+00	1.52E+03	7.62E+03	6.29E+00	6.28E+00	3.32E+03	7.62E+03	1.43E+01	1.42E+01	7.54E+03
Chloroethane		NR	9.01E+02	NR	2.61E+03	NR	1.22E+03	NR	3.54E+03	NR	1.97E+03	NR	5.71E+03
Chloromethane		NR	9.54E-01	NR	1.91E+03	NR	1.11E+00	NR	2.24E+03	NR	1.49E+00	NR	2.99E+03
Cis 1,2 Dichloroethene		1.36E+01	NR	NR	3.94E+03	2.29E+01	NR	NR	6.61E+03	4.44E+01	NR	NR	1.29E+04
Dichloromethane		9.04E+03	2.63E+02	2.57E+02	7.27E+03	9.04E+03	3.50E+02	3.39E+02	9.68E+03	9.04E+03	5.53E+02	5.26E+02	1.53E+04
Tetrachloroethene (PCE)		2.67E+04	2.45E+01	2.45E+01	4.24E+02	2.67E+04	5.49E+01	5.48E+01	9.51E+02	2.67E+04	1.26E+02	1.25E+02	2.18E+03
Trans 1,2 Dichloroethene		3.23E+04	2.07E+01	NR	3.42E+03	3.23E+04	3.74E+01	NR	6.17E+03	3.23E+04	7.63E+01	NR	1.26E+04
Trichloroethene (TCE)		7.30E-01	2.59E+00	NR	1.54E+03	1.53E+00	5.43E+00	NR	3.22E+03	3.38E+00	1.20E+01	NR	7.14E+03
Vinyl Chloride (chloroethene)		1.19E+02	1.13E+00	1.12E+00	1.36E+03	1.19E+02	1.46E+00	1.45E+00	1.76E+03	1.19E+02	2.24E+00	2.20E+00	2.69E+03
Semi-Volatile Organic Compounds													
2-Chloronaphthalene		1.53E+05	3.71E+02	3.70E+02	1.14E+02	1.53E+05	9.07E+02	9.02E+02	2.80E+02	1.53E+05	2.13E+03	2.10E+03	6.69E+02
Acenaphthene		1.10E+05	2.75E+06	1.06E+05	5.70E+01	1.10E+05	5.36E+06	1.08E+05	1.41E+02	1.10E+05	8.83E+06	1.08E+05	3.36E+02

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - COMMERCIAL

Table 3

Human health generic assessment criteria by pathway for commercial scenario

Compound	Notes	SAC appropriate to pathway SOM 1% (mg/kg)			Soil saturation limit (mg/kg)	SAC appropriate to pathway SOM 2.5% (mg/kg)			Soil saturation limit (mg/kg)	SAC appropriate to pathway SOM 6% (mg/kg)			Soil saturation limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Acenaphthylene		1.10E+05	2.68E+06	1.05E+05	8.61E+01	1.10E+05	5.23E+06	1.07E+05	2.12E+02	1.10E+05	8.65E+06	1.08E+05	5.06E+02
Anthracene		5.49E+05	1.13E+07	5.23E+05	1.17E+00	5.49E+05	2.35E+07	5.36E+05	2.91E+00	5.49E+05	4.13E+07	5.42E+05	6.96E+00
Benzo(a)anthracene		2.84E+02	4.08E+02	1.67E+02	1.71E+00	2.84E+02	4.47E+02	1.74E+02	4.28E+00	2.84E+02	4.67E+02	1.76E+02	1.03E+01
Benzo(a)pyrene	(a)	7.68E+01	2.04E+02	5.58E+01	9.11E-01	7.68E+01	2.09E+02	5.61E+01	2.28E+00	7.68E+01	2.11E+02	5.63E+01	5.46E+00
Benzo(b)fluoranthene		7.13E+01	1.17E+02	4.43E+01	1.22E+00	7.13E+01	1.20E+02	4.47E+01	3.04E+00	7.13E+01	1.21E+02	4.49E+01	7.29E+00
Benzo(g,h,i)perylene		6.29E+03	1.05E+04	3.93E+03	1.54E-02	6.29E+03	1.06E+04	3.95E+03	3.85E-02	6.29E+03	1.07E+04	3.96E+03	9.23E-02
Benzo(k)fluoranthene		1.88E+03	3.11E+03	1.17E+03	6.87E-01	1.88E+03	3.17E+03	1.18E+03	1.72E+00	1.88E+03	3.21E+03	1.19E+03	4.12E+00
Chrysene		5.67E+02	8.89E+02	3.46E+02	4.40E-01	5.67E+02	9.25E+02	3.52E+02	1.10E+00	5.67E+02	9.47E+02	3.55E+02	2.64E+00
Dibenzo(a,h)anthracene		5.67E+00	9.32E+00	3.53E+00	3.93E-03	5.67E+00	9.52E+00	3.55E+00	9.82E-03	5.67E+00	9.64E+00	3.57E+00	2.36E-02
Fluoranthene		2.29E+04	1.89E+06	2.26E+04	1.89E+01	2.29E+04	2.72E+06	2.27E+04	4.73E+01	2.29E+04	3.32E+06	2.27E+04	1.13E+02
Fluorene		7.31E+04	4.55E+05	6.30E+04	3.09E+01	7.31E+04	1.06E+06	6.84E+04	7.65E+01	7.31E+04	2.24E+06	7.08E+04	1.83E+02
Hexachloroethane		2.09E+01	NR	NR	8.17E+00	4.98E+01	NR	NR	2.01E+01	1.11E+02	NR	NR	4.81E+01
Indeno(1,2,3-cd)pyrene		8.10E+02	1.31E+03	5.01E+02	6.13E-02	8.10E+02	1.35E+03	5.06E+02	1.53E-01	8.10E+02	1.37E+03	5.09E+02	3.68E-01
Naphthalene		3.64E+04	1.87E+03	1.78E+03	7.64E+01	3.64E+04	4.39E+03	3.92E+03	1.83E+02	3.64E+04	9.94E+03	7.81E+03	4.32E+02
Phenanthrene		2.28E+04	5.35E+05	2.19E+04	3.60E+01	2.28E+04	1.09E+06	2.24E+04	8.96E+01	2.28E+04	1.86E+06	2.25E+04	2.14E+02
Pyrene		5.49E+04	4.47E+06	5.42E+04	2.20E+00	5.49E+04	6.46E+06	5.44E+04	5.49E+00	5.49E+04	7.91E+06	5.45E+04	1.32E+01
Phenol		1.10E+06	2.65E+04	2.59E+04	2.42E+04	1.10E+06	3.04E+04	2.96E+04	3.81E+04	1.10E+06	3.46E+04	3.35E+04	7.03E+04
Total petroleum hydrocarbons													
Aliphatic hydrocarbons EC5-EC6		4.77E+06	3.19E+03	3.19E+03	3.04E+02	4.77E+06	5.86E+03	5.86E+03	5.58E+02	4.77E+06	1.21E+04	1.21E+04	1.15E+03
Aliphatic hydrocarbons >EC6-EC8		4.77E+06	7.79E+03	7.78E+03	1.44E+02	4.77E+06	1.74E+04	1.74E+04	3.22E+02	4.77E+06	3.97E+04	3.96E+04	7.36E+02
Aliphatic hydrocarbons >EC8-EC10		9.53E+04	2.02E+03	2.00E+03	7.77E+01	9.53E+04	4.91E+03	4.85E+03	1.90E+02	9.53E+04	1.17E+04	1.13E+04	4.51E+02
Aliphatic hydrocarbons >EC10-EC12		9.53E+04	9.97E+03	9.69E+03	4.75E+01	9.53E+04	2.47E+04	2.29E+04	1.18E+02	9.53E+04	5.89E+04	4.73E+04	2.83E+02
Aliphatic hydrocarbons >EC12-EC16		9.53E+04	8.26E+04	5.88E+04	2.37E+01	9.53E+04	2.04E+05	8.17E+04	5.91E+01	9.53E+04	4.81E+05	9.02E+04	1.42E+02
Aliphatic hydrocarbons >EC16-EC35	(b)	1.58E+06	NR	NR	8.48E+00	1.75E+06	NR	NR	2.12E+01	1.83E+06	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC35-EC44	(b)	1.58E+06	NR	NR	8.48E+00	1.75E+06	NR	NR	2.12E+01	1.83E+06	NR	NR	5.09E+01
Aromatic hydrocarbons >EC8-EC10		3.81E+04	3.55E+03	3.46E+03	6.13E+02	3.81E+04	8.66E+03	8.11E+03	1.50E+03	3.81E+04	2.05E+04	1.70E+04	3.58E+03
Aromatic hydrocarbons >EC10-EC12		3.81E+04	1.92E+04	1.62E+04	3.64E+02	3.81E+04	4.69E+04	2.79E+04	8.99E+02	3.81E+04	1.10E+05	3.42E+04	2.15E+03
Aromatic hydrocarbons >EC12-EC16		3.81E+04	2.02E+05	3.62E+04	1.69E+02	3.81E+04	4.76E+05	3.73E+04	4.19E+02	3.81E+04	1.03E+06	3.78E+04	1.00E+03
Aromatic hydrocarbons >EC16-EC21	(b)	2.82E+04	NR	NR	5.37E+01	2.83E+04	NR	NR	1.34E+02	2.84E+04	NR	NR	3.21E+02
Aromatic hydrocarbons >EC21-EC35	(b)	2.84E+04	NR	NR	4.83E+00	2.84E+04	NR	NR	1.21E+01	2.84E+04	NR	NR	2.90E+01
Aromatic hydrocarbons >EC35-EC44	(b)	2.84E+04	NR	NR	4.83E+00	2.84E+04	NR	NR	1.21E+01	2.84E+04	NR	NR	2.90E+01

Notes:

EC - equivalent carbon. GrAC - groundwater screening value. SAC - soil screening value.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

Calculated SAC exceeds soil saturation limit and may significantly affect the interpretation of any exceedances as the contribution of the indoor and outdoor vapour pathway to total exposure is >10%.

Calculated SAC exceeds soil saturation limit but the exceedance will not affect the SAC significantly as the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.

Calculated SAC does not exceed the soil saturation limit.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3)

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for barium and selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used.

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - COMMERCIAL

Table 4
Human Health Generic Assessment Criteria for Commercial Scenario

Compound	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals			
Arsenic	640	640	640
Barium	22,000	22,000	22,000
Beryllium	12	12	12
Boron	240,000	240,000	240,000
Cadmium	410	410	410
Chromium (III) - trivalent	8,600	8,600	8,600
Chromium (VI) - hexavalent	49	49	49
Copper	68,000	68,000	68,000
Lead	2,300	2,300	2,300
Elemental Mercury (Hg^0)	15 (4)	33 (11)	58 (26)
Inorganic Mercury (Hg^{2+})	1,120	1,120	1,120
Methyl Mercury (Hg^{4+})	290 (73)	310 (142)	320
Nickel	980	980	980
Selenium	12,000	12,000	12,000
Vanadium	9,000	9,000	9,000
Zinc	740,000	740,000	740,000
Cyanide (free)	650	650	650
Volatile Organic Compounds			
Benzene	27	50	98
Toluene	56,000 (869)	107,000 (1,916)	184,000 (4,357)
Ethylbenzene	6,000 (518)	13,000 (1,216)	27,000 (2,844)
Xylene - m	6,200 (625)	14,100 (1,474)	31,200 (3,457)
Xylene - o	6,600 (478)	15,000 (1,120)	33,000 (2,618)
Xylene - p	5,900 (576)	13,600 (1,353)	30,000 (3,167)
Total xylene	5,900 (625)	13,600 (1,474)	30,000 (3,457)
Methyl tertiary-Butyl ether (MTBE)	7,500	12,100	22,400
1,1,1,2 Tetrachloroethane	110	250	560
1,1,2,2-Tetrachloroethane	270	550	1,130
1,1,1-Trichloroethane	700	1,300	3,000
1,1,2 Trichloroethane	89	180	382
1,1-Dichloroethene	24	43	87
1,2-Dichloroethane	0.67	0.97	1.65
1,2,4-Trimethylbenzene	330	640	1,040
1,3,5-Trimethylbenzene	NR	NR	NR
1,2-Dichloropropane	3	6	11
Carbon Tetrachloride (tetrachloromethane)	2.9	6.3	14.2
Chloroethane	901	1,223	1,972
Chloromethane	1.0	1.1	1.5
Cis 1,2 Dichloroethene	14	23	44
Dichloromethane	257	339	526
Tetrachloroethene (PCE)	24	55	125
Trichloroethene (TCE)	0.7	1.5	3.4
Trans 1,2 Dichloroethene	21	37	76
Vinyl Chloride (chloroethene)	1.1	1.4	2.2
Semi-Volatile Organic Compounds			
2-Chloronaphthalene	370 (114)	902 (280)	2,098 (669)
Acenaphthene	110,000	110,000	110,000
Acenaphthylene	110,000	110,000	110,000
Anthracene	520,000	540,000	540,000
Benzo(a)anthracene	170	170	180
Benzo(a)pyrene	77	77	77
Benzo(b)fluoranthene	44	45	45
Benzo(g,h,i)perylene	3,900	3,900	4,000
Benzo(k)fluoranthene	1,200	1,200	1,200
Chrysene	350	350	350
Dibenzo(a,h)anthracene	3.5	3.6	3.6
Fluoranthene	23,000	23,000	23,000
Fluorene	63,000 (31)	68,000	71,000
Hexachloroethane	21 (8)	50 (20)	111 (48)
Indeno(1,2,3-cd)pyrene	500	510	510
Naphthalene	1,800 (76)	3,900 (183)	7,800 (432)
Phenanthrene	22,000	22,000	23,000
Pyrene	54,000	54,000	54,000
Phenol	440*	690*	1,300*
Total Petroleum Hydrocarbons			
Aliphatic hydrocarbons EC_5-EC_6	3,200 (304)	5,900 (558)	12,100 (1,150)
Aliphatic hydrocarbons >EC_6-EC_8	7,800 (144)	17,400 (322)	39,600 (736)
Aliphatic hydrocarbons >EC_8-EC_{10}	2,000 (78)	4,800 (190)	11,300 (451)
Aliphatic hydrocarbons >EC_{10}-EC_{12}	9,700 (48)	22,900 (118)	47,300 (283)
Aliphatic hydrocarbons >EC_{12}-EC_{16}	59,000 (24)	82,000 (59)	90,000 (142)
Aliphatic hydrocarbons >EC_{16}-EC_{35}	1,000,000**	1,000,000**	1,000,000**
Aliphatic hydrocarbons >EC_{35}-EC_{44}	1,000,000**	1,000,000**	1,000,000**
Aromatic hydrocarbons >EC_8-EC_{10}	3,500 (613)	8,100 (1,503)	17,000 (3,580)
Aromatic hydrocarbons >EC_{10}-EC_{12}	16,000 (364)	28,000 (899)	34,000 (2,150)
Aromatic hydrocarbons >EC_{12}-EC_{16}	36,000 (169)	37,000	38,000
Aromatic hydrocarbons >EC_{16}-EC_{21}	28,000	28,000	28,000
Aromatic hydrocarbons >EC_{21}-EC_{35}	28,000	28,000	28,000
Aromatic hydrocarbons >EC_{35}-EC_{44}	28,000	28,000	28,000
Minerals			
Asbestos	Stage 1 test – No asbestos detected with ID; Stage 2 test - <0.001% dry weight (exceedance of either equates to an exceedance of the GAC)[1]		

Notes:
'-' Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.
NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used
EC - equivalent carbon. GrAC - groundwater assessment criteria. SAC - soil assessment criteria.
* The GAC for Phenol is based on a threshold which is protective of direct contact (SC050021/Phenol SGV report)
** Denoted SAC calculated exceeds 100% contaminant, hence 100% (1,000,000mg/kg) has been taken as SAC

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.
1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.

(VALUE IN BRACKETS)
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.

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APPENDIX I
GAC GROUNDWATER

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Generic groundwater assessment criteria (GrAC) for human health: commercial scenario (adult receptor)

Background

Volatile compounds in groundwater have the potential to pose risks to residential site end users via indoor and outdoor inhalation exposure. Due to significant dilution effects in outdoor air, risk from inhalation of volatile contaminants risk is generally dominated by indoor exposure. The GrAC conceptual site model (CSM) is shown in Figure 1 (not to scale).

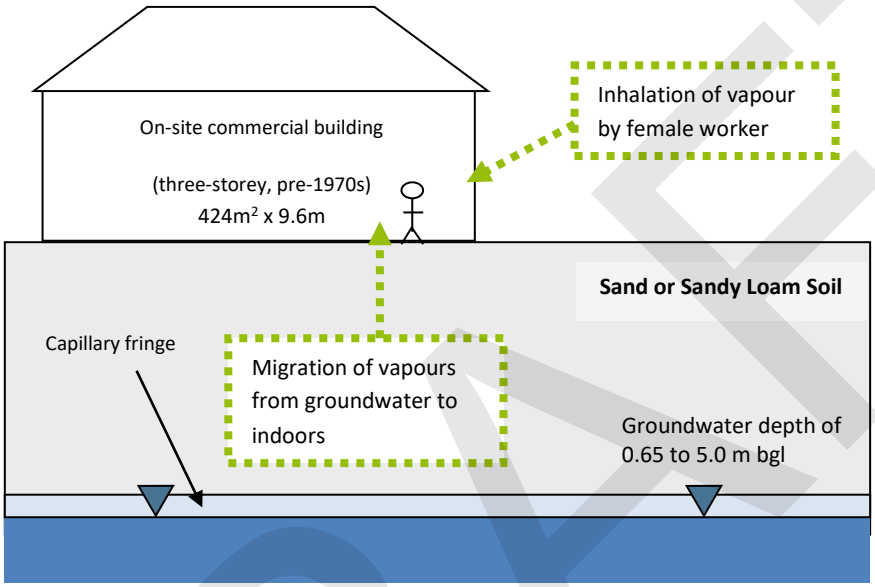


Figure 1: GrAC conceptual model for a generic commercial scenario

RSK GrAC derivation

Model selection

RSK GrAC have been calculated using the RBCA Toolkit for Chemical Releases (version 2.6) with the Johnson and Ettinger model, based on the CSM in Figure 1 for a pre-1970 three storey office building (as defined in SR3[3], Table 4.21). The Johnson & Ettinger model is adopted in the Environment Agency Contaminated Land Exposure Assessment tool for assessing risk to human health from inhalation of volatile contaminants in indoor air. However, the RBCA toolkit implementation of Johnson & Ettinger model allows consideration of a capillary fringe and is designed to directly model vapour intrusion to buildings from VOC in groundwater.

Conceptual model

The pollutant linkage considered in production of the GrAC is the volatilisation of compounds from groundwater and subsequent vapour migration into buildings followed by indoor inhalation by the identified receptor. Although the outdoor air inhalation pathway is also valid, this contributes little to the overall risks owing to dilution in outdoor air.

In accordance with SR3[3], the commercial scenario considers risk to an adult female worker who works from the age of 16 to 65 years. In line with updated exposure assumptions set out in C4SL

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Project Methodology, it is assumed the receptors comprises an adult weighing 70kg and inhaling 15.7 m^3/day.

The CLEA default pre-1970s three-storey office building was used in accordance with the standard commercial scenario described in the Environment Agency SR3 report. The building parameters used in the production of the RSK GACs are the default CLEA inputs presented in Table 3.3 of SR3[3]. Default indoor air exchange rates and soil gas ingress rates have also been adopted.

The RSK GrAC have been calculated for both Sand and Sandy Loam soils using parameters presented in Table 3.1 of SR3[3]. The RSK GrAC have been derived for groundwater depths of 0.65 m, 1.5 m, 2.5 m and 5.0 m below ground level, incorporating a capillary fringe.

In line with recommendations provided in Environment Agency SR3[3] a sub-surface to indoor attenuation factor of 10 has been applied to RBCA derived target levels for all volatile petroleum hydrocarbon fractions.

It is also assumed that contamination is present in the dissolved phase only. RBCA highlights when the assessment criterion exceeds the solubility limit of the pure compound. The full physical input parameters utilised in RBCA are presented in **Annex A**.

Input selection – chemical and toxicological parameters

Key parameters used in the RBCA model are listed and justified in Table 1 of Annex A. The most up-to-date published chemical data was obtained from Environment Agency Report SC050021/SR7[2] where available. Toxicological and chemical data was also obtained from third party published sources including the following:

- Environment Agency TOX reports;
- LQM/CIEH S4UL:s for Human Health Risk Assessment by Land Quality Press (2015);
- CL:AIRE/EIC/AGS Soil Generic Assessment Criteria (2010); and
- CL:AIRE & DeFRA Category 4 Screening Levels (2014) & (2020).

For volatile compounds with published C4SLs (benzene, TCE, tetrachloroethene, and vinyl chloride) the published Low Level of Toxicological Concern (LLTC) has been adopted. For all other constituents the toxicological input parameters are associated with minimal risk derived in accordance with Environment Agency Report SC050021/SR2 guidance.

For petroleum hydrocarbon fractions, aromatic hydrocarbons C5–C8 have been represented by benzene (>EC5-EC7) and toluene (>EC7-EC8), which are modelled separately. For the Commercial GrAC, the Health Criteria Values (HCV) used in the modelling were derived using the toxicological data discussed above, and adopting the following adjustments:

- An adult weighing 70kg and breathing 15.7m^3 air per day in accordance with the revised exposure parameters used in the SP1010 final project report for the Category 4 Screening Levels (C4SL) (Table 3.2[8]) and USEPA data[9]; and
- For threshold compounds background inhalation (mean daily intake(MDI)) for an adult (Age Class 17) have been utilised in accordance with Environment Agency toxicological guidance.

The inhalation HCVs have been adjusted to account for the reduction in inhalation rate from 20m/day to 15.7m/day the inhalation health criterion values (HCV). The tolerable indoor air

concentrations based on derived HCV used in the derivation of the RSK GrAC are presented in **Annex A**.

Note on aqueous solubility and the RSK GrAC

Where the modelled assessment criteria, or the modelled assessment criteria with the correction factor applied to those contaminants specified below, exceed the aqueous solubility limit the assessment criteria defaults to this concentration and consequently the GrAC is set at the respective limit of solubility.

Where the GrAC exceeds the solubility limit the criteria area shaded red. In these circumstances there may not be a risk to human health in the dissolved phase. Consideration may need to be given to the potential for NAPL to be present at lower concentrations in mixtures in accordance with Raoults Law.

RSK GrAC derivation outputs

The RSK GrACs are presented in Table 1.

Within the RSK GrAC the following should be noted:

- GrAC do not take account of outdoor inhalation exposure to VOC, which is considered to contribute minimally to overall inhalation exposure
- GrAC do not take account of other exposure routes potentially relevant to VOC in shallow groundwater such as direct contact or root uptake
- No biodegradation is assumed to occur in the unsaturated zone. Where aerobic conditions on site are known to exist the GrAC for hydrocarbons may therefore be conservative
- GrAC do not take account of preferential flow into buildings such as through unsealed service entries. In such circumstances GrAC may not be appropriate for use
- GrAC are based on a soil vapour intrusion CSM and are not appropriate for use when the foundation is in direct contact with contaminated groundwater
- GrAC assume that the capillary fringe is un-contaminated with VOC, which is unlikely, particularly where groundwater levels are variable
- GrAC set at the theoretical aqueous solubility limit are not considered to pose a risk to human health
- GrAC do not take into account the interaction between contaminants and the influence this may have on the theoretical aqueous solubility
- GrACs are only applicable to dissolved phase contaminants where the modelled assessment criteria is below the aqueous solubility limits

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Table 1: RSK GrAC (µg/l)									
Land Use	**COMMERCIAL**								
Soil Type	**SAND**					**SANDY LOAM**			
GW Depth (m)	**0.65**	**1.5**	**2.5**	**5**		**0.65**	**1.5**	**2.5**	**5**
Metals									
Elemental mercury	56	56	56	56		56	56	56	56
Methyl mercury	100000	100000	100000	100000		100000	100000	100000	100000
Volatile Organic Compounds									
Benzene (C4SL)	30740	40200	51330	79160		158660	193720	234960	338070
Toluene	590000	590000	590000	590000		590000	590000	590000	590000
Ethylbenzene	180000	180000	180000	180000		180000	180000	180000	180000
Xylene - m	200000	200000	200000	200000		200000	200000	200000	200000
Xylene - o	173000	173000	173000	173000		173000	173000	173000	173000
Xylene - p	200000	200000	200000	200000		200000	200000	200000	200000
Total xylene	173000	173000	173000	173000		173000	173000	173000	173000
Methyl tertiary-Butyl ether (MTBE)	12068580	16013210	20653950	32255810		48000000	48000000	48000000	48000000
Trichloroethene (TCE) (C4SL)	1730	2290	2950	4590		9290	11360	13790	19880
Tetrachloroethene (PCE) (C4SL)	9790	13070	16940	26600		54230	66430	80780	116660
1,1,1-Trichloroethane	456280	604180	778170	1213140		1300000	1300000	1300000	1300000
1,1,1,2 Tetrachloroethane	35130	47100	61190	96410		180890	225050	277000	406880
1,1,2,2-Tetrachloroethane	231900	313430	409350	649150		844250	1131800	1470100	2315840
Carbon Tetrachloride	1200	1590	2050	3210		6600	8050	9760	14030
1,2-Dichloroethane	1290	1690	2160	3350		5860	7330	9060	13390
Vinyl Chloride (chloroethene) (C4SL)	1720	2200	2760	4150		8670	10440	12510	17690
1,2,4-Trimethylbenzene	55900	55900	55900	55900		55900	55900	55900	55900

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Table 1: RSK GrAC (µg/l)									
Land Use	**COMMERCIAL**								
Soil Type	**SAND**					**SANDY LOAM**			
GW Depth (m)	**0.65**	**1.5**	**2.5**	**5**		**0.65**	**1.5**	**2.5**	**5**
Semi-Volatile Organic Compounds									
Acenaphthene	4100	4100	4100	4100		4100	4100	4100	4100
Acenaptht hylene	7950	7950	7950	7950		7950	7950	7950	7950
Naphthalene	19000	19000	19000	19000		19000	19000	19000	19000
Petroleum Hydrocarbons									
Aliphatic hydrocarbons EC5-EC6	35900	35900	35900	35900		35900	35900	35900	35900
Aliphatic hydrocarbons >EC6-EC8	5370	5370	5370	5370		5370	5370	5370	5370
Aliphatic hydrocarbons >EC8-EC10	427	427	427	427		427	427	427	427
Aliphatic hydrocarbons >EC10-EC12	33.9	33.9	33.9	33.9		33.9	33.9	33.9	33.9
Aliphatic hydrocarbons >EC12-EC16	0.759	0.759	0.759	0.759		0.759	0.759	0.759	0.759
Aromatic hydrocarbons >EC8-EC10	64600	64600	64600	64600		64600	64600	64600	64600
Aromatic hydrocarbons >EC10-EC12	24500	24500	24500	24500		24500	24500	24500	24500
Aromatic hydrocarbons >EC12-EC16	5750	5750	5750	5750		5750	5750	5750	5750

Notes:
Values less than 100 have not been rounded up or down; values greater than 100 have been rounded to the nearest 10.
Red highlighted values exceed solubility limit for the pure compound in water (aqueous solubility); GrAC defaults to the limit of solubility.
No vadose zone biodegradation considered
Sub-surface to indoor air correction factor of 10 applied to all petroleum (non-chlorinated) hydrocarbons
All GrAC are for 1% SOM (0.0058 FOC)

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References

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Annex A – Model Input Parameters

Table 1: Commercial scenario – RBCA input parameters

Parameter	Unit	Value	Justification
Receptor – female child			
Averaging time	Years	49	From Box 3.5, SR3[3]
Receptor weight	kg	70	Female adult, Table 4.6, SR3[3]
Exposure duration	Years	49	From Box 3.5, SR3[3]
Exposure frequency	Days yr^{-1}	86.25	Weighted using occupancy period of 9 hours per day for 230 days of the year ((9hours x 230 days)/24 hours)
Soil type – sand			
Total porosity	-	0.54	CLEA value for sand. Parameters for sand from Table 4.4, SR3[3] Volumetric water content in the vadose zone is a highly sensitive parameter within the model and potentially highly variable in the field.
Volumetric water content – unsaturated (vadose) zone	-	0.24	
Volumetric air content - unsaturated (vadose) zone	-	0.30	
Dry bulk density	g cm^{-3} or kg L^{-1}	1.18	
Volumetric water content – capillary zone	-	0.35	Calculated using SR3 Equation 4.1. Value taken as the average moisture content calculated for suction heads (cm H_2O); 0 (i.e. saturated), 10, 20, 30, 40, 50 (i.e. unsaturated soil at field capacity). This is a highly sensitive parameter within the model.
Volumetric air content - capillary zone	-	0.19	Calculated from total porosity and volumetric water content of capillary zone. This is a highly sensitive parameter within the model.
Vertical hydraulic conductivity	cm d^{-1}	636	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[3] equivalent to 7.36 E-03 cm s^{-1}
Vapour permeability	m^2	7.54 E-12	Calculated for sand using equations in Appendix 1, SR3[3]
Capillary zone thickness	m	0.25	Taken from C W Fetter, Applied Hydrogeology 4th Ed, 1994[11] and R Heath, Basic groundwater hydrology 1992[12] for a medium sand
Fraction organic carbon	%	0.0058	Equivalent to SOM = 1%. Note that GrAC are independent on FOC/SOM content since partitioning is assumed to be between aqueous and vapour phases only
Soil type – sandy loam			
Total porosity	-	0.53	CLEA value for sandy loam. Parameters for sandy loam from Table 4.4, SR3[3]. Volumetric water content in the vadose zone is a highly sensitive parameter within the model and potentially highly variable in the field.
Volumetric water content – unsaturated (vadose) zone	-	0.33	
Volumetric air content - unsaturated (vadose) zone	-	0.20	
Dry bulk density	g cm^{-3} or kg/L	1.21	
Volumetric water content – capillary zone	-	0.42	Calculated using SR3 Equation 4.1[3]. Value taken as the average moisture content calculated for suction heads (cm H_2O); 0 (i.e. saturated), 10, 20, 30, 40, 50 (i.e. unsaturated soil at field capacity). This is a highly sensitive parameter within the model.
Volumetric air content - capillary zone	-	0.11	Calculated from total porosity and volumetric water content of capillary zone. This is a highly sensitive parameter within

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Parameter	Unit	Value	Justification
			the model.
Vertical hydraulic conductivity	cm d^{-1}	308	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[3] equivalent to 3.56E-3 cm s^{-1}
Vapour permeability	m^2	3.05 E-12	Calculated for sandy loam using equations in Appendix 1, SR3[3]
Capillary zone thickness	m	0.4	Taken from R Heath, Basic Groundwater Hydrology 1992[12] for a fine sand. Note: C W Fetter, Applied Hydrogeology 4th Ed, 1994[11] value for fine sand is 0.5 m
Fraction organic carbon	%	0.0058	Equivalent to SOM = 1%. Note that GrAC are independent on FOC/SOM content since partitioning is assumed to be between aqueous and vapour phases only
Building – pre-1970 three storey office			
Building volume/area ratio	m	9.6	Table 3.10, SR3[3]
Foundation area	m^2	424	
Foundation perimeter	m	82.40	Based on square root of building area being 20.59m
Building air exchange rate	d^{-1}	24	Table 3.10, SR3[3] Building air exchange rate equivalent to 2.8 E-04 s^{-1}
Depth to bottom of foundation slab	m	0.15	
Foundation thickness	m	0.15	
Foundation crack fraction	-	3.89E-04	Calculated from floor crack area of 0.165m^2 and building footprint of 424m^2 in Table 4.21, SR3[3]
Volumetric water content of cracks	-	0.24 / 0.33	For sand / sandy loam, assumed equal to underlying soil type in assumption that cracks become filled with unsaturated zone soil over time. Parameters for sand and sandy loam from Table 4.4, SR3[3]
Volumetric air content of cracks	-	0.30 / 0.20	
Indoor/outdoor differential pressure	Pa	4.4	From Table 3.3, SR3[3] Equivalent to 44g/cm/s^2
Convective air flow through cracks (Q_{soil}) - Sand	m^3 s^{-1}	1.95 E-04	Soil-specific calculated parameter in RBCA equivalent (and cross checked) with equations A1, A2, A3, A8, A9 in SR3[3]. Equivalent to **195 cm^3 s^{-1}**
Convective air flow through cracks (Q_{soil}) – Sandy Loam	m^3 s^{-1}	7.7 E-05	Soil-specific calculated parameter in RBCA equivalent (and cross checked) with equations A1, A2, A3, A8, A9 in SR3[3]. Equivalent to **77 cm^3 s^{-1}**

Table 2: Tolerable Indoor Air Concentrations

Tolerable Indoor Air Concentration (mg/m^3)[1]	
VOC / SVOC	**Adult (Commercial)**
MTBE	3.2064
Benzene [C4SL]	0.0062
Toluene	6.2362
Ethylbenzene	0.3301
Xylenes	0.2609
Trimethylbenzenes*	0.0085
TPH_Aliphatic >EC5-EC6	11.1465
TPH_Aliphatic >EC6-EC8	11.1465
TPH_Aliphatic >EC8-EC10	0.6465
TPH_Aliphatic >EC10-EC12	0.6465
TPH_Aliphatic >EC12-EC16	0.6465
TPH_Aromatic >EC8-EC9 (styrene)	0.5350

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Tolerable Indoor Air Concentration (mg/m^3)[1]	
VOC / SVOC	**Adult (Commercial)**
TPH_Aromatic >EC8-EC10	0.1338
TPH_Aromatic >EC10-EC12	0.1338
TPH_Aromatic >EC12-EC16	0.1338
Acenaphthene	0.2675
Acenaphthylene	0.2675
Naphthalene	0.0037
Vinyl chloride C4SL	0.0255
Dichloroethane-1,2	0.0005
Tetrachloroethene C4SL	0.0478
Carbon tetrachloride	0.0114
Trichloroethane-1,1,1	2.6752
Trichloroethene C4SL	0.0054
Tetrachloroethane 1,1,2,2 & 1,1,1,2	0.0257
1,1,2-Trichloroethane	0.0216
1,1-dichloroethane	0.8915
1,1-dichloroethene	0.2541
Chloroethane	12.7374
Chloromethane	0.0115
cis-1,2-dichloroethene	0.0264
Dichloromethane	0.5765
trans-1,2-dichloroethene	0.0754
Trichloromethane (chloroform)	0.1752
Mercury Elemental	0.00027
Mercury Methyl	0.0008

[1] Inhalation HCV has taken account of background inhalation for threshold compounds only

C4SL denotes value based on published Lower Limit of Toxicological Concern

* For trimethylbenzenes, the HCV incorporates a Mean Daily Intake of 0.309 ug m^{-3} based on urban air quality data obtained by RSK for Eltham, Southeast London rather than higher values (2.46-5.66 ug m^{-3}) reported by CL:AIRE from a Dutch study.
TPH aromatic >C5-C7 and TPH aromatic >C7-C8 are represented by benzene and toluene respectively.

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APPENDIX J
GQRA DATA SCREENING TABLES – SOILS INCLUDING PROJECT CRONUS

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Project / Site name: 315768 P-Fields

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Commerial GAC RSK 1.0% SOM	No. > GAC								
Lab Sample Number						1819250	1819251	1819252	1819253	1819254	1819255	1819256	1850277	1850280
Sample Reference						BH323	BH317	BH317	BH317	BH317	BH317	BH317	TP309	TP311
Sample Number														
Depth (m)						0.3	2.2	1.5	0.70	6.50	3.3	4.10	0.4	0.5
Date Sampled						03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024		
Time Taken														
Stone Content	%	0.1	NONE											
Moisture Content	%	0.01	NONE			2.4	16	8.6	7.5	18	27	20	6.1	4.0
Total mass of sample received	kg	0.001	NONE											
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025		No Asbestos Detected			No Asbestos Detected					No Asbestos Detected	
Asbestos in Soil	Type	N/A	ISO 17025											
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025											
Asbestos Quantification Total	%	0.001	ISO 17025											
General Inorganics														
pH - Automated	pH Units	N/A	MCERTS	na										
Total Cyanide	mg/kg	1	MCERTS	na	0									
Complex Cyanide	mg/kg	1	MCERTS	na	0									
Free Cyanide	mg/kg	1	MCERTS	na	0									
Thiocyanate as SCN	mg/kg	5	NONE	na	0									
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	na	0									
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	na	0									
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	na	0									
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	na	0									
Elemental Sulphur	mg/kg	5	MCERTS	na	0									
Ammonium - Exchangeable as NH4	mg/kg	0.5	MCERTS	na	0									
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	na	0									
Total Organic Carbon (TOC)	%	0.1	MCERTS	na	0									
Loss on Ignition @ 450oC	%	0.2	MCERTS	na										
Phenols by HPLC														
Catechol	mg/kg	0.1	ISO 17025	na	0									
Resorcinol	mg/kg	0.1	ISO 17025	na	0									
Cresols (o-, m-, p-)	mg/kg	0.3	ISO 17025	na	0									
Total Naphthols (sum of 1- and 2- Naphthol)	mg/kg	0.2	ISO 17025	na	0									
2-Isopropylphenol	mg/kg	0.1	ISO 17025	na	0									
Phenol	mg/kg	0.1	ISO 17025	440	0									
Trimethylphenol (2,3,5-)	mg/kg	0.1	ISO 17025	na	0									
Total Xylenols and Ethylphenols	mg/kg	0.3	ISO 17025	na	0									
Total Phenols														
Total Phenols (HPLC)	mg/kg	1.3	ISO 17025	na	0									
Speciated PAHs														
Naphthalene	mg/kg	0.05	MCERTS	1800	0	0.1	0.1	0.1	0.59	0.1	2.3	0.1	0.10	0.10
Acenaphthylene	mg/kg	0.05	MCERTS	110000	0	0.1	0.1	0.1	0.18	0.1	0.41	0.1	0.10	0.10
Acenaphthene	mg/kg	0.05	MCERTS	110000	0	0.1	0.1	0.1	0.21	0.1	0.81	0.1	0.10	0.10
Fluorene	mg/kg	0.05	MCERTS	63000	0	0.1	0.1	0.1	0.23	0.1	1.0	0.1	0.13	0.10
Phenanthrene	mg/kg	0.05	MCERTS	22000	0	0.1	0.33	0.1	0.81	0.1	2.6	0.1	0.79	0.10
Anthracene	mg/kg	0.05	MCERTS	520000	0	0.1	0.1	0.1	0.15	0.1	0.15	0.1	0.63	0.10
Fluoranthene	mg/kg	0.05	MCERTS	23000	0	0.1	0.46	0.1	0.74	0.1	0.70	0.1	2.4	0.10
Pyrene	mg/kg	0.05	MCERTS	54000	0	0.1	0.46	0.1	1.2	0.1	0.69	0.1	2.5	0.10

Project / Site name: 315768 P-Fields

Lab Sample Number						1819250	1819251	1819252	1819253	1819254	1819255	1819256	1850277	1850280
Sample Reference						BH323	BH317	BH317	BH317	BH317	BH317	BH317	TP309	TP311
Sample Number														
Depth (m)						0.3	2.2	1.5	0.70	6.50	3.3	4.10	0.4	0.5
Date Sampled						03-May-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024	07-Jun-2024		
Time Taken														
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	**Commerial GAC RSK 1.0% SOM**	**No. > GAC**									
Benzo(a)anthracene	mg/kg	0.05	MCERTS	170	0	0.1	0.45	0.1	1.6	0.1	0.20	0.1	3.4	0.10
Chrysene	mg/kg	0.05	MCERTS	350	0	0.1	0.75	0.1	3.2	0.1	0.71	0.1	3.6	0.10
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	44	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	4.1	0.10
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1200	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.8	0.10
Benzo(a)pyrene	mg/kg	0.05	MCERTS	77	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.8	0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	500	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	4.2	0.10
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	3.5	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.9	0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3900	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.9	0.10
Total PAH														
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	na	0									
Heavy Metals / Metalloids														
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	640	0	2.6	9.0	14	5.7	18	11	21	3.4	3.0
Boron (water soluble)	mg/kg	0.2	MCERTS	na	0									
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	410	0	0.64	0.1	0.56	0.40	0.1	0.1	0.22	0.1	0.1
Chromium (hexavalent)	mg/kg	1.2	MCERTS	49	0								0.58	0.64
Chromium (III)	mg/kg	1	NONE	na	0									
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8600	0	200	29	1100	1400	36	43	18	1300	530
Cobalt (aqua regia extractable)	mg/kg	0.15	MCERTS	na	0									
Copper (aqua regia extractable)	mg/kg	1	MCERTS	68000	0	14	3.4	52	42	11	40	27	43	200
Germanium (aqua regia extractable)	mg/kg	5	NONE	na	0									
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2300	0	25	11	60	64	22	24	27	26	280
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1120	0	0.05	0.05	0.10	0.07	0.05	0.09	0.05	0.09	0.11
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	na	0									
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	980	0	7.3	4.5	34	20	33	36	20	38	58
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	12000	0	0.25	0.39	1.7	0.72	0.72	0.75	0.52	0.25	0.25
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	na	0									
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	740000	0	67	22	190	200	92	89	85	260	1200
Petroleum Hydrocarbons														
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	3200	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	7800	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	2000	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	9700	0	4.4	5.6	7.4	5.9	3.3	9.4	6.4	2	2
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	59000	0	3.1	6.3	12	6.1	1.2	6.1	4.8	1	1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	na	0	11	2.9	35	74	2	3.5	3.4	[A] 3.2	[A] 2.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	na	0	180	3	280	880	3	3	10	[A] 300	[A] 26
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	na	0									
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	na	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	[A] 0.05	[A] 0.05
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	na	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	[A] 0.05	[A] 0.05
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	3500	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	16000	0	1	1	1	1	1	1	1	1	1
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	36000	0	1	1	1	1	1	1	2.2	1	1
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	28000	0	6.7	3.0	3.6	6.5	3.3	3.8	3.4	3.3	3.6
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	28000	0	5.9	2	2	2	2	2	19	2	2
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	na	0									

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	# exceeding GAC	# exceeding T1	Max sample (ID and depth)
Metals and Inorganics											
Chromium	mg/kg	8600	49	1240	5	53	53	0		21	TP61 - 0.2
Lead	mg/kg	2300		10600	1	53	53	0	1		TP19 - 0.2
Asbestos											
Bulk Fibre Identification		Detect				1	1	0	1		
Asbestos in soil		Detect				51	4	47	4		
Asbestos Matrix (microscope)		Detect				51	4	47	4		
Asbestos in soil % composition (hand picking and weighing)	% w/w	0.001		0.009	<0.001	4	2	2	2		TP53 - 0.5
Bulk Fibre Identification Matrix (visual)		Detect				1	1	0	1		
Bulk Fibre - % Asbestos in ACM (HSG264)		Detect				1	1	0	1		
Petroleum Hydrocarbons											
Ali >C12-C16	mg/kg	59000	24	64	<1	43	15	28		3	TP08 - 0.2
Aro >C12-C16	mg/kg	36000	169	349	<1	43	20	23		2	TP06 - 0.8 TP53 - 0.5
Polycyclic aromatic hydrocarbons											
Benzo(b)fluoranthene	mg/kg	44		98.7	<0.05	53	25	28	2		TP53 - 0.5
Dibenzo(ah)anthracene	mg/kg	3.5		8.99	<0.04	53	11	42	2		TP53 - 0.5
Fluorene	mg/kg	63000	31	38.6	<0.01	53	25	28		2	TP53 - 0.5
Naphthalene	mg/kg	1800	76	88.4	<0.03	53	26	27		1	TP06 - 0.8

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Project name
Project code
Client name
Address
NGR
Land use: Commercial Scenario
SOM: 1%
GAC version: 2021 00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	22/03419/1	22/03419/2	22/03722/4	22/03722/1	22/03722/2	22/03419/4	22/03419/5	22/03214/1	22/03214/2	22/03214/4	22/03214/5	22/03214/7	22/03214/8	22/03214/10	22/03214/11	22/03214/12	22/03214/13
Client sample ID									BH201	BH201	BH203	BH206	BH206	BH208	BH208	TP201	TP201	TP201	TP202	TP202	TP203	TP203	TP203	TP204	TP204
Depth to top									1.6	3.9	2	1.9	5	1	3.2	0.1	0.6	1.6	0.1	1	0.1	1.3	2	0.8	1.2
Depth to bottom																									
Date sampled									06/04/22	06/04/22				06/04/22	06/04/22	30/03/22	30/03/22	30/03/22	30/03/22	30/03/22	30/03/22	30/03/22	30/03/22	31/03/22	31/03/22
Metals and Inorganics																									
Arsenic	mg/kg	640		24	<1	55	27	28	6	5	5	<5	6	24	2	<1	<1	18	<1	<1	18	<1	4	6	5
Boron (water soluble)	mg/kg	240000		8.4	<1.0	57	34	23	<1.0	<1.0	<1.0	7	1.6	<1.0	2.3	2.7	5.8	<1.0	<1.0	5	<1.0	2.6	1.4	<1.0	<1.0
Cadmium	mg/kg	410		32.2	<0.5	55	45	10	<0.5	<0.5	<0.5	<2.5	0.9	2.3	1.1	1.8	<0.5	3.9	4.2	6.4	32.2	5.1	3.4	2.9	1.2
Chromium	mg/kg	8600	49	1000	4	55	55	0	8	5	19	118	16	37	20	35	5	165	399	216	159	55	38	315	82
Chromium (hexavalent)	mg/kg	49		1	<1	57	1	56	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1
Copper	mg/kg	68000		189	2	55	55	0	6	2	6	8	23	60	25	15	2	118	14	32	189	69	40	25	15
Lead	mg/kg	2300		265	<1	55	51	4	10	4	11	10	30	139	15	23	<1	115	14	14	60	28	28	36	22
Mercury	mg/kg	1120	15	35	<0.17	55	39	16	0.41	<0.17	<0.17	2.13	<0.17	0.74	0.94	1.95	1.47	0.25	<0.17	<0.17	<0.17	0.95	1.04	<0.17	<0.17
Nickel	mg/kg	980		72	<1	55	52	3	7	4	8	<5	20	23	20	8	1	54	11	13	65	18	11	13	10
Selenium	mg/kg	12000		16	<1	55	45	10	<1	<1	<1	12	<1	3	3	3	2	3	4	3	<1	2	<1	2	16
Zinc	mg/kg	740000		6890	<5	55	54	1	22	15	30	28	81	26	59	53	<5	43	62	42	34	47	23	119	40
Asbestos																									
Asbestos in soil		Detect				54	4	50	NAD	NAD	NAD	NAD		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		NAD
Asbestos Matrix (microscope)		Detect				26	4	22																	
Petroleum Hydrocarbons																									
Ali >C5-C6	mg/kg	3200	304		<0.01	55	0	55	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Ali >C6-C8	mg/kg	7800	144		<0.01	55	0	55	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Ali >C8-C10	mg/kg	2000	78	25	<1	55	21	34	<1	<10	2	<1	5	<20	<1	1	<1	25	2	<1	<1	13	1		<1
Ali >C10-C12	mg/kg	9700	48	1510	<1	55	22	33	<1	14	1	<1	4	<20	<1	1	<1	53	2	<1	<1	25	1		<1
Ali >C12-C16	mg/kg	59000	24	1200	<1	55	37	18	<1	149	4	<1	5	72	4	3	<1	73	6	1	<1	39	3		<1
Ali >C16-C21	mg/kg			1090	<1	55	46	9	<1	53	6	1	5	632	11	7	<1	287	7	3	<1	148	4		<1
Ali >C21-C35	mg/kg			5830	<1	55	52	3	5	16	53	15	27	5830	121	73	1	2420	34	69	42	1420	110		4
Ali >C16-C35 calculated	mg/kg	1000000		6462	<1	55	53	2	5	69	59	16	32	6462	132	80	1	2707	41	72	42	1568	114		4
Total Aliphatics	mg/kg			6830	<1	55	53	2	7	232	66	16	45	6530	138	86	1	2850	52	73	42	1640	120		4
Aro >C5-C7	mg/kg			1.02	<0.01	55	7	48	0.13	0.03	0.22	<0.01	<0.05	<0.05	0.03	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Aro >C7-C8	mg/kg			1.67	<0.01	55	4	51	<0.01	0.05	<0.01	<0.01	<0.05	<0.05	0.02	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Aro >C8-C10	mg/kg	3500	613	80	<1	55	38	17	<1	25	6	9	6	43	3	1	<1	30	<1	4	<1	22	3		<1
Aro >C10-C12	mg/kg	16000	364	290000	<1	55	35	20	15	979	31	<1	5	73	5	4	<1	54	2	<1	<1	69	3		6
Aro >C12-C16	mg/kg	36000	169	11600	<1	55	49	6	24	3850	80	3	14	173	12	14	<1	141	7	3	2	129	9		9
Aro >C16-C21	mg/kg	28000		28200	<1	55	50	5	4	131	14	3	15	677	19	39	<1	284	11	9	4	172	15		8
Aro >C21-C35	mg/kg	28000		14900	<1	55	52	3	8	21	14	6	18	834	35	112	<1	277	20	37	9	209	20		18
Total Aromatics	mg/kg			345000	<1	55	52	3	51	5010	145	22	58	1800	75	170	<1	787	41	53	15	602	49		40
TPH (Ali & Aro)	mg/kg			352000	<1	55	53	2	58	5240	211	38	102	8340	212	256	1	3650	93	127	57	2250	169		44
BTEX - Benzene	mg/kg	27		1.02	<0.01	55	7	48	0.13	0.03	0.22	<0.01	<0.05	<0.05	0.03	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
BTEX - Toluene	mg/kg	56000	869	1.67	<0.01	55	4	51	<0.01	0.05	<0.01	<0.01	<0.05	<0.05	0.02	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
BTEX - Ethyl Benzene	mg/kg	6000	518	0.23	<0.01	55	3	52	<0.01	0.1	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
BTEX - o Xylene	mg/kg	6600	478	1.02	<0.01	55	3	52	<0.01	0.13	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
BTEX - m & p Xylene	mg/kg	5900	576	2.36	<0.01	55	3	52	<0.01	0.43	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Fuel oxygenates																									
MTBE	mg/kg	7500			<0.01	55	0	55	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05		<0.01
Polycyclic aromatic hydrocarbons																									
Acenaphthene	mg/kg	110000		2050	<0.01	57	47	10	1.67	238	4.41	<0.01	0.01	9.18	0.51	0.36	0.01	0.24	0.06	0.01	0.05	2.9	<0.01	<0.01	0.29
Acenaphthylene	mg/kg	110000		292	<0.01	57	50	7	0.06	1.84	0.29	<0.01	<0.01	0.29	0.02	0.83	0.03	0.07	0.06	0.03	0.09	0.04	<0.01	0.06	0.03
Anthracene	mg/kg	520000		1370	<0.02	57	49	8	0.04	2.9	0.02	<0.02	0.05	1.27	0.1	0.59	<0.02	0.09	0.11	0.07	0.06	0.25	<0.02	0.11	0.02
Benzo(a)anthracene	mg/kg	170		866	<0.04	57	49	8	0.1	0.08	<0.04	<0.04	0.12	1.75	0.11	1.47	<0.04	0.15	0.35	0.19	0.17	0.22	<0.04	0.54	0.1
Benzo(a)pyrene	mg/kg	77		464	<0.04	57	49	8	0.1	<0.04	<0.04	<0.04	0.12	0.91	0.07	2.16	0.06	0.07	0.26	0.21	0.23	0.08	<0.04	0.47	0.09
Benzo(b)fluoranthene	mg/kg	44		953	<0.05	57	50	7	0.14	<0.05	0.07	<0.05	0.18	1.32	0.1	3.2	0.08	0.11	0.63	0.38	0.31	0.18	<0.05	0.65	0.11
Benzo(ghi)perylene	mg/kg	3900		355	<0.05	57	43	14	<0.05	<0.05	<0.05	<0.05	0.08	0.26	<0.05	1.55	0.05	<0.05	0.18	0.24	0.19	<0.05	<0.05	0.24	<0.05
Benzo(k)fluoranthene	mg/kg	1200		360	<0.07	57	32	25	<0.07	<0.07	<0.07	<0.07	<0.07	0.35	<0.07	1	<0.07	<0.07	0.19	0.12	0.09	<0.07	<0.07	0.22	<0.07
Chrysene	mg/kg	350		1170	<0.06	57	48	9	0.14	0.08	<0.06	<0.06	0.21	2.08	0.18	1.98	<0.06	0.24	0.59	0.36	0.25	0.43	<0.06	0.55	0.12
Dibenzo(ah)anthracene	mg/kg	3.5		118	<0.04	57	30	27	<0.04	<0.04	<0.04	<0.04	<0.04	0.14	<0.04	0.49	<0.04	<0.04	0.09	0.07	0.05	<0.04	<0.04	0.09	<0.04
Fluoranthene	mg/kg	23000		1860	<0.08	57	51	6	0.17	0.84	0.12	<0.08	0.31	4.11	0.39	2.75	<0.08	0.55	0.7	0.34	0.43	0.62	<0.08	1.32	0.24
Fluorene	mg/kg	63000	31	806	<0.01	57	48	9	0.13	71.3	0.67	<0.01	0.04	6.49	0.44	0.32	<0.01	0.29	0.07	0.02	0.06	1.64	<0.01	0.03	0.04
Indeno(123-cd)pyrene	mg/kg	500		441	<0.03	57	50	7	0.06	<0.03	0.05	<0.03	0.09	0.28	0.03	2.11	0.06	<0.03	0.21	0.27	0.22	0.03	<0.03	0.33	0.06
Naphthalene	mg/kg	1800	76	51300	<0.03	57	50	7	4.11	438	1.28	<0.03	0.21	23.7	1.78	0.63	<0.03	0.37	0.37	0.12	0.13	10.1	<0.03	<0.03	1.02
Phenanthrene	mg/kg	22000		2450	<0.03	57	55	2	0.12	16.3	0.18	0.07	0.38	7.21	0.74	1.36	0.04	0.7	0.85	0.22	0.34	2.32	0.05	0.39	0.14
Pyrene	mg/kg	54000		1280	<0.07	57	51	6	0.2	0.4	0.08	<0.07	0.22	4.64	0.28	1.99	<0.07	0.45	0.49	0.29	0.28	0.36	<0.07	0.86	0.2
Total PAH-16MS	mg/kg			65100	<0.08	57	53	4	7.04	770	7.17	<0.08	2.02	64	4.75	22.8	0.33	3.33	5.21	2.94	2.95	19.2	<0.08	5.86	2.46
Volatile Organic Compounds (VOC)																									
1,1,1,2-Tetrachloroethane	mg/kg	110			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1,1-Trichloroethane	mg/kg	700			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1,2,2-Tetrachloroethane	mg/kg	270			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1,2-Trichloroethane	mg/kg	89			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1-Dichloroethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1-Dichloroethene	mg/kg	24			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,1-Dichloropropene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,2,3-Trichlorobenzene	mg/kg				<0.003	22	0	22	<0.003	<0.003	<0.003	<0.003			<0.015	<0.003	<0.003	<0.075							
1,2,3-Trichloropropane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,2,4-Trichlorobenzene	mg/kg				<0.003	22	0	22	<0.003	<0.003	<0.003	<0.003			<0.015	<0.003	<0.003	<0.075							
1,2,4-Trimethylbenzene	mg/kg	330		0.707	<0.001	22	3	19	<0.001	0.707	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	22	0	22	<0.002	<0.002	<0.002	<0.002			<0.01	<0.002	<0.002	<0.05							
1,2-Dibromoethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,2-Dichlorobenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,2-Dichloroethane	mg/kg	0.67			<0.002	22	0	22	<0.002	<0.002	<0.002	<0.002			<0.01	<0.002	<0.002	<0.05							
1,2-Dichloropropane	mg/kg	3			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,3,5-Trimethylbenzene	mg/kg	330		0.519	<0.001	22	3	19	<0.001	0.519	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,3-Dichlorobenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,3-Dichloropropane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
1,4-Dichlorobenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
2,2-Dichloropropane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
2-Chlorotoluene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
4-Chlorotoluene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
4-Isopropyltoluene	mg/kg			0.008	<0.001	22	1	21	<0.001	0.008	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Benzene	mg/kg	27		1.04	<0.001	22	7	15	0.03	0.118	0.037	<0.001			0.009	<0.001	<0.001	<0.025							
Bromobenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Bromochloromethane	mg/kg				<0.005	22	0	22	<0.005	<0.005	<0.005	<0.005			<0.025	<0.005	<0.005	<0.125							
Bromodichloromethane	mg/kg				<0.01	22	0	22	<0.01	<0.01	<0.01	<0.01			<0.05	<0.01	<0.01	<0.25							
Bromoform	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Bromomethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Carbon Disulphide	mg/kg			0.088	<0.001	22	4	18	<0.001	0.003	<0.001	<0.001			0.007	<0.001	<0.001	<0.025							
Carbon Tetrachloride	mg/kg	2.9			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Chlorobenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Chloroethane	mg/kg	901			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Chloroform	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Chloromethane	mg/kg	1			<0.01	22	0	22	<0.01	<0.01	<0.01	<0.01			<0.05	<0.01	<0.01	<0.25							
cis 1,2-Dichloroethene	mg/kg	14			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
cis 1,3-Dichloropropene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Dibromochloromethane	mg/kg				<0.003	22	0	22	<0.003	<0.003	<0.003	<0.003			<0.015	<0.003	<0.003	<0.075							
Dibromomethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Dichlorodifluoromethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Dichloromethane	mg/kg	257			<0.005	22	0	22	<0.005	<0.005	<0.005	<0.005			<0.025	<0.005	<0.005	<0.125							
Ethylbenzene	mg/kg	6000	518	0.225	<0.001	22	3	19	<0.001	0.225	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Hexachlorobutadiene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Isopropylbenzene	mg/kg			0.005	<0.001	22	1	21	<0.001	0.005	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
m & p Xylene	mg/kg	5900	576	1.28	<0.001	22	3	19	<0.001	1.28	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
n-Butylbenzene	mg/kg			0.011	<0.001	22	1	21	<0.001	0.011	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
n-Propylbenzene	mg/kg			0.004	<0.001	22	1	21	<0.001	0.004	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
o-Xylene	mg/kg	6600	478	0.185	<0.001	22	1	21	<0.001	0.185	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
sec-Butylbenzene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Styrene	mg/kg			2.75	<0.001	22	3	19	<0.001	0.028	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
tert-Butylbenzene	mg/kg				<0.002	22	0	22	<0.002	<0.002	<0.002	<0.002			<0.01	<0.002	<0.002	<0.05							
Tetrachloroethene	mg/kg	24			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Toluene	mg/kg	56000	869	1.03	<0.001	22	5	17	0.002	0.174	<0.001	<0.001			0.005	<0.001	<0.001	<0.025							
trans 1,2-Dichloroethene	mg/kg	21			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
trans 1,3-Dichloropropene	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Trichloroethene	mg/kg	0.7			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Trichlorofluoromethane	mg/kg				<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Vinyl Chloride	mg/kg	1.1			<0.001	22	0	22	<0.001	<0.001	<0.001	<0.001			<0.005	<0.001	<0.001	<0.025							
Semi-Volatile Organic Compounds (SVOC)																									
2,4,5-Trichlorophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2,4,6-Trichlorophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2,4-Dichlorophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2,4-Dimethylphenol	mg/kg			1.16	<0.1	22	1	21	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	1.16							
2,4-Dinitrotoluene	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2,6-Dinitrotoluene	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2-Chloronaphthalene	mg/kg	370	114		<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2-Chlorophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
2-Methylnaphthalene	mg/kg			1100	<0.1	22	13	9	0.902	6.3	0.436	<0.1			0.612	0.157	<0.1	2.51							
2-Methylphenol	mg/kg			0.264	<0.1	22	1	21	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	0.264							
2-Nitrophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
4-Chloro-3-methylphenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
4-Methylphenol	mg/kg			0.491	<0.1	22	1	21	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	0.491							
4-Nitrophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Bis(2-chloroethoxy)methane	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Bis(2-chloroethyl)ether	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Bis(2-chloroisopropyl)ether	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Bis(2-ethylhexyl)phthalate	mg/kg				<0.5	22	0	22	<0.5	<1	<0.5	<0.5			<0.5	<0.5	<0.5	<1							
Butylbenzyl phthalate	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Carbazole	mg/kg			2880	<0.1	22	5	17	<0.1	<0.2	0.177	<0.1			<0.1	0.176	<0.1	0.351							
Dibenzofuran	mg/kg			903	<0.1	22	13	9	0.651	5.44	2.16	<0.1			0.376	0.296	<0.1	0.589							
Diethyl phthalate	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Dimethyl phthalate	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Hexachlorobenzene	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Hexachlorocyclopentadiene	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Hexachloroethane	mg/kg	21	8		<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Isophorone	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
n-Dibutylphthalate	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.2							
n-Dioctylphthalate	mg/kg				<0.5	22	0	22	<0.5	<1	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5							
Nitrobenzene	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
n-Nitroso-n-dipropylamine	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Pentachlorophenol	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Perylene	mg/kg			140	<0.1	22	6	16	<0.1	<0.2	<0.1	<0.1			<0.1	0.662	<0.1	<0.1							
Phenols																									
Phenol	mg/kg	440			<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							
Phenols - Total by HPLC	mg/kg	440		3.6	<0.2	57	1	56	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Phenols - Total by HPLC	mg/kg	440		3.6	<0.2	57	1	56	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Other analytes																									
% Stones >10mm	% w/w			39.4	<0.1	57	16	41	19.7	<0.1	<0.1	<0.1	<0.1	<0.1	32.7	<0.1	<0.1	<0.1	27.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenyl ether	mg/kg				<0.1	22	0	22	<0.1	<0.2	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1							

Analyte	22/03214/14	22/03214/15	22/03214/17	22/03214/19	22/03214/21	22/03214/23	22/03388/14	22/03388/16	22/03388/18	22/03388/5	22/03388/7	22/03388/8	22/03388/10	22/03388/11	22/03388/13	22/03388/48	22/03388/50	22/03479/4	22/03479/5	22/03419/7
Client sample ID	TP204	TP205	TP205	TP206	TP207	TP207	TP208	TP208	TP209	TP210	TP210	TP211	TP212	TP213	TP213	TP217	TP218	TP221	TP221	TP222
Depth to top	2	0.1	1.1	0.6	0.2	1.1	0.2	1	0.9	0.1	0.95	0.1	1	0.2	0.55	0.5	0.2	0.2	0.5	0.2
Depth to bottom																				
Date sampled	31/03/22	31/03/22	31/03/22	31/03/22	31/03/22	31/03/22	04/04/22	01/04/22	01/04/22	04/04/22	04/04/22	04/04/22	04/04/22	04/04/22	04/04/22	05/04/22	05/04/22	07/04/22	07/04/22	06/04/22
Metals and Inorganics																				
Arsenic		7	7	1	<1		16	5	4	4	3	1	<1	<1	3	<1	<1	<1	<1	<1
Boron (water soluble)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	1.5	<1.0	<1.0	2.5	2.7	4.5	3.6	3.7	<1.0	1.3	5.4	<1.0
Cadmium		0.7	0.8	2	1.2		8.1	1.7	2	21.1	2.3	1.1	3.9	7.2	1.6	4.4	5.7	<0.5	<0.5	2.4
Chromium		33	17	144	242		331	50	89	277	170	32	364	1000	51	346	622	8	6	122
Chromium (hexavalent)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper		17	33	78	10		45	7	36	178	28	20	19	53	7	19	25	5	4	89
Lead		20	12	89	21		184	74	65	265	86	142	41	66	42	25	16	6	<1	78
Mercury		<0.17	<0.17	1.6	0.75		35	7.87	0.9	1.3	0.3	0.85	<0.17	1.7	7.36	<0.17	0.4	1.72	2.12	0.44
Nickel		8	24	18	10		22	4	40	72	17	10	15	41	5	40	28	2	<1	11
Selenium		<1	<1	1	<1		5	1	4	3	2	1	2	10	<1	4	5	3	6	3
Zinc		42	41	265	42		508	127	255	6890	277	135	82	203	94	191	125	73	5	468
Asbestos																				
Asbestos in soil	NAD	NAD	NAD	NAD	NAD	NAD	NAD	Amosite	NAD	NAD	NAD	Chrysotile	NAD	NAD		NAD	NAD	NAD	NAD	NAD
Asbestos Matrix (microscope)							-	Loose Fibres	-	-	-	Loose Fibres	-	-		-	-			
Petroleum Hydrocarbons																				
Ali >C5-C6	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Ali >C6-C8	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Ali >C8-C10	<1	<1	<1	<1	<1	<1	<500	<50	<1	<5	<50	<1	<1	<1		<1	1	<1	<1	4
Ali >C10-C12	<1	<1	<1	<1	<1	<1	1510	472	<1	<5	<50	1	<1	<1		<1	<1	<1	<1	4
Ali >C12-C16	<1	3	<1	1	<1	<1	1200	416	1	20	82	1	<1	1		<1	1	2	<1	8
Ali >C16-C21	<1	11	3	5	1	2	1090	293	4	201	118	2	1	2		2	4	2	<1	8
Ali >C21-C35	1	20	52	12	7	1	3020	183	46	895	<50	44	26	33		79	55	16	5	49
Ali >C16-C35 calculated	1	31	55	17	8	3	4110	476	50	1096	118	46	27	35		81	59	18	5	57
Total Aliphatics	1	35	54	19	8	4	6830	1360	51	1120	200	48	27	37		81	61	20	5	71
Aro >C5-C7	0.01	<0.05	<0.01	<0.05	<0.01	<0.01	1.02	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Aro >C7-C8	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	1.67	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Aro >C8-C10	<1	3	<1	1	<1	<1	<500	75	1	<5	<50	12	4	5		4	80	<1	<1	4
Aro >C10-C12	<1	4	<1	2	<1	<1	290000	74400	2	7	<50	3	<1	4		<1	<1	<1	<1	5
Aro >C12-C16	2	20	<1	9	3	2	11600	3780	5	75	6890	26	3	19		3	1	2	<1	14
Aro >C16-C21	2	44	3	25	7	5	28200	5900	12	194	1290	15	3	14		5	3	3	<1	18
Aro >C21-C35	12	295	7	134	36	4	14900	3360	45	148	687	40	6	33		27	4	6	2	42
Total Aromatics	17	366	10	170	46	11	345000	87600	65	424	8870	96	16	76		38	89	12	2	82
TPH (Ali & Aro)	18	401	64	189	54	15	352000	88900	116	1540	9070	144	43	113		119	150	32	7	153
BTEX - Benzene	0.01	<0.05	<0.01	<0.05	<0.01	<0.01	1.02	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
BTEX - Toluene	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	1.67	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
BTEX - Ethyl Benzene	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	0.23	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
BTEX - o Xylene	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	1.02	0.24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
BTEX - m & p Xylene	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	2.36	0.35	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Fuel oxygenates																				
MTBE	<0.01	<0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.05
Polycyclic aromatic hydrocarbons																				
Acenaphthene	0.09	0.74	0.03	0.63	0.19	0.67	987	76.6	0.17	2.81	2050	0.19	0.1	0.9	1.33	0.09	0.06	<0.01	<0.01	0.03
Acenaphthylene	0.04	1.88	0.01	1.74	0.28	0.05	292	49.8	0.28	0.8	24.1	0.07	0.02	0.12	0.08	0.02	0.04	0.01	<0.01	0.05
Anthracene	0.04	1.34	<0.02	1.35	0.38	0.14	1370	149	0.26	0.8	55	0.07	0.03	0.16	0.14	0.09	0.07	0.03	<0.02	0.1
Benzo(a)anthracene	0.06	3.09	<0.04	2.83	0.71	<0.04	866	91.7	0.62	1.86	26.1	0.22	0.07	0.31	0.25	0.16	0.12	0.06	<0.04	0.3
Benzo(a)pyrene	0.08	8.02	<0.04	6.04	0.86	<0.04	464	62	0.79	1.68	19.4	0.2	0.06	0.3	0.22	0.17	0.11	0.09	<0.04	0.24
Benzo(b)fluoranthene	0.13	10.1	<0.05	7.45	1.14	<0.05	953	102	0.92	2.21	30.4	0.36	0.1	0.4	0.32	0.25	0.15	0.14	<0.05	0.62
Benzo(ghi)perylene	0.06	5.63	<0.05	4.21	0.79	<0.05	355	42.9	0.85	1.52	9.52	0.24	0.07	0.29	0.22	0.21	0.1	0.07	<0.05	0.17
Benzo(k)fluoranthene	<0.07	3.18	<0.07	2.37	0.39	<0.07	360	36.8	0.29	0.75	9.52	0.11	<0.07	0.15	0.11	0.08	<0.07	<0.07	<0.07	0.18
Chrysene	<0.06	4.15	<0.06	3.7	0.86	<0.06	1170	116	0.73	1.88	30.9	0.3	0.1	0.41	0.29	0.22	0.15	0.11	<0.06	0.57
Dibenzo(ah)anthracene	<0.04	1.74	<0.04	1.25	0.23	<0.04	118	11.5	0.18	0.38	4.33	0.06	<0.04	0.06	0.05	0.05	<0.04	<0.04	<0.04	0.09
Fluoranthene	0.13	4.83	<0.08	4.85	1.24	0.27	1860	226	1.05	3.49	65.3	0.32	0.15	0.56	0.53	0.56	0.35	0.14	<0.08	0.44
Fluorene	0.06	0.38	<0.01	0.29	0.14	0.56	806	83.2	0.15	1.18	674	0.11	0.05	0.47	0.64	0.05	0.05	0.01	<0.01	0.08
Indeno(123-cd)pyrene	0.06	6.65	<0.03	5.23	0.91	0.05	441	50.6	0.95	1.81	12.3	0.26	0.07	0.31	0.23	0.18	0.1	0.07	<0.03	0.19
Naphthalene	1.74	0.28	0.06	0.2	0.07	0.2	51300	16700	2.2	0.97	2.3	0.08	0.14	0.86	1.43	0.34	0.22	0.05	<0.03	0.21
Phenanthrene	0.06	1.28	<0.03	0.8	0.66	0.49	2450	250	0.41	1.56	266	0.29	0.17	0.65	0.56	0.49	0.38	0.15	0.03	0.62
Pyrene	0.11	3.71	<0.07	3.16	0.91	0.17	1280	153	0.83	3.15	38.7	0.25	0.12	0.43	0.39	0.38	0.25	0.11	<0.07	0.32
Total PAH-16MS	2.66	57	0.1	46.1	9.76	2.6	65100	18200	10.7	26.9	3320	3.13	1.25	6.38	6.79	3.34	2.15	1.04	<0.08	4.21
Volatile Organic Compounds (VOC)																				
1,1,1,2-Tetrachloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1,1-Trichloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1,2,2-Tetrachloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1,2-Trichloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1-Dichloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1-Dichloroethene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,1-Dichloropropene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,2,3-Trichlorobenzene	<0.003	<0.003				<0.003	<0.075	<0.003											<0.003	<0.075
1,2,3-Trichloropropane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,2,4-Trichlorobenzene	<0.003	<0.003				<0.003	<0.075	<0.003											<0.003	<0.075
1,2,4-Trimethylbenzene	<0.001	<0.001				<0.001	0.249	0.009											<0.001	<0.025
1,2-Dibromo-3-chloropropane	<0.002	<0.002				<0.002	<0.05	<0.002											<0.002	<0.05
1,2-Dibromoethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,2-Dichlorobenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,2-Dichloroethane	<0.002	<0.002				<0.002	<0.05	<0.002											<0.002	<0.05
1,2-Dichloropropane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,3,5-Trimethylbenzene	<0.001	<0.001				<0.001	0.219	0.008											<0.001	<0.025
1,3-Dichlorobenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,3-Dichloropropane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
1,4-Dichlorobenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
2,2-Dichloropropane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
2-Chlorotoluene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
4-Chlorotoluene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
4-Isopropyltoluene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Benzene	0.008	<0.001				<0.001	1.04	0.012											<0.001	<0.025
Bromobenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Bromochloromethane	<0.005	<0.005				<0.005	<0.125	<0.005											<0.005	<0.125
Bromodichloromethane	<0.01	<0.01				<0.01	<0.25	<0.01											<0.01	<0.25
Bromoform	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Bromomethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Carbon Disulphide	<0.001	<0.001				<0.001	0.088	0.002											<0.001	<0.025
Carbon Tetrachloride	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Chlorobenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Chloroethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Chloroform	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Chloromethane	<0.01	<0.01				<0.01	<0.25	<0.01											<0.01	<0.25
cis 1,2-Dichloroethene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
cis 1,3-Dichloropropene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Dibromochloromethane	<0.003	<0.003				<0.003	<0.075	<0.003											<0.003	<0.075
Dibromomethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Dichlorodifluoromethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Dichloromethane	<0.005	<0.005				<0.005	<0.125	<0.005											<0.005	<0.125
Ethylbenzene	<0.001	<0.001				<0.001	0.095	0.001											<0.001	<0.025
Hexachlorobutadiene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Isopropylbenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
m & p Xylene	<0.001	<0.001				<0.001	1	0.022											<0.001	<0.025
n-Butylbenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
n-Propylbenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
o-Xylene	<0.001	<0.001				<0.001	<0.419	<0.013											<0.001	<0.025
sec-Butylbenzene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Styrene	<0.001	<0.001				<0.001	2.75	0.078											<0.001	<0.025
tert-Butylbenzene	<0.002	<0.002				<0.002	<0.05	<0.002											<0.002	<0.05
Tetrachloroethene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Toluene	<0.001	<0.001				<0.001	1.03	0.026											<0.001	<0.025
trans 1,2-Dichloroethene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
trans 1,3-Dichloropropene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Trichloroethene	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Trichlorofluoromethane	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Vinyl Chloride	<0.001	<0.001				<0.001	<0.025	<0.001											<0.001	<0.025
Semi-Volatile Organic Compounds (SVOC)																				
2,4,5-Trichlorophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2,4,6-Trichlorophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2,4-Dichlorophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2,4-Dimethylphenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2,4-Dinitrotoluene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2,6-Dinitrotoluene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2-Chloronaphthalene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2-Chlorophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2-Methylnaphthalene	<0.1	<1				<0.1	1100	444											<0.1	0.27
2-Methylphenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
2-Nitrophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
4-Chloro-3-methylphenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
4-Methylphenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
4-Nitrophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Bis(2-chloroethoxy)methane	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Bis(2-chloroethyl)ether	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Bis(2-chloroisopropyl)ether	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Bis(2-ethylhexyl)phthalate	<0.5	<5				<0.5	<500	<500											<0.5	<0.5
Butylbenzyl phthalate	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Carbazole	<0.1	<1				<0.1	2880	1960											<0.1	<0.1
Dibenzofuran	<0.1	<1				0.952	903	414											<0.1	0.174
Diethyl phthalate	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Dimethyl phthalate	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Hexachlorobenzene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Hexachlorocyclopentadiene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Hexachloroethane	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Isophorone	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
n-Dibutylphthalate	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
n-Dioctylphthalate	<0.5	<5				<0.5	<500	<500											<0.5	<0.5
Nitrobenzene	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
n-Nitroso-n-dipropylamine	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Pentachlorophenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Perylene	<0.1	4.67				<0.1	140	<100											<0.1	<0.1
Phenols																				
Phenol	<0.1	<1				<0.1	<100	<100											<0.1	<0.1
Phenols - Total by HPLC	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Phenols - Total by HPLC	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Other analytes																				
% Stones >10mm	<0.1	30	<0.1	38.3	35	<0.1	<0.1	<0.1	10.3	10.5	15.6	<0.1	39.4	<0.1	27.3	15.7	<0.1	<0.1	<0.1	31.7
4-Bromophenyl phenyl ether	<0.1	<1				<0.1	<100	<100											<0.1	<0.1

Analyte	22/03419/8	22/03479/1	22/03479/2	22/03479/3	22/03388/29	22/03388/31	22/03388/1	22/03388/2	22/03388/4	22/03388/20	22/03388/32	22/03388/33	22/03388/34	22/03388/39	22/03388/44	22/03388/41	22/03388/26	22/03388/28	22/03388/22	22/03388/24
Client sample ID	TP222	TP223	TP223	TP223	TP224	TP224	TP225	TP225	TP226	TP227	TP228	TP228	TP228	TP230	TP231	TP232	TP233	TP233	TP234	TP234
Depth to top	0.5	0.2	0.5	0.9	1.1	0.5	0.2	0.5	0.5	0.1	1.2	0.6	0.1	0.15	0.1	0.1	1.4	0.1	0.1	1.1
Depth to bottom																				
Date sampled	06/04/22	07/04/22	07/04/22	07/04/22	04/04/22	04/04/22	04/04/22	04/04/22	04/04/22	01/04/22	01/04/22	01/04/22	01/04/22	01/04/22	05/04/22	05/04/22	04/04/22	04/04/22	04/04/22	04/04/22
Metals and Inorganics																				
Arsenic	<1	<1	<1	<1	4	7	2	<1	<1	<1	<1	<1	<1	<1	11	<1	7	<1	<1	5
Boron (water soluble)	2.2	1.3	5.5	4.8	3.2	2.8	4.8	6.6	2.2	8.4	2.3	1.1	3.8	3.1	<1.0	<1.0	<1.0	3.6	1.9	1.4
Cadmium	5.1	<0.5	<0.5	<0.5	3.9	4.1	5.1	5.7	4.8	5	0.9	5.7	4.8	3.7	2.1	1.8	3.1	3.5	4.6	3.9
Chromium	413	18	8	4	188	115	272	790	334	758	75	779	440	481	53	140	42	182	257	124
Chromium (hexavalent)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	11	8	4	3	53	82	72	37	29	36	4	44	20	18	9	15	142	15	28	45
Lead	10	15	4	<1	125	112	98	32	54	29	<1	21	35	14	222	36	67	15	35	48
Mercury	<0.17	2.16	2.18	2.02	0.74	0.9	0.74	0.35	0.5	0.42	0.92	0.18	<0.17	<0.17	0.95	1.05	0.67	<0.17	0.19	1
Nickel	5	3	1	<1	21	30	43	13	24	14	2	31	25	20	11	21	41	13	17	22
Selenium	11	4	4	3	3	2	3	6	4	7	4	7	5	6	4	4	4	5	4	3
Zinc	43	88	44	20	495	389	366	201	183	87	13	45	209	86	66	169	66	70	218	168
Asbestos																				
Asbestos in soil	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix (microscope)					Loose Fibres	Loose Fibres	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons																				
Ali >C5-C6	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.06	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Ali >C6-C8	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.09	<0.01	<0.10	<0.14	<0.09	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Ali >C8-C10	<1	4	2	1	1	1	2	1	<1	<1	<1	2	2	1	<1	<1	8	<1	<1	2
Ali >C10-C12	<1	4	3	2	<1	1	2	1	<1	<1	<1	2	1	<1	<1	<1	8	<1	<1	2
Ali >C12-C16	2	7	5	3	4	3	7	4	2	<1	<1	4	3	2	<1	<1	13	<1	<1	4
Ali >C16-C21	3	10	7	3	9	8	16	8	7	<1	<1	3	3	3	1	2	16	4	<1	6
Ali >C21-C35	26	198	239	58	58	123	248	163	49	<1	1	14	11	18	22	40	184	58	<1	66
Ali >C16-C35 calculated	29	208	246	61	67	131	264	171	56	<1	1	17	14	21	23	42	200	62	<1	72
Total Aliphatics	31	224	256	68	73	136	275	177	58	<1	1	25	21	24	24	43	229	61	<1	81
Aro >C5-C7	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Aro >C7-C8	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Aro >C8-C10	5	2	2	1	4	2	3	36	23	<1	<1	8	16	13	2	2	12	2	<1	7
Aro >C10-C12	1	4	2	2	2	7	4	1	<1	<1	<1	3	2	1	<1	2	13	<1	<1	5
Aro >C12-C16	3	11	8	6	16	14	13	5	14	<1	<1	8	12	4	3	3	47	3	<1	9
Aro >C16-C21	6	21	16	6	26	39	28	9	16	<1	<1	9	17	4	9	9	54	19	<1	15
Aro >C21-C35	10	106	121	27	71	109	68	22	18	<1	2	13	13	5	32	33	98	54	<1	39
Total Aromatics	26	145	149	41	120	171	115	74	72	<1	2	42	61	28	46	49	224	77	<1	75
TPH (Ali & Aro)	57	368	405	109	193	308	391	251	130	<1	3	67	82	52	70	92	452	138	<1	156
BTEX - Benzene	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
BTEX - Toluene	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
BTEX - o Xylene	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
BTEX - m & p Xylene	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.11	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Fuel oxygenates																				
MTBE	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.10	<0.10	<0.05	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
Polycyclic aromatic hydrocarbons																				
Acenaphthene	<0.01	<0.01	<0.01	<0.01	0.12	0.17	0.06	0.02	0.36	0.05	<0.01	0.12	0.2	0.15	0.19	0.11	0.85	0.06	0.17	0.02
Acenaphthylene	0.01	0.04	0.01	0.01	0.13	0.36	0.23	0.06	0.06	0.06	<0.01	0.03	0.05	0.05	0.05	<0.10	0.22	<0.01	0.09	0.02
Anthracene	0.03	0.06	<0.02	<0.02	0.35	0.74	0.38	2.34	0.14	0.1	<0.02	0.12	0.1	0.19	0.2	0.27	2.14	0.05	0.21	0.14
Benzo(a)anthracene	0.07	0.2	0.07	0.07	0.82	1.86	1	0.21	0.22	0.17	<0.04	0.23	0.12	0.16	0.63	0.79	1.65	0.29	0.44	0.57
Benzo(a)pyrene	0.06	0.19	0.07	0.07	0.55	1.27	0.75	0.15	0.16	0.16	<0.04	0.19	0.1	0.14	0.62	0.78	2.12	0.33	0.4	0.57
Benzo(b)fluoranthene	0.14	0.36	0.12	0.13	0.83	1.86	1.2	0.26	0.25	0.38	<0.05	0.33	0.18	0.25	0.84	0.99	2.22	0.44	0.52	0.9
Benzo(ghi)perylene	0.06	0.17	<0.05	0.06	0.4	0.79	0.54	0.16	0.16	0.16	<0.05	0.12	0.08	0.1	0.48	0.64	1.69	0.36	0.4	0.43
Benzo(k)fluoranthene	<0.07	0.11	<0.07	<0.07	0.29	0.69	0.38	0.1	0.09	0.09	<0.07	0.1	<0.07	<0.07	0.29	<0.70	0.82	0.15	0.19	0.32
Chrysene	0.16	0.27	0.09	0.1	0.92	1.94	1.15	0.29	0.29	0.61	<0.06	0.38	0.28	0.26	0.7	1	2.16	0.37	0.48	0.82
Dibenzo(ah)anthracene	<0.04	0.06	<0.04	<0.04	0.12	0.26	0.17	<0.04	<0.04	0.1	<0.04	0.04	<0.04	<0.04	0.12	<0.40	0.43	0.06	0.07	0.11
Fluoranthene	0.17	0.38	0.12	0.13	1.93	3.97	2.31	0.6	0.8	0.42	<0.08	0.62	0.5	0.5	1.32	1.54	3.99	0.4	1.14	0.98
Fluorene	0.03	0.03	<0.01	<0.01	0.15	0.34	0.13	0.2	0.09	0.36	<0.01	0.09	0.23	0.15	0.15	<0.10	0.81	0.03	0.2	0.02
Indeno(123-cd)pyrene	0.05	0.18	0.05	0.07	0.48	0.98	0.65	0.17	0.16	0.1	<0.03	0.13	0.07	0.07	0.53	0.64	1.63	0.36	0.4	0.45
Naphthalene	0.1	0.16	0.05	0.08	0.25	0.64	0.32	0.11	0.09	1.21	<0.03	0.21	0.4	0.7	8.58	<0.30	1.61	0.05	0.31	0.41
Phenanthrene	0.22	0.42	0.14	0.16	1.2	2.22	1.24	0.88	1.03	1.51	<0.03	0.72	1.15	1.29	0.67	0.84	9.62	0.25	0.92	0.55
Pyrene	0.1	0.29	0.1	0.1	1.21	2.72	1.61	0.42	0.5	0.36	<0.07	0.4	0.33	0.35	1.05	1.27	2.21	0.38	0.85	0.97
Total PAH-16MS	1.2	2.92	0.82	0.98	9.75	20.8	12.1	5.97	4.4	5.84	<0.08	3.83	3.79	4.36	16.4	8.87	34.2	3.58	6.79	7.28
Volatile Organic Compounds (VOC)																				
1,1,1,2-Tetrachloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1,1-Trichloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1,2,2-Tetrachloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1,2-Trichloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1-Dichloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1-Dichloroethene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,1-Dichloropropene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,2,3-Trichlorobenzene		<0.003		<0.003			<0.003	<0.003	<0.003									<0.003	<0.003	
1,2,3-Trichloropropane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,2,4-Trichlorobenzene		<0.003		<0.003			<0.003	<0.003	<0.003									<0.003	<0.003	
1,2,4-Trimethylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,2-Dibromo-3-chloropropane		<0.002		<0.002			<0.002	<0.002	<0.002									<0.002	<0.002	
1,2-Dibromoethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,2-Dichlorobenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,2-Dichloroethane		<0.002		<0.002			<0.002	<0.002	<0.002									<0.002	<0.002	
1,2-Dichloropropane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,3,5-Trimethylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,3-Dichlorobenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,3-Dichloropropane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
1,4-Dichlorobenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
2,2-Dichloropropane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
2-Chlorotoluene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
4-Chlorotoluene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
4-Isopropyltoluene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Benzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Bromobenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Bromochloromethane		<0.005		<0.005			<0.005	<0.005	<0.005									<0.005	<0.005	
Bromodichloromethane		<0.01		<0.01			<0.01	<0.01	<0.01									<0.01	<0.01	
Bromoform		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Bromomethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Carbon Disulphide		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Carbon Tetrachloride		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Chlorobenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Chloroethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Chloroform		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Chloromethane		<0.01		<0.01			<0.01	<0.01	<0.01									<0.01	<0.01	
cis 1,2-Dichloroethene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
cis 1,3-Dichloropropene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Dibromochloromethane		<0.003		<0.003			<0.003	<0.003	<0.003									<0.003	<0.003	
Dibromomethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Dichlorodifluoromethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Dichloromethane		<0.005		<0.005			<0.005	<0.005	<0.005									<0.005	<0.005	
Ethylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Hexachlorobutadiene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Isopropylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
m & p Xylene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
n-Butylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
n-Propylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
o-Xylene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
sec-Butylbenzene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Styrene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
tert-Butylbenzene		<0.002		<0.002			<0.002	<0.002	<0.002									<0.002	<0.002	
Tetrachloroethene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Toluene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
trans 1,2-Dichloroethene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
trans 1,3-Dichloropropene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Trichloroethene		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Trichlorofluoromethane		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Vinyl Chloride		<0.001		<0.001			<0.001	<0.001	<0.001									<0.001	<0.001	
Semi-Volatile Organic Compounds (SVOC)																				
2,4,5-Trichlorophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2,4,6-Trichlorophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2,4-Dichlorophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2,4-Dimethylphenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2,4-Dinitrotoluene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2,6-Dinitrotoluene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2-Chloronaphthalene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2-Chlorophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2-Methylnaphthalene		0.166		<0.1			0.197	<0.1	0.33									<0.1	0.258	
2-Methylphenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
2-Nitrophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
4-Chloro-3-methylphenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
4-Methylphenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
4-Nitrophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Bis(2-chloroethoxy)methane		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Bis(2-chloroethyl)ether		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Bis(2-chloroisopropyl)ether		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Bis(2-ethylhexyl)phthalate		<0.5		<0.5			<0.5	<0.5	<0.5									<0.5	<0.5	
Butylbenzyl phthalate		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Carbazole		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Dibenzofuran		<0.1		<0.1			0.222	<0.1	0.834									<0.1	0.213	
Diethyl phthalate		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Dimethyl phthalate		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Hexachlorobenzene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Hexachlorocyclopentadiene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Hexachloroethane		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Isophorone		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
n-Dibutylphthalate		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
n-Dioctylphthalate		<0.5		<0.5			<0.5	<0.5	<0.5									<0.5	<0.5	
Nitrobenzene		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
n-Nitroso-n-dipropylamine		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Pentachlorophenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Perylene		<0.1		<0.1			0.39	<0.1	0.104									0.144	<0.1	
Phenols																				
Phenol		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	
Phenols - Total by HPLC	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Phenols - Total by HPLC	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Other analytes																				
% Stones >10mm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.3	18.8	<0.1
4-Bromophenyl phenyl ether		<0.1		<0.1			<0.1	<0.1	<0.1									<0.1	<0.1	

DRAFT

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	# exceeding GAC	# exceeding T1	Max sample (ID and depth)
Metals and Inorganics											
Chromium	mg/kg	8600	49	1000	4	55	55	0		37	TP213 - 0.2
Mercury	mg/kg	1120	15	35	<0.17	55	39	16		1	TP208 - 0.2
Asbestos											
Asbestos in soil		Detect				54	4	50	4		
Asbestos Matrix (r		Detect				26	4	22	4		
Petroleum Hydrocarbons											
Ali >C8-C1(	mg/kg	2000	78	25	<1	55	21	34		1	TP201 - 1.6
Ali >C10-C1	mg/kg	9700	48	1510	<1	55	22	33		4	TP208 - 0.2
Ali >C12-C1	mg/kg	59000	24	1200	<1	55	37	18		7	TP208 - 0.2
Aro >C10-C	mg/kg	16000	364	290000	<1	55	35	20	2	3	TP208 - 0.2
Aro >C12-C	mg/kg	36000	169	11600	<1	55	49	6		5	TP208 - 0.2
Aro >C16-C	mg/kg	28000		28200	<1	55	50	5	1		TP208 - 0.2
Polycyclic aromatic hydrocarbons											
Benzo(a)ar	mg/kg	170		866	<0.04	57	49	8	1		TP208 - 0.2
Benzo(a)py	mg/kg	77		464	<0.04	57	49	8	1		TP208 - 0.2
Benzo(b)flu	mg/kg	44		953	<0.05	57	50	7	2		TP208 - 0.2
Chrysene	mg/kg	350		1170	<0.06	57	48	9	1		TP208 - 0.2
Dibenzo(ah	mg/kg	3.5		118	<0.04	57	30	27	3		TP208 - 0.2
Fluorene	mg/kg	63000	31	806	<0.01	57	48	9		4	TP208 - 0.2
Naphthaler	mg/kg	1800	76	51300	<0.03	57	50	7	2	3	TP208 - 0.2

DRAFT

Project name	
Project code	
Client name	
Address	
NGR	
Land use	Commercial Scenario
SOM	1%
GAC version	2021_00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
Lab sample ID									22/03419/3	22/03665/1	22/03665/2	22/03665/3	22/03665/4	22/03665/5	22/03665/6	22/03665/7	22/03665/8	22/03722/6	22/03388/46
Client sample ID									BH201	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH203	TP231
Depth to top									5.5	6	7.5	9	10.5	12	13.5	15	16	4	1.4
Depth to bottom																			
Date sampled									06/04/22	11/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22		05/04/22
Metals and Inorganics																			
Arsenic	mg/kg	640		20	5	11	11	0	8	5	20	15	5	7	8	5	7	17	8
Boron (water soluble)	mg/kg	240000		161	<1.0	11	8	3	2.7	3.9	161	145	1.2	<1.0	<1.0	<1.0	1.5	1.3	9
Cadmium	mg/kg	410		1.5	<0.5	11	5	6	1.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	1.1	1
Chromium	mg/kg	8600	49	39	2	11	11	0	39	24	2	4	12	12	11	8	19	17	33
Chromium (hexavalent)	mg/kg	49			<1	11	0	11	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	mg/kg	68000		19	1	11	11	0	11	7	1	1	5	4	3	2	11	19	12
Lead	mg/kg	2300		27	<1	11	10	1	22	14	<1	2	7	6	6	6	12	27	25
Mercury	mg/kg	1120	15	1.46	<0.17	11	7	4	0.44	0.73	<0.17	<0.17	1.1	1.46	1.44	1.15	0.77	<0.17	<0.17
Nickel	mg/kg	980		38	<1	11	10	1	38	24	<1	2	11	11	9	8	19	15	18
Selenium	mg/kg	12000			<1	11	0	11	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	740000		103	<5	11	10	1	103	66	<5	6	33	30	27	23	54	72	80
Asbestos																			
Asbestos in soil						2	0	2	NAD										NAD
Asbestos Matrix (microscope)						1	0	1											-
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg	3200	304		<0.01	11	0	11	<0.01	<0.05	<0.10	<0.10	<0.05	<0.05	<0.01	<0.10	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg	7800	144	0.84	<0.01	11	2	9	<0.01	<0.05	<0.10	0.84	<0.05	0.14	<0.01	<0.10	<0.01	<0.01	<0.01
Ali >C8-C10	mg/kg	2000	78		<1	11	0	11	<1	<10	<100	<500	<10	<500	<1	<100	<1	<1	<1
Ali >C10-C12	mg/kg	9700	48	200	<1	11	2	9	<1	14	200	<500	<10	<500	<1	<100	<1	<1	<1
Ali >C12-C16	mg/kg	59000	24	2480	<1	11	6	5	<1	27	262	2030	28	2480	<1	310	<1	<1	<1
Ali >C16-C21	mg/kg			1410	<1	11	4	7	<1	<10	<100	812	13	1410	<1	202	<1	<1	<1
Ali >C21-C35	mg/kg			1650	<1	11	9	2	1	60	<100	1420	14	1650	1	127	3	<1	14
Ali >C16-C35 calculated	mg/kg	1000000		3060	<1	11	9	2	1	60	<100	2232	27	3060	1	329	3	<1	14
Total Aliphatics	mg/kg			5530	<1	11	10	1	1	101	463	4270	55	5530	1	638	3	<1	14
Aro >C5-C7	mg/kg			269	<0.01	11	9	2	0.04	1.89	54.2	269	0.44	115	0.06	8.03	0.03	<0.01	<0.01
Aro >C7-C8	mg/kg			174	<0.01	11	6	5	<0.01	1.31	28.9	174	0.46	71.1	<0.01	16.8	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg	3500	613	2440	<1	11	6	5	<1	43	478	2320	<10	2440	<1	334	<1	<1	3
Aro >C10-C12	mg/kg	16000	364	80800	<1	11	9	2	10	2020	25400	80800	1400	74800	35	11100	12	<1	<1
Aro >C12-C16	mg/kg	36000	169	151000	<1	11	9	2	33	3110	44100	151000	2840	149000	66	24100	34	<1	<1
Aro >C16-C21	mg/kg	28000		8330	<1	11	9	2	<1	152	2300	8330	128	8190	4	1290	3	<1	1
Aro >C21-C35	mg/kg	28000		1330	<1	11	9	2	<1	46	272	1330	18	1200	3	212	3	<1	4
Total Aromatics	mg/kg			243000	<1	11	10	1	43	5370	72600	243000	4390	236000	108	37000	51	<1	8
TPH (Ali & Aro)	mg/kg			249000	<1	11	10	1	44	5470	73100	249000	4440	241000	109	37700	53	<1	22
BTEX - Benzene	mg/kg	27		269	<0.01	11	9	2	0.04	1.89	54.2	269	0.44	115	0.06	8.03	0.03	<0.01	<0.01
BTEX - Toluene	mg/kg	56000	869	174	<0.01	11	6	5	<0.01	1.31	28.9	174	0.46	71.1	<0.01	16.8	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg	6000	518	3.29	<0.01	11	5	6	<0.01	0.14	3.29	2.89	<0.05	1.1	<0.01	0.47	<0.01	<0.01	<0.01
BTEX - o Xylene	mg/kg	6600	478	12.8	<0.01	11	6	5	<0.01	0.2	2.79	12.8	0.36	8.25	<0.01	4.46	<0.01	<0.01	<0.01
BTEX - m & p Xylene	mg/kg	5900	576	64.9	<0.01	11	7	4	0.03	0.88	14.2	64.9	1.29	39	<0.01	19.5	<0.01	<0.01	<0.01
Fuel oxygenates																			
MTBE	mg/kg	7500			<0.01	11	0	11	<0.01	<0.05	<0.10	<0.10	<0.05	<0.05	<0.01	<0.10	<0.01	<0.01	<0.01
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg	110000		5800	<0.01	11	10	1	2.42	257	2770	5800	81.8	3330	1.41	2750	1.23	<0.01	0.03
Acenaphthylene	mg/kg	110000		135	<0.01	11	7	4	<0.01	3.83	44.3	135	1.13	67.4	<0.01	58.6	<0.01	<0.01	0.01
Anthracene	mg/kg	520000		224	<0.02	11	7	4	<0.02	6.13	101	224	1.63	121	<0.02	115	<0.02	<0.02	0.04
Benzo(a)anthracene	mg/kg	170		10.2	<0.04	11	4	7	<0.04	<0.04	4.27	10.2	<0.04	5.3	<0.04	5.5	<0.04	<0.04	<0.04
Benzo(a)pyrene	mg/kg	77		4.85	<0.04	11	4	7	<0.04	<0.04	1.86	4.85	<0.04	2.29	<0.04	2.54	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	mg/kg	44		6.44	<0.05	11	4	7	<0.05	<0.05	2.26	6.44	<0.05	3.33	<0.05	3.77	<0.05	<0.05	<0.05
Benzo(ghi)perylene	mg/kg	3900		1.4	<0.05	11	3	8	<0.05	<0.05	<0.05	1.4	<0.05	0.64	<0.05	0.76	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	1200		2.07	<0.07	11	3	8	<0.07	<0.07	<0.07	2.07	<0.07	1.05	<0.07	1.41	<0.07	<0.07	<0.07
Chrysene	mg/kg	350		10.4	<0.06	11	4	7	<0.06	<0.06	4.5	10.4	<0.06	5.26	<0.06	5.53	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	mg/kg	3.5			<0.04	11	0	11	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	23000		216	<0.08	11	7	4	<0.08	3.02	102	216	1.06	65.3	<0.08	47.8	<0.08	<0.08	0.1
Fluorene	mg/kg	63000	31	3170	<0.01	11	10	1	0.61	94.2	1400	3170	27.4	1610	0.82	1420	0.83	<0.01	0.03
Indeno(123-cd)pyrene	mg/kg	500		1.8	<0.03	11	4	7	<0.03	<0.03	0.59	1.8	<0.03	0.91	<0.03	1.03	<0.03	<0.03	<0.03
Naphthalene	mg/kg	1800	76	19400	<0.03	11	9	2	4.92	653	7230	19400	223	8420	2.59	6510	<0.03	<0.03	1.92
Phenanthrene	mg/kg	22000		1160	<0.03	11	8	3	0.1	31.9	564	1160	8.53	554	<0.03	513	<0.03	<0.03	0.09
Pyrene	mg/kg	54000		116	<0.07	11	5	6	<0.07	1.78	54.7	116	<0.07	36.9	<0.07	28.4	<0.07	<0.07	<0.07
Total PAH-16MS	mg/kg			30300	<0.08	11	10	1	8.05	1050	12300	30300	345	14200	4.82	11500	2.06	<0.08	2.22
Volatile Organic Compounds (VOC)																			
1,1,1,2-Tetrachloroethane	mg/kg	110			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1,1-Trichloroethane	mg/kg	700			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1,2,2-Tetrachloroethane	mg/kg	270			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1,2-Trichloroethane	mg/kg	89			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1-Dichloroethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1-Dichloroethene	mg/kg	24			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,1-Dichloropropene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,2,3-Trichlorobenzene	mg/kg				<0.003	11	0	11	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003
1,2,3-Trichloropropane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,2,4-Trichlorobenzene	mg/kg				<0.003	11	0	11	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003
1,2,4-Trimethylbenzene	mg/kg	330		14.9	<0.001	11	7	4	0.006	0.444	3.61	0.309	0.06	0.043	<0.005	14.9	<0.005	<0.001	<0.001
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	11	0	11	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002
1,2-Dibromoethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001

								Lab sample ID	22/03419/3	22/03665/1	22/03665/2	22/03665/3	22/03665/4	22/03665/5	22/03665/6	22/03665/7	22/03665/8	22/03722/6	22/03388/46
								Client sample ID	BH201	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH203	TP231
								Depth to top	5.5	6	7.5	9	10.5	12	13.5	15	16	4	1.4
								Depth to bottom											
								Date sampled	06/04/22	11/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22		05/04/22
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
1,2-Dichlorobenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,2-Dichloroethane	mg/kg	0.67			<0.002	11	0	11	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002
1,2-Dichloropropane	mg/kg	3			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,3,5-Trimethylbenzene	mg/kg	330		14.6	<0.001	11	7	4	0.003	0.17	1.35	0.122	0.028	0.036	<0.005	14.6	<0.005	<0.001	<0.001
1,3-Dichlorobenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,3-Dichloropropane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
1,4-Dichlorobenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
2,2-Dichloropropane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
2-Chlorotoluene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
4-Chlorotoluene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
4-Isopropyltoluene	mg/kg			0.073	<0.001	11	1	10	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	0.073	<0.005	<0.001	<0.001
Benzene	mg/kg	27		51.6	<0.001	11	9	2	0.022	3.62	51.6	0.117	2.64	3.3	0.043	32.6	0.044	<0.001	<0.001
Bromobenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Bromochloromethane	mg/kg				<0.005	11	0	11	<0.005	<0.025	<0.125	<0.025	<0.005	<0.005	<0.025	<0.125	<0.025	<0.005	<0.005
Bromodichloromethane	mg/kg				<0.01	11	0	11	<0.01	<0.05	<0.25	<0.05	<0.01	<0.01	<0.05	<0.25	<0.05	<0.01	<0.01
Bromoform	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Bromomethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Carbon Disulphide	mg/kg			0.006	<0.001	11	1	10	<0.001	<0.005	<0.025	<0.005	<0.001	0.006	<0.005	<0.025	<0.005	<0.001	<0.001
Carbon Tetrachloride	mg/kg	2.9			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Chlorobenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Chloroethane	mg/kg	901			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Chloroform	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Chloromethane	mg/kg	1			<0.01	11	0	11	<0.01	<0.05	<0.25	<0.05	<0.01	<0.01	<0.05	<0.25	<0.05	<0.01	<0.01
cis 1,2-Dichloroethene	mg/kg	14			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
cis 1,3-Dichloropropene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Dibromochloromethane	mg/kg				<0.003	11	0	11	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003	<0.015	<0.075	<0.015	<0.003	<0.003
Dibromomethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Dichlorodifluoromethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Dichloromethane	mg/kg	257			<0.005	11	0	11	<0.005	<0.025	<0.125	<0.025	<0.005	<0.005	<0.025	<0.125	<0.025	<0.005	<0.005
Ethylbenzene	mg/kg	6000	518	5.32	<0.001	11	5	6	0.004	0.282	5.32	0.008	<0.001	<0.001	<0.005	1.23	<0.005	<0.001	<0.001
Hexachlorobutadiene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Isopropylbenzene	mg/kg			0.212	<0.001	11	3	8	<0.001	0.027	0.212	<0.005	<0.001	<0.001	<0.005	0.079	<0.005	<0.001	<0.001
m & p Xylene	mg/kg	5900	576	77.3	<0.001	11	7	4	0.014	1.51	33.9	0.37	0.214	0.175	<0.005	77.3	<0.005	<0.001	<0.001
n-Butylbenzene	mg/kg			0.094	<0.001	11	2	9	<0.001	<0.008	0.079	<0.008	<0.001	<0.001	<0.005	0.094	<0.005	<0.001	<0.001
n-Propylbenzene	mg/kg			0.064	<0.001	11	1	10	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	0.064	<0.005	<0.001	<0.001
o-Xylene	mg/kg	6600	478	11.3	<0.001	11	5	6	0.003	<0.216	3.17	<0.068	0.035	0.028	<0.005	11.3	<0.005	<0.001	<0.001
sec-Butylbenzene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Styrene	mg/kg			31.4	<0.001	11	6	5	<0.001	0.63	2.14	0.117	0.097	0.069	<0.005	31.4	<0.005	<0.001	<0.001
tert-Butylbenzene	mg/kg				<0.002	11	0	11	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002	<0.01	<0.05	<0.01	<0.002	<0.002
Tetrachloroethene	mg/kg	24			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Toluene	mg/kg	56000	869	68.2	<0.001	11	8	3	<0.001	2.27	51.2	0.152	0.702	0.612	0.01	68.2	0.02	<0.001	<0.001
trans 1,2-Dichloroethene	mg/kg	21			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
trans 1,3-Dichloropropene	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Trichloroethene	mg/kg	0.7			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Trichlorofluoromethane	mg/kg				<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Vinyl Chloride	mg/kg	1.1			<0.001	11	0	11	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001	<0.005	<0.025	<0.005	<0.001	<0.001
Semi-Volatile Organic Compounds (SVOC)																			
2,4,5-Trichlorophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2,4,6-Trichlorophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2,4-Dichlorophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2,4-Dimethylphenol	mg/kg			39.2	<0.1	11	1	10	<0.1	<5	39.2	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2,4-Dinitrotoluene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2,6-Dinitrotoluene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2-Chloronaphthalene	mg/kg	370	114		<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2-Chlorophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2-Methylnaphthalene	mg/kg			5790	<0.1	11	9	2	3.82	89.6	1270	5790	61.5	4600	3.45	2060	2.74	<0.1	<0.1
2-Methylphenol	mg/kg			16.1	<0.1	11	1	10	<0.1	<5	16.1	<100	<5	<100	<1	<5	<1	<0.1	<0.1
2-Nitrophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
4-Chloro-3-methylphenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
4-Methylphenol	mg/kg			59.8	<0.1	11	1	10	<0.1	<5	59.8	<100	<5	<100	<1	<5	<1	<0.1	<0.1
4-Nitrophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Bis(2-chloroethoxy)methane	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Bis(2-chloroethyl)ether	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Bis(2-chloroisopropyl)ether	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Bis(2-ethylhexyl)phthalate	mg/kg				<0.5	11	0	11	<0.5	<25	<25	<500	<25	<500	<5	<25	<5	<0.5	<0.5
Butylbenzyl phthalate	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Carbazole	mg/kg			32.4	<0.1	11	2	9	<0.1	<5	32.4	<100	<5	<100	<1	12.7	<1	<0.1	<0.1
Dibenzofuran	mg/kg			3270	<0.1	11	9	2	1.82	87	743	1320	63.1	3270	3.08	902	3.7	<0.1	<0.1
Diethyl phthalate	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Dimethyl phthalate	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Hexachlorobenzene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Hexachlorocyclopentadiene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Hexachloroethane	mg/kg	21	8		<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Isophorone	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
n-Dibutylphthalate	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
n-Dioctylphthalate	mg/kg				<0.5	11	0	11	<0.5	<25	<25	<500	<25	<500	<5	<25	<5	<0.5	<0.5
Nitrobenzene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
n-Nitroso-n-dipropylamine	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Pentachlorophenol	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Perylene	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Phenols																			
Phenol	mg/kg	440		43.7	<0.1	11	1	10	<0.1	<5	43.7	<100	<5	<100	<1	<5	<1	<0.1	<0.1
Phenols - Total by HPLC	mg/kg	440		279	<0.2	11	6	5	<0.2	16.1	161	279	8.1	65.5	<0.2	<0.2	2.7	<0.2	<0.2
Phenols - Total by HPLC	mg/kg	440		279	<0.2	11	6	5	<0.2	16.1	161	279	8.1	65.5	<0.2	<0.2	2.7	<0.2	<0.2
Other analytes																			

								Lab sample ID	22/03419/3	22/03665/1	22/03665/2	22/03665/3	22/03665/4	22/03665/5	22/03665/6	22/03665/7	22/03665/8	22/03722/6	22/03388/46
								Client sample ID	BH201	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH203	TP231
								Depth to top	5.5	6	7.5	9	10.5	12	13.5	15	16	4	1.4
								Depth to bottom											
								Date sampled	06/04/22	11/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22	12/04/22		05/04/22
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
% Stones >10mm	% w/w				<0.1	11	0	11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenyl ether	mg/kg				<0.1	11	0	11	<0.1	<5	<5	<100	<5	<100	<1	<5	<1	<0.1	<0.1

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Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	# exceeding GAC	# exceeding T1	Max sample (ID and depth)
Petroleum Hydrocarbons											
Ali >C10-C12	mg/kg	9700	48	200	<1	11	2	9		4	BH202 - 7.5
Ali >C12-C16	mg/kg	59000	24	2480	<1	11	6	5		6	BH202 - 12
Aro >C8-C10	mg/kg	3500	613	2440	<1	11	6	5		2	BH202 - 12
Aro >C10-C12	mg/kg	16000	364	80800	<1	11	9	2	3	6	BH202 - 9
Aro >C12-C16	mg/kg	36000	169	151000	<1	11	9	2	3	6	BH202 - 9
BTEX - Benzene	mg/kg	27		269	<0.01	11	9	2	3		BH202 - 9
Polycyclic aromatic hydrocarbons											
Fluorene	mg/kg	63000	31	3170	<0.01	11	10	1		5	BH202 - 9
Naphthalene	mg/kg	1800	76	19400	<0.03	11	9	2	4	6	BH202 - 9
Volatile Organic Compounds (VOC)											
Benzene	mg/kg	27		51.6	<0.001	11	9	2	2		BH202 - 7.5

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APPENDIX K
GQRA DATA SCREENING TABLES – WATERS INCLUDING PROJECT CRONUS

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Project / Site name: 315678 P-Fields

Lab Sample Number								1846695	1846696	1846697	1846705	1846706	1846707
Sample Reference								BH315	BH301	BH324	BH331	BH322	BH317
Sample Number								(WATER)	(WATER)	(WATER)	(WATER)	(WATER)	(WATER)
Depth (m)								1.58	1.55	1.42	3.82	3.50	1.37
Date Sampled								02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024
Time Taken													
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	**RSK EQS or relevant DWS**	**No. > GAC**	**Maximum**	**Minimum (excluding LMDL)**						
General Inorganics													
pH	pH Units	N/A	ISO 17025	-	-	8.6	7.7	8.4	8.5	8.6	8.1	8.0	7.7
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	-	-	0	0						
Total Cyanide	µg/l	10	ISO 17025	-	-	0	0						
Complex Cyanide	µg/l	10	ISO 17025	-	-	0	0						
Free Cyanide	µg/l	10	ISO 17025	1	0	0	0						
Thiocyanate as SCN	µg/l	200	ISO 17025	-	-	0	0						
Sulphate as SO3	µg/l	45	ISO 17026	-	-	0	0						
Sulphate as SO4	mg/l	0.045	ISO 17025	-	-	0	0						
Elemental Sulphur	mg/l	0.02	NONE	-	-	0	0						
Sulphide	µg/l	5	NONE	-	-	0	0						
Chloride	mg/l	0.15	ISO 17025	-	-	0	0						
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	386	0	0	0						
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	-	-	0	0						
Nitrate as N	mg/l	0.01	ISO 17025	-	-	0	0						
Nitrate as NO3	mg/l	0.05	ISO 17025	-	-	0	0						
Alkalinity as CaCO3	mg/l	3	ISO 17025	-	-	0	0						
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	-	-	0	0						
Total Suspended Solids	mg/l	2	ISO 17025	-	-	0	0						
Total Phenols													
Total Phenols (HPLC)	µg/l	3.5	NONE	7.7	0	0	0						
Speciated PAHs													
Naphthalene	µg/l	0.01	ISO 17025	-	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Acenaphthylene	µg/l	0.01	ISO 17025	-	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Acenaphthene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluorene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Phenanthrene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anthracene	µg/l	0.01	ISO 17025	-	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluoranthene	µg/l	0.01	ISO 17025	-	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Pyrene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(a)anthracene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chrysene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(a)pyrene	µg/l	0.01	ISO 17025	-	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total PAH													
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	-	-	0	0						
Heavy Metals / Metalloids													
Calcium (dissolved)	mg/l	0.012	ISO 17025	-	-	0	0						
Chromium (hexavalent)	µg/l	5	ISO 17025	3.4	0	0	0						
Chromium (III)	µg/l	1	NONE	4.7	0	0	0						
Iron (dissolved)	mg/l	0.004	ISO 17025	1	0	0	0						
Germanium (dissolved)	µg/l	1	NONE	-	-	0	0						
Magnesium (dissolved)	mg/l	0.005	ISO 17025	-	-	0	0						
Potassium (dissolved)	mg/l	0.025	ISO 17025	-	-	0	0						
Sodium (dissolved)	mg/l	0.01	ISO 17025	-	-	0	0						
Arsenic (dissolved)	µg/l	0.15	ISO 17025	-	0	37	3.3	10	27	37	6.7	3.3	6.6
Cadmium (dissolved)	µg/l	0.02	ISO 17025	-	0	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Chromium (dissolved)	µg/l	0.2	ISO 17025	-	0	0.67	0.5	0.5	0.5	0.67	0.5	0.5	0.5
Cobalt (dissolved)	µg/l	0.2	ISO 17025	-	-	0	0						
Copper (dissolved)	µg/l	0.5	ISO 17025	-	0	1.2	0.5	0.63	0.94	1.2	0.5	0.5	0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	-	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.01	6	0.09	0.05	0.05	0.05	0.09	0.05	0.05	0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	-	-	0	0						
Nickel (dissolved)	µg/l	0.5	ISO 17025	4	0	1.2	0.5	0.5	0.5	1.2	0.5	0.5	0.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	-	-	0	0						
Vanadium (dissolved)	µg/l	0.2	ISO 17025	-	-	0	0						
Zinc (dissolved)	µg/l	0.5	ISO 17025	10.9	0	7.2	2.5	5.3	5.8	2.5	7.2	5.0	7.0
Monoaromatics & Oxygenates													
Benzene	µg/l	1	ISO 17025	10	0	0	0						
Toluene	µg/l	1	ISO 17025	74	0	0	0						
Ethylbenzene	µg/l	1	ISO 17025	300	0	0	0						
p & m-xylene	µg/l	1	ISO 17025	30	0	0	0						
o-xylene	µg/l	1	ISO 17025	30	0	0	0						
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	15	0	< 1.0	< 1.0						
Petroleum Hydrocarbons													
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	15000	0	< 1.0	< 1.0						
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	15000	0	< 1.0	< 1.0						
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	300	0	< 1.0	< 1.0						
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	300	0	< 10	< 10						
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	300	0	< 10	< 10						
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	-	-	< 10	< 10						
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	-	-	< 10	< 10						
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	-	-	< 10	< 10						
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	10	0	0	0						
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	700	0	0	0						
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	300	0	0	0						
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	90	0	0	0						
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	90	0	0	0						
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	90	0	0	0						
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	90	0	< 10	< 10						
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	-	-	0	0						

APPENDIX L
GQRA DATA SCREENING TABLES – GAS INCLUDING PROJECT CRONUS

DRAFT

Calculations of borehole hazardous gas flow rate in accordance with BS8485

Project No.:	315768
Client:	TATA Steel UK
Site:	P-Fields

In accordance with BS8485 Section 6.3.1 the data presented below are calculations of borehole hazardous gas flow rates (Q_{hg}).

The Q_{hg} can then be used, along with a robust conceptual site model and review of the data collected, to designate a site characteristic (or zone) gas screening value (GSV).

GSVs are used to characterise the potential risk and inform mitigation measures where appropriate.

The assessment below presents calculated Q_{hg} values and compares them directly to Characteristic Situations as presented in BS8485 Table 2.

The ultimate site characteristic GSV (for the site or for individual zones) to inform risk assessment and mitigation measures is detailed in the body of the report, and may be different to the individual calculations below.

The calculations below use peak concentrations and steady state flow to calculate the Q_{hg}.

Characteristic Situation	Hazard potential	GSV
1	Very Low	<0.07
2	Low	<0.7
3	Moderate	<3.5
4	Moderate to High	<15
5	High	<70
6	Very High	>=70

British Standard Institution (BSI) (2019), 'BS 8485:2015+A1:2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

KEY	
Qhg	Borehole hazardous gas flow rate (steady state flow * (peak concentration / 100))
GSV	Gas Screening Value
	GSV / Q_{hg} indicates very low hazard potential
	GSV / Q_{hg} indicates low to moderate hazard potential
	GSV / Q_{hg} indicates moderate or greater hazard potential
	Data exceeds either 1% CH_4, 5% CO_2 or 70 L/hr flow (see BS8485 Table 2)

SUMMARY OF Qhg VALUES PER BOREHOLE, PER MONITORING ROUND

BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	O_2 min %v/v	Flow SS l/hr	Baro mbar	Q_{hg} CH_4	Q_{hg} CO_2	CS No.
BH317	01/08/2024	10.7	9.1	0.3	0.3	14.5	0.7	1011	0.07	0.00	CS2
	09/08/2024	10	9.3	0.2	0.2	14.9	0.7	1014	0.07	0.00	CS1
	30/09/2024	6.2	6.2	0.2	0.2	15.8	0	986	0.00	0.00	CS1
	29/10/2024	94	27.7	1.8	0.6	0.1	0	1025	0.00	0.00	CS1
	14/11/2024	94.1	94.1	2	2	0.2	0	1032	0.00	0.00	CS1
BH324	01/08/2024	0.2	0.2	0.1	0.1	19.5	0.5	1011	0.00	0.00	CS1
	09/08/2024	0.2	0.2	0.1	0.1	19.5	0.4	1014	0.00	0.00	CS1
	30/09/2024	0	0	0.1	0.1	20.1	0	986	0.00	0.00	CS1
	29/10/2024	0.1	0	0	0	20.6	0	1023	0.00	0.00	CS1
	14/11/2024	0.4	0	0.1	0	20.7	0	1032	0.00	0.00	CS1

WORST-CASE Qhg VALUES PER BOREHOLE

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No.
BH317		94.1	94.1	2	2	0.1	0.7		0.66	0.01	CS2
BH324		0.4	0.2	0.1	0.1	19.5	0.5		0.00	0.00	CS1

WORST-CASE Qhg CHECK FOR SITE (BS8485 Section 6.3.7.4)

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No
ALL		94.1	94.1	2	2	0.1	0.7		0.66	0.01	CS2

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Project No.:	315768
Client:	TATA Steel UK
Site:	P-Fields

In accordance with BS8485 Section 6.3.1 the data presented below are calculations of borehole hazardous gas flow rates (Q_{hg}).

The Q_{hg} can then be used, along with a robust conceptual site model and review of the data collected, to designate a site characteristic (or zone) gas screening value (GSV).

GSVs are used to characterise the potential risk and inform mitigation measures where appropriate.

The assessment below presents calculated Q_{hg} values and compares them directly to Characteristic Situations as presented in BS8485 Table 2.

The ultimate site characteristic GSV (for the site or for individual zones) to inform risk assessment and mitigation measures is detailed in the body of the report, and may be different to the individual calculations below.

The calculations below use peak concentrations and steady state flow to calculate the Q_{hg}.

Characteristic Situation	Hazard potential	GSV
1	Very Low	<0.07
2	Low	<0.7
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4	Moderate to High	<15
5	High	<70
6	Very High	>=70

British Standard Institution (BSI) (2019), 'BS 8485:2015+A1:2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

KEY	
Qhg	Borehole hazardous gas flow rate (steady state flow * (peak concentration / 100))
GSV	Gas Screening Value
	GSV / Q_{hg} indicates very low hazard potential
	GSV / Q_{hg} indicates low to moderate hazard potential
	GSV / Q_{hg} indicates moderate or greater hazard potential
	Data exceeds either 1% CH_4, 5% CO_2 or 70 L/hr flow (see BS8485 Table 2)

SUMMARY OF Qhg VALUES PER BOREHOLE, PER MONITORING ROUND

BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	O_2 min %v/v	Flow SS l/hr	Baro mbar	Q_{hg} CH_4	Q_{hg} CO_2	CS No.
BH324	01/08/2024	0.2	0.2	0.1	0.1	19.5	0.5	1011	0.00	0.00	CS1
	09/08/2024	0.2	0.2	0.1	0.1	19.5	0.4	1014	0.00	0.00	CS1
	30/09/2024	0	0	0.1	0.1	20.1	0	986	0.00	0.00	CS1
	14/11/2024	0.4	0	0.1	0	20.7	0	1032	0.00	0.00	CS1

WORST-CASE Qhg VALUES PER BOREHOLE

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No.
BH324		0.4	0.2	0.1	0.1	19.5	0.5		0.00	0.00	CS1

WORST-CASE Qhg CHECK FOR SITE (BS8485 Section 6.3.7.4)

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No
ALL		0.4	0.2	0.1	0.1	19.5	0.5		0.00	0.00	CS1

DRAFT

Calculations of borehole hazardous gas flow rate in accordance with BS8485

Project No.:	315075
Client:	Tata Steel UK Ltd
Site:	Project Cronus

In accordance with BS8485 Section 6.3.1 the data presented below are calculations of borehole hazardous gas flow rates (Q_{hg}).

The Q_{hg} can then be used, along with a robust conceptual site model and review of the data collected, to designate a site characteristic (or zone) gas screening value (GSV).

GSVs are used to characterise the potential risk and inform mitigation measures where appropriate.

The assessment below presents calculated Q_{hg} values and compares them directly to Characteristic Situations as presented in BS8485 Table 2.

The ultimate site characteristic GSV (for the site or for individual zones) to inform risk assessment and mitigation measures is detailed in the body of the report, and may be different to the individual calculations below.

The calculations below use peak concentrations and steady state flow to calculate the Q_{hg}.

Characteristic Situation	Hazard potential	GSV
1	Very Low	<0.07
2	Low	<0.7
3	Moderate	<3.5
4	Moderate to High	<15
5	High	<70
6	Very High	>=70

British Standard Institution (BSI) (2019), 'BS 8485:2015+A1:2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

KEY	
Qhg	Borehole hazardous gas flow rate (steady state flow * (peak concentration / 100))
GSV	Gas Screening Value
	GSV / Q_{hg} indicates very low hazard potential
	GSV / Q_{hg} indicates low to moderate hazard potential
	GSV / Q_{hg} indicates moderate or greater hazard potential
	Data exceeds either 1% CH_4, 5% CO_2 or 70 L/hr flow (see BS8485 Table 2)

SUMMARY OF Qhg VALUES PER BOREHOLE, PER MONITORING ROUND

BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	O_2 min %v/v	Flow SS l/hr	Baro mbar	Q_{hg} CH_4	Q_{hg} CO_2	CS No.
BH01	16/02/2022	85.4	85	6	5.8	0	2.3	1	1.96	0.14	CS3
	17/02/2022	89.2	38.8	6.2	3.1	0.6	0.1	1013	0.09	0.01	CS2
	22/02/2022	91.3	33.1	3.8	1.7	0.4	0.1	1019	0.09	0.00	CS2
	22/02/2022	91.5	91	6.6	6.6	0	1.6	1019	1.46	0.11	CS3
BH02	17/02/2022	16.2	0.6	0.8	0.1	9.2	1	1014	0.16	0.01	CS2
BH03	16/02/2022	3.6	1	0.6	0.2	18.4	0.1	1001	0.00	0.00	CS1
	16/02/2022	82.4	38.6	6.5	3.5	1.2	0.3	1002	0.25	0.02	CS2
BH3 DEEP	04/02/2022	83.3	51	5.9	4.4	1.2	0.6	1013	0.50	0.04	CS2
BH3 SHALLOW	04/02/2022	2.7	1	1.7	0.6	16.8	0	1013	0.00	0.00	CS1
BH04	15/02/2022	0.1	0.1	0.3	0.3	20.8	0.1	1007	0.00	0.00	CS1
	15/02/2022	0	0	0.3	0.1	20.7	0	1006	0.00	0.00	CS1
BH4 DEEP	20/01/2022	0	0	0.1	0.1	20.3	0	1040	0.00	0.00	CS1
BH4 SHALLOW	20/01/2022	0	0	0.1	0	20.6	0	1040	0.00	0.00	CS1
BH05	16/02/2022	4.3	1.7	0.1	0	18.5	0	1000	0.00	0.00	CS1
	16/02/2022	53.2	26	2.2	1	6.3	0	1000	0.00	0.00	CS1
	22/02/2022	2	1.1	0.1	0	19	0	1020	0.00	0.00	CS1
	22/02/2022	53.8	25.8	2.1	0.9	7.1	0.1	1020	0.05	0.00	CS1
	04/03/2022	1.1	0.7	0.1	0	18.6	0	1024	0.00	0.00	CS1
BH08	17/02/2022	91.3	38.1	1	0.9	0.9	0.1	1014	0.09	0.00	CS2
BH10	04/02/2022	0	0	0.7	0.2	19.6	0	1012	0.00	0.00	CS1
	17/02/2022	0	0	0.5	0.2	20.1	0.2	1014	0.00	0.00	CS1
BH11	04/02/2022	0	0	0.7	0.2	20.8	0	1012	0.00	0.00	CS1
	17/02/2022	0	0	0.2	0.1	20.8	0.2	1014	0.00	0.00	CS1
BH12	15/02/2022	36.2	13	7.6	2.8	5.4	0	1006	0.00	0.00	CS1
	15/02/2022	0.5	0.5	0.2	0.2	19.6	0	1014	0.00	0.00	CS1
	04/03/2022	0.3	0.3	0.2	0.2	18.5	-0.3	1024	0.00	0.00	CS1
	04/03/2022	30.7	12.1	4.9	1.9	7.7	-0.2	1024	-0.06	-0.01	CS1
BH12 DEEP	20/01/2022	36.6	14.5	6.9	2.8	4.8	0	1040	0.00	0.00	CS1
BH12 SHALLOW	20/01/2022	0.2	0.2	0.2	0.2	17.9	0	1040	0.00	0.00	CS1
BH13	04/02/2022	0.2	0.2	0.4	0.4	20.3	0.2	1012	0.00	0.00	CS1
	17/02/2022	0.2	0.2	0.4	0.3	19.5	1	1014	0.00	0.00	CS1

WORST-CASE Qhg VALUES PER BOREHOLE

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No.
BH01		91.5	91	6.6	6.6	0	2.3		2.10	0.15	CS3
BH02		16.2	0.6	0.8	0.1	9.2	1		0.16	0.01	CS2
BH03		82.4	38.6	6.5	3.5	1.2	0.3		0.25	0.02	CS2
BH3 DEEP		83.3	51	5.9	4.4	1.2	0.6		0.50	0.04	CS2
H3 SHALLOW		2.7	1	1.7	0.6	16.8	0		0.00	0.00	CS1
BH04		0.1	0.1	0.3	0.3	20.7	0.1		0.00	0.00	CS1
BH4 DEEP		0	0	0.1	0.1	20.3	0		0.00	0.00	CS1
H4 SHALLOW		0	0	0.1	0	20.6	0		0.00	0.00	CS1
BH05		53.8	26	2.2	1	6.3	0.1		0.05	0.00	CS1
BH08		91.3	38.1	1	0.9	0.9	0.1		0.09	0.00	CS2
BH10		0	0	0.7	0.2	19.6	0.2		0.00	0.00	CS1
BH11		0	0	0.7	0.2	20.8	0.2		0.00	0.00	CS1
BH12		36.2	13	7.6	2.8	5.4	0		0.00	0.00	CS1
BH12 DEEP		36.6	14.5	6.9	2.8	4.8	0		0.00	0.00	CS1
I12 SHALLOW		0.2	0.2	0.2	0.2	17.9	0		0.00	0.00	CS1
BH13		0.2	0.2	0.4	0.4	19.5	1		0.00	0.00	CS1

WORST-CASE Qhg CHECK FOR SITE (BS8485 Section 6.3.7.4)

		Maximum CH_4		Maximum CO_2				Baro	Maximum Q_{hg}		
BH NO.	DATE	CH_4 peak %v/v	CH_4 SS %v/v	CO_2 peak %v/v	CO_2 SS %v/v	Min O_2	Max SS Flow	mbar	CH_4	CO_2	CS No
ALL		91.5	91	7.6	6.6	0	2.3		2.10	0.17	CS3