ARCADIS Design & Consultancy for natural and built assets

METALS PROCESSING AREA, FORMER STEELWORKS, REDCAR

Phase II Environmental Site Assessment (Shallow Soils)

South Tees Development Corporation

REPORT NO. 10035117-AUK-XX-XX-RP-ZZ-0125-01-MRA_Shallow_Soils

AUGUST 2020

Incorporating

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Metals Processing Area, Former Steelworks Redcar, Environmental Site Assessment

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1 Introduction

1.1 Project Background

The Metals Processing Area (MPA) (the site) is a land parcel situated at the Former Redcar Steelworks located within the Redcar, Lackenby, Grangetown and South Bank conurbations of the Borough of Redcar & Cleveland, within the industrial area generally known as 'South Tees'. Figure 1 in Appendix A provides details of the site location.

The "South Tees Regeneration Master Plan" dated November 2019 has been developed detailing the industrial-led regeneration of the Former Redcar Steelworks into a world class employment-generating zone and economic growth enabler for the Tees Valley.

The Masterplan has identified the MPA as being located within the South Bank Zone. The site is a priority development area and Arcadis understands this report is to be used within a detailed planning application for "*Demolition of existing buildings/ structures and engineering operations associated with ground remediation and preparation of land for development*".

1.2 Contract Details

Arcadis (UK) Limited (Arcadis) was appointed by South Tees Development Corporation (STDC) to oversee and manage a ground investigation undertaken by Allied Exploration and Geotechnics Limited (AEG) and to provide consultancy advice on the redevelopment of the site.

The work was carried out in accordance with the "*Prairie Site, Warrenby Site and the SLEMS Ground Investigations Provision of Consultancy Services* Agreement between Tees Valley Combined Authority and Arcadis.

The scope of works was defined by Arcadis, on behalf of STDC, as presented in "Metals Recovery Area – PM and Technical Support (updated)" dated 1st July 2020. At the request of STDC the investigation was split into two phases, an initial investigation of shallow soils (this phase) and a subsequent investigation of deeper soils and groundwater to be conducted when further certainty on redevelopment scenarios has been confirmed.

1.3 Projects Aims and Objectives

As technical consultant, our specific objectives of this phase of works were to:

- Manage and technically supervise the site works, undertaken by AEG, on behalf of STDC;
- Direct the site works to ensure compliance by the ground investigation contractors with existing site management protocols and procedures;
- Specify the requirements for laboratory analysis;
- Analyse the results of ground investigations; and,
- Prepare interpretative technical reports, namely;
    - Prepare an interpretative technical report including an assessment of identified environmental risks associated with the site considering the findings of the initial shallow soils investigation (*this document*).
    - Prepare an interpretative technical report including an assessment of identified environmental risks associated with the site considering the findings of the subsequent deep soils and groundwater investigation (*to be reported under a separate cover*),

1.4 Report Aims

The aim of this environmental site assessment report is to use the available information to develop a conceptual site model (CSM) for the site and identify the potential significance of any source-pathway-receptor (SPR) linkages identified by the CSM in relation to shallow soils at the site. Where significant, and potentially complete pollutant linkages are identified, suitable risk management/remediation recommendations are to be made.

1.5 Reliability / Limitations of Information

A complete list of Arcadis Study Limitations is presented in Appendix B.

It should be noted that ground conditions between exploratory holes may vary from those identified during this ground investigation; any design should take this into consideration.

2 Site Conceptualisation

No specific Phase I Environmental Site Assessment (ESA) exists for the site. However, the northern portion of the site is covered by the following document supplied by STDC:

- TS4 South Bank – Phase 1 Geo-Environmental Desk Study, prepared by CH2M Hill for the Homes and Communities Agency, report ref. 678079_TS4_002 dated August 2017 and marked Final.

The site is also considered in:

- South Industrial Zone ES - Vol 2 - Chapter H (Ground Conditions and Remediation), prepared by Arcadis for STDC and dated July 2020.

In addition, STDC also supplied the following documents:

- Former Steelworks Land, South Tees Outline Remedial Strategy, Prepared for South Tees Development Corporation by Wood, Ref 41825-wood-XX-XX-RP-OC-0001_S0_P01 dated 25th June 2019 [Wood 2019]

This section incorporates a review of the above reports, publicly available records, and data collected as part of the site investigation works by AEG. At the time of issue AEG's final factual ground investigation report [AEG, in press] was not available for review. This report has been completed based on **draft data** and will be updated when the final ground investigation factual report is available.

The scope completed by AEG included:

- 31no. trial pits excavated by a 30 tonne tracked excavator, to a target depth of 4.5m, refusal, or until natural material is encountered; and,
- Soil sampling for in-field assessment and submission to Derwentside Environmental Testing Services (DETS), AEG in-house Geotechnical Laboratory and Thomas Research Services (TRS) laboratories for chemical and geotechnical testing;

2.1 Site Location

The MPA is located in the south west of the Former Redcar Steelworks and is bound by land occupied by MGT Teesside to the north, PD Ports to the east, the SLEMs and Cleveland Channel to the South and the wider south bank site to the west. The site elevation generally ranges from approximately 7m to 12m above Ordnance Datum (AOD).

The centre of site is located at National Grid Reference: 454600, 522600; and an indicative post code for the site is TS10 5QW.

A Site Location Plan is presented on Figure 1 within Appendix A.

2.2 Site Description

The site is approximately 21.5 hectares in size and approximately rectangular in shape tapering to the south. The southern boundary is marked by a rapid change in level to the Cleveland Channel (approx. 2 to 3m AOD) with the SLEMs facility beyond. The Cleveland Channel discharges into the Lackenby Channel which runs parallel to the eastern boundary of the site. Both the Cleveland and Lackenby channels are tidal and discharge into the River Tees a short distance north of the site.

PD Ports facilities are located to the east (beyond the Cleveland Channel) and include a utility corridor, port buildings and wharf facilities. The area north of the site is currently under development as a biomass power station operated by MGT Teesside. A third party landfill (land rise) Highfield Environmental is located to the east of the site, the landfill is understood to accept wastes types including domestic and special.

At the time of the siteworks the site is covered by stockpiles of aggregates from the steelmaking process, which are being processed by a contractor. There are infrequent concrete structures including a large viewing platform in the centre of the site, south of which are four buildings. With the exception of the viewing platform and the stockpiles the area is generally level and covered with aggregates of steel biproducts.

2.3 Site History

Based on a review of the documents in 2.1, the site was originally sand and mud associated with the Tees Estuary. The site was reclaimed from the Tees between 1896 and 1938 by the assumed deposition of waste products from the steelmaking process. A number of small structures and a gun emplacement are shown on mapping from 1952 along with railway lines from 1959. The site is shown in its approximate current layout from 1991.

The site is understood to have been leased from Tata Steel to Harsco who undertook “recycling materials from iron and steelmaking for recovery of metals” under permit PP3338MT.

2.4 Geology

Review of the British Geological Survey (BGS) data suggests that the majority of the site is underlain by Tidal Flat Deposits predominantly comprising sand and clay This is anticipated to be underlain by Glaciolacustrine Deposits and Glacial Till based on data from historic boreholes in the vicinity of the MPA.

Bedrock beneath the site is anticipated to comprise Mercia Mudstone. Excerpts from the BGS mapping data are presented as Figure 2 below and in Appendix A.

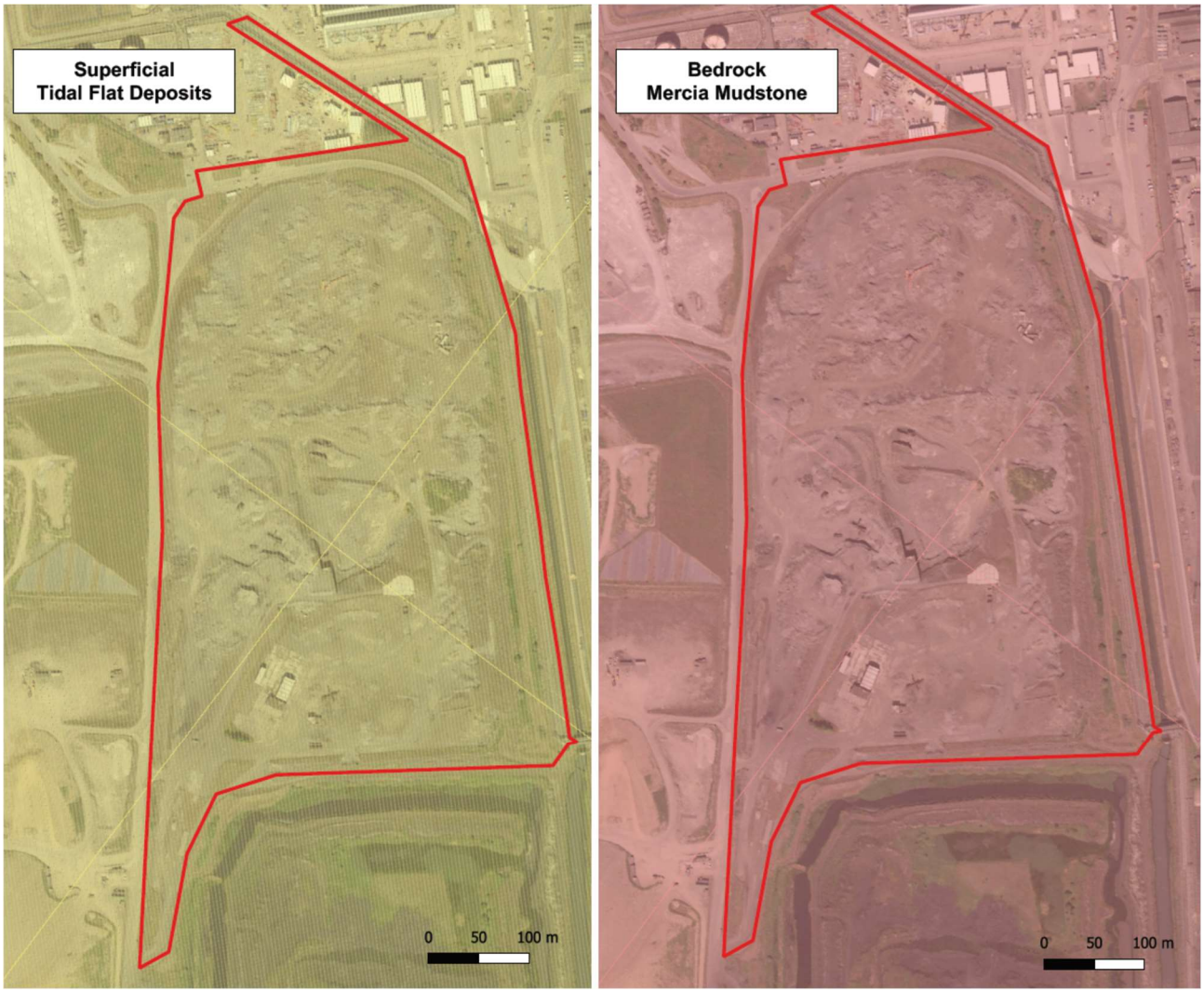


Figure 2: Excerpts from BGS Mapping

The following table provides an overview of the site-specific geology encountered during the investigation across the site. The full geology encountered is provided on the **draft** trial pit logs within Appendix C.

Interpreted Unit	Minimum Basal Depth (m bgl)	Maximum Basal Depth (m bgl)	Comment
Made Ground	>4.5	>4.5 (base not proved at majority of locations)	Site surfacing comprised a grey aggregate of slightly sandy gravel of slag. The Made Ground in all locations with the exception of MPA_AUK_TP102 comprised slag rich deposits which contained 75 – 100% recovered as gravel and cobbles and varying quantities of ash, and clinker. Slag was vesicular and noted to be predominantly grey but with green, brown, purple and white colouration and or precipitates on the surface. Occasional iron rich deposits were also noted on the slag. Fragments of concrete and metal were noted within the deposits. The slag deposits were well bound and potentially partially fused across the Made Ground which required significant effort to excavate. More humic material was noted at the surface in MPA_AUK_TP102, underlain by slag rich deposits and a concrete slab obstruction.
Tidal Flat Deposits (Secondary A Aquifer)	N/A	N/A	Not encountered
Glaciolacustrine Deposits	N/A	N/A	Not encountered
Glacial Till	N/A	N/A	Not encountered
Mercia Mudstone (Secondary (B) Aquifer)	N/A	N/A	Not encountered

Made Ground was encountered in all intrusive locations and proven to a thickness of up to 4.5m. The base of the Made Ground was not proven in any of the 31 trial pits, therefore, greater thickness of made ground material exists across the site.

Two types of Made Ground were noted:

- **Slag-dominant material:** Generally ranging from gravel to boulder size fragments of slag. The slag material generally ranged from light grey to dark grey/black in colour, but a wide range of other colours were also noted including blue, brown, green, and purple. Discolouration of the slag surface was also noted with white crystallisation/discolouration often noted on the outer surface along with occasional iron rich areas. Slag is estimated to comprise 75 - 100% of the soil matrix, weighted towards the latter.
- **Granular Made Ground:** Identified in 5 locations only (MPA_AUK_TP101, MPA_AUK_TP110, MPA_AUK_TP119, MPA_AUK_TP127, and MPA_AUK_TP128) and was described as a sandy fine to coarse gravel with many cobbles. Gravel and cobbles include brick, concrete, wood and other demolition materials, slag was not the dominant constituent although often still present within the soil matrix. Although present in the locations listed above the pits were dominated by slag rich materials.

2.5 Hydrogeology

Groundwater was not encountered during the investigation. The hydrogeological map for the area (Sheet 1: Hydrogeological Map of England and Wales, 1:625,000 scale) indicates that groundwater beneath the site within the Mercia Mudstone Formation is at an elevation of approximately 0m AOD with groundwater elevation contours indicating a flow to the north. The site is not located within a Groundwater Source Protection Zone

and given the proximity to the Tees Estuary groundwater is likely to be tidally influenced and potentially subject to saline intrusion.

2.6 Hydrology

The closest surface water features to the site are the Cleveland Channel which forms the southern boundary of the site and the Lackenby Channel which is located approximately 40m to the east of the site. The Cleveland Channel flows into the Tees via the Lackenby Channel. Both the Cleveland and Lackenby channels are tidally influenced.

2.7 Potential Areas of Concern

Based on a review of the documents listed in Section 2.1 above and the DEFRA Magic Website https://magic.defra.gov.uk/MagicMap.aspx accessed 3rd August 2020 the following potential areas of concern (Environmental PAOC) have been identified for the site and are summarised on Figure 3 below and in Appendix A.

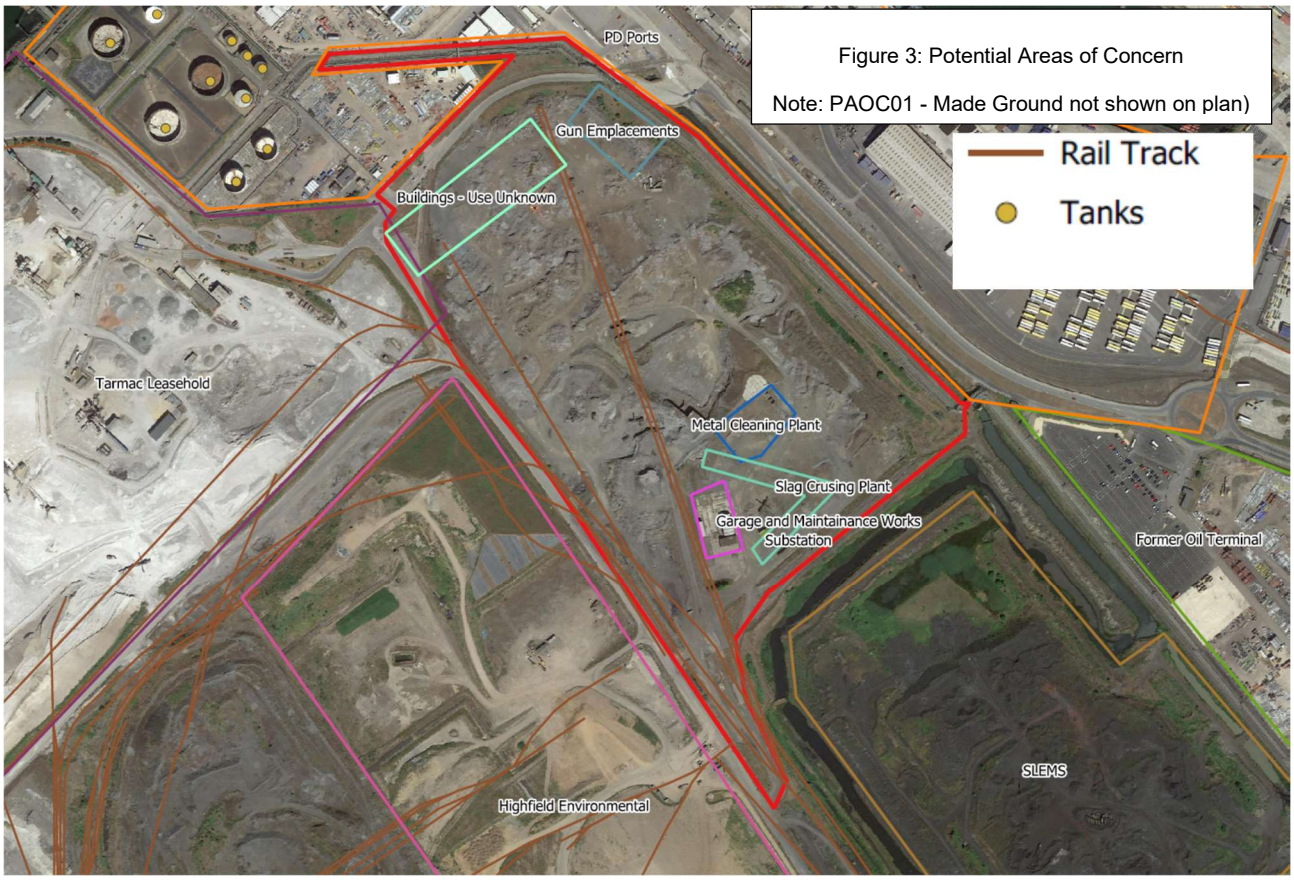


Figure 3: Potential Areas of Concern

Note: PAOC01 - Made Ground not shown on plan)

The significance of these potential sources is considered further in Section 3.2.

3 Environmental Site Condition Assessment

3.1 Introduction

This section summarises the findings of Section 2 in the form of an environmental (land contamination) CSM.

The CSM allows a qualitative evaluation of potentially active “pollutant linkages” at the site; these being plausible scenarios whereby a contamination source is connected to a possible receptor by one or more pathways:

- Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the site;
- Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways; and
- Potential receptors of contamination: these include present and/or future land users, ecological systems, water resources and property.

The potential significance of these source-pathway-receptor linkages will be assessed in the Section 4.

3.2 Contamination Sources

Based on the information reviewed in this report the following potential contamination sources have been identified:

3.2.1 On-Site

On-site sources have been identified associated with Made Ground and potential contaminants of concern (CoC) associated with former site uses. The table below summarises the most significant potential on-site sources and the primary contaminants associated with these sources. The identified CoC are considered to represent those likely to be present from other less significant sources.

Potential On-Site sources	Primary Contaminants
Made Ground including slag deposits	Metals (including heavy metals), polycyclic aromatic hydrocarbons (PAHs), cyanide, thiocyanate, sulphate, pH, ammonia, and asbestos. Potential source of ground gas if found to be have a high organic content.
Substation	Hydrocarbons, asbestos, and polychlorinated biphenyls (PCBs)
Buildings of unknown use	Metals, and asbestos
Gun emplacement	Unexploded ordnance
Garage and maintenance workshop	Metals, asbestos, TPH, PAH, acids and bases, VOCs, SVOCs, pH
Slag crushing and metal cleaning plant	Metals (including heavy metals), cyanide, thiocyanate, sulphate, pH, and ammonia.
Railway lines and sidings	Metals, asbestos, TPH, PAH, VOC, SVOC, PCB, and pH.

3.2.2 Off-Site

Potentially contaminative land uses have been identified in the vicinity of the site, the most pertinent of which are presented in the table with potentially associated contaminants:

Potential On-Site sources	Primary Contaminants
Highfield Environmental	Metals (including heavy metals), PAH, cyanide, thiocyanate, sulphate, pH, ammonia, asbestos, total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), semi volatile organic compounds (SVOC), and ground gas.
SLEMS / CLE9 – The SLEMS facility processes BOS Oxide. BOS material and other steelmaking biproducts are stockpiled on site. The SLEMS is understood to be located on top of the former CLE9 landfill.	Metals (including heavy metals), PAH, cyanide, thiocyanate, sulphate, pH, ammonia, asbestos, total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), semi volatile organic compounds (SVOC), and ground gas if found to have a high organic content.
Former Oil Terminal and tanks	Metals, asbestos, TPH, PAH, acids and bases, VOCs, SVOCs, pH and PCBs
PD Ports and Tarmac leasehold	Metals, asbestos, TPH, PAH, acids and bases, VOCs, SVOCs, pH and PCBs

Contaminants of concern in green are of generally low environmental mobility and have therefore been discounted for the sources in question based on the distance from the site.

3.3 Contamination Sources Assessment

The contamination assessment will be undertaken in two ways – contaminants that are dependent upon the material composition (e.g. metals, inorganics, asbestos and PAHs) will be assessed separately for each material type and contaminants that are associated with a particular point source (e.g. hydrocarbons) will be assessed based on the likely source. This report is focused on shallow soils and does not fully assess the risks to Controlled Waters however, soil leachate testing was conducted to give an indication of risk.

The laboratory certificates are presented in Appendix C.

3.3.1 Made Ground

Asbestos

Asbestos was identified in the three samples of granular Made Ground (MPA_AUK_TP101_SO_0350, MPA_AUK_TP102A_SO_0100 and MPA_AUK_TP1030_SO_0060), quantification has been requested on these samples and is outstanding.

A potential ACM (cement pipe) was noted in situ in MPA_AUK_TP117.

Metals and Inorganics

With the exception of hexavalent chromium and mercury the metals analysed for were detected in each of the soil samples tested. Mercury was identified in 4 of the 32 samples tested. Concentrations of metals were notably higher in the samples of slag dominant made ground compared to granular made ground.

Levels of cyanide and thiocyanate were low across the site, though more variation was noted in soluble sulphate concentrations. Soil samples were on average strongly alkaline ranging between pH 9.8 and 12.7.

Leachability testing showed the majority of metals were present in the leachate from made ground samples. Leached concentrations of metals were noted in all samples tested with arsenic, barium, copper, magnesium, manganese and vanadium leaching in all samples. The pH of leachate samples was noted to be slightly alkaline and lower than the corresponding soil samples.

Polyaromatic Hydrocarbons

Concentrations of PAH were measured in 29 of the 32 soil samples analysed, and in all eight samples of soil leachate; comprising a broad range of both light, mid and heavy end compounds.

Total Petroleum Hydrocarbons

Concentrations of TPH were measured in 14 of the 32 soil samples analysed at concentrations ranging between 1000mg/kg (MPA_AUK_TP113_SO_0090) and 33mg/kg (MPA_AUK_TP117_SO_0060), the former and a detection in MPA_AUK_TP101_SO_0350 (560mg/kg) are the only detections measured over 500mg/kg.

Total petroleum hydrocarbons were not measured above the method detection limit (MDL) in soil leachate.

Other Contaminants

No elevated concentrations of VOC, SVOC, or PCBs were measured in any of the soil samples with the exception of carbazole and dibenzofuran detected at the MDL in MPA_AUK_TP121_SO_0080.

3.4 Pathways

Potential migration pathways based on a proposed commercial industrial end use are discussed below.

3.4.1 Airborne Migration Pathways

- The majority of the site is currently not formally surfaced, as such, particulate inhalation due to dust generation is a potentially active pathway if hardstanding or buildings were not present across the site in a future development scenario.
- Vapour inhalation pathways in relation to contaminants in soil and groundwater are potentially active, both for an exposure scenario in outdoor or indoor air space.
- During potential re-development works, sub-surface soils could be exposed at the surface due to trenching and or re-profiling requirements and therefore dust has the potential to be generated. Notwithstanding this, typical dust suppression techniques should be employed so that exposures would be minimised.
- Migration and accumulation of permanent ground gases originating from the made ground on site in confined spaces leading to asphyxiation and/or explosion is considered potentially active.

3.4.2 Direct Contact Exposure Pathways

- The proposed site surfacing under any potential re-development scenario is unknown; should a significant portion of the site area be covered in some form soft landscaping, dermal contact and ingestion pathways in relation to soil would be considered potentially active. Given the depth to groundwater (greater than 4.5m bgl, unless the final ground elevation is reduced significantly), direct contact pathways in relation to groundwater are not considered active.
- Direct contact pathways with soils could be active throughout a potential redevelopment; typical mitigation measures such as personal protective equipment (PPE; overalls, gloves etc.) could be used to mitigate this risk. If unexpected contamination (such as non-aqueous phase liquids (NAPL)) were identified during redevelopment works, additional PPE may be required as mitigation.

3.4.3 Aqueous Migration Pathways

- Leaching of contaminants in the shallow soils to groundwater within the Tidal Flat Deposits is considered potentially active;
- The thickness of Glacial Till on-site between the Tidal Flat Deposits and the underlying Mercia Mudstone is not well delineated therefore the potential for vertical migration of contaminants to the underlying Secondary (B) Aquifer is considered potentially active.
- Given the granular nature of the identified and thickness of the Made Ground and the permeability of the Tidal Flat Deposits, lateral migration of off-site impacts onto the site from nearby PAOC is considered potentially active. The most likely source would be the SLEMS and Highfield Environmental waste facilities located hydraulically down gradient of the site.
- Lateral migration of on-site impacts towards the Cleveland and Lackenby watercourses is considered potentially active given the identified thickness and nature of the Made Ground. The potential for infiltration

of CoC into watercourses *via* surface runoff or migration of rainfall through the made ground is considered potentially active.

- Depending on pile design for future structures, vertical migration of impacts down foundation piles is considered potentially active unless appropriately designed.

3.5 Receptors

The potential receptors to be considered in any contaminated land scenario can be summarised as follows:

3.5.1 Human Health

For the purposes of this assessment it is assumed that the proposed development will comprise a commercial or industrial end use, and as such commercial and industrial workers are the primary receptor of concern for any contamination risk. The risk would be influenced by the duration and location of the staff work regimes.

Users of the adjacent buildings (industrial workers and neighbouring residents) could also be at risk. However, for exposure to occur, active cross-boundary migration pathways would be required. It is noted that the neighbouring residents are situated over 1km from the site, and as such are not considered to be at significant risk from the site.

3.5.2 Property (buildings, etc)

The proposed development will include new structures and associated infrastructure, which could be subject to potential sulphate attack in relation to buried concrete. Given the presence of slag deposits within the Made Ground the potential for expansive slag to impact structures is considered potentially active, the risks from ground gas are also considered potentially active. It is understood that mitigation of risks to property will be the responsibility of the developer.

3.5.3 Controlled Water

Groundwater is a Controlled Water; therefore, the groundwater beneath the site requires consideration. At this site, the underlying geology comprises Tidal Flat Deposits which are classified as a Secondary (A) Aquifer and the Mercia Mudstone Formation classified as a Secondary (B) Aquifer both of which are considered groundwater receptors at the site. It is noted that the site is not located within a Source Protection Zone (SPZ) and no SPZ's have been identified within 1km of the site. Additionally, the site is not located in a drinking water protected area or a drinking water safeguard zone, and neither zone is present within 1km of the site. The site adjoins a tidal section of the River Tees and therefore there is the potential for saline intrusion into the underlying aquifers limiting their resource value.

Surface water courses are also considered Controlled Water receptors; given its presence at the site boundary the Cleveland is considered the primary surface water receptor for the site.

3.5.4 Ecological

The Cleveland and Teesmouth Coast SSSI, SPA, and RAMSAR is located approximately 350m to the north of the site.

Based on the distance from the site the risk to ecological receptors is considered low. In addition, potential discharges from the site to the Teesmouth and Cleveland Coast SPA and RAMSAR via the River Tees are likely to be limited by tidal exchange and the large volume of the River Tees receiving water. This is in line with the findings of Wood 2019.

3.6 Obstructions

Frequent hard deposits of slag presented issues with progression of a number of the exploratory holes during the course of the investigation completed by AEG (**draft** trial pit logs presented in Appendix C), concrete structures were also noted in MPA_AUK_TP102 and MPA_AUK_TP129. It should be noted that further obstructions may be encountered in areas not investigated.

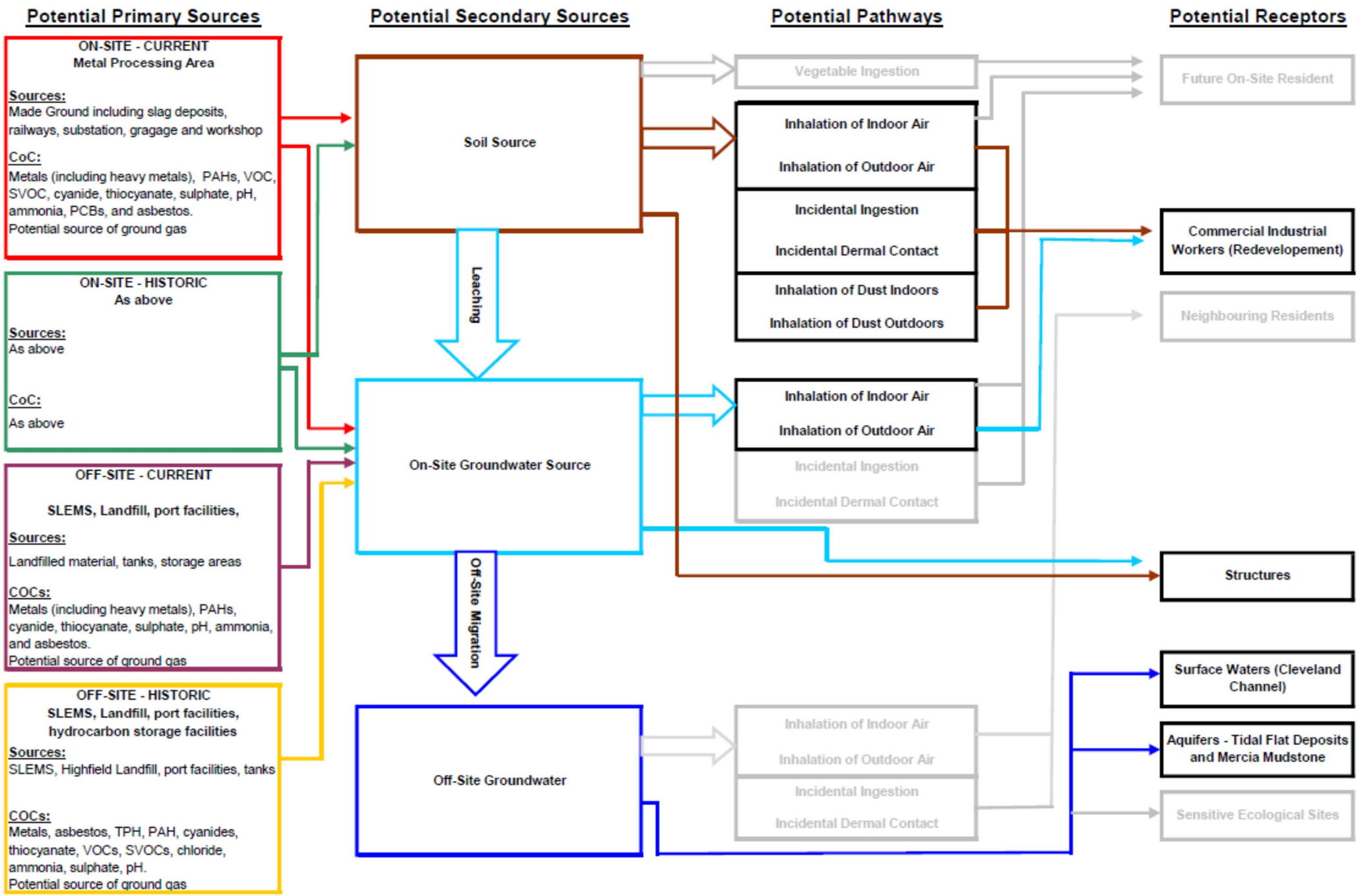
3.7 Slag Testing Data

Petrographic and expansion examination has been undertaken, the results are were not compete at the time of issue and will be presented in Appendix D in an updated report.

3.8 Conceptual Site Model

The above data has been used to produce an initial CSM for the site, this is presented below as Figure 4.

Figure 4
Outline Conceptual Site Model - Commercial Industrial End Use



4 Generic Quantitative Risk Assessment

4.1 Tiered Approach

The purpose of this assessment is to quantify potential risks to the human health, controlled waters, ecological and future built receptors identified in the CSM in relation to the redevelopment of the site for a generic commercial/industrial use.

The following scenarios are not considered in this section:

- Risks to Construction Workers – any redevelopment and construction work should be conducted in full recognition of HS(G)66.
- Nuisance health effects – the Statutory Nuisance Act considered olfactory impacts from odours and allows comparison of enclosed space air concentrations with odour threshold concentrations.
- An assessment of the geotechnical development constraints which is outside the scope of this document.

Quantitative assessment of risks arising from soil and groundwater contamination are assessed in accordance with the framework presented in Contaminated Land Report 11 (CLR 11) (EA, 2004) and Land Contamination: Risk Management (LC:RM) (EA, 2020). This sets out a tiered approach to quantitative risk assessment comprising:

- Generic Quantitative Risk Assessment (GQRA) - Comparison of site contaminant levels against generic standards and compliance criteria including an assessment of risk using a source-pathway-receptor model.
- Detailed Quantitative Risk Assessment (DQRA) - Derivation of site-specific risk assessment criteria and calculation of site specific clean-up goals.

In this report, a GQRA has been carried out. The potential pollutant linkages identified in the preliminary CSM for human health and controlled water receptors have been assessed by comparison against relevant generic assessment criteria (GAC). These have been derived using conservative assumptions to enable potential pollutant pathways that do not pose unacceptable risks to receptors to be identified and discounted. Exceedance of a GAC does not imply that an unacceptable risk is necessarily present, rather that further assessment may be required to verify the potential risk.

It is assumed that the site will be redeveloped as a typical commercial industrial development comprising office buildings, hardstanding and some areas of soft landscaping. The site has not been zoned at this stage and all data has been considered on an individual sample basis.

4.2 Human Health Risks

4.2.1 Selection of Soil GAC

Potentially active pollutant linkages and contaminants of concern (CoC) in relation to human health risks have been identified in the initial CSM as:

A. Vapour inhalation of indoor and outdoor air from volatile contaminants in soils, (potential CoC include volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs))

B. Vapour inhalation of indoor and outdoor air from volatile contaminants in shallow groundwater, (potential CoC include VOCs and SVOCs)

C. Dermal contact/ingestion of soil (potential CoC include heavy metals, organic/inorganic compounds)

D. Dust inhalation (potential CoC include asbestos, volatiles, and heavy metals)

For the purposes of this assessment it is assumed that future re-development will comprise a commercial or industrial end use and, as such, commercial and industrial workers are the primary receptor of concern for any

contamination risk. The risk would be influenced by the duration and location of the staff work regimes. For the basis of this assessment, it is assumed that site workers will be on-site for a “standard” 8 hour working day.

Commercial end use assumes a pre-1970s commercial property is present at the site with some open areas uncovered by hardstanding and is therefore regarded as conservative for a redevelopment scenario as new structures are assumed to be constructed to current standards.

To assess potential linkages A, C and D above, GAC have been chosen, based on an assumed industrial/commercial end use. Criteria published by authoritative industry bodies and commonly accepted by regulators for use under the planning regime for development sites have been used first. For contaminants for which no published values are available, Arcadis derived criteria (developed following the CLEA framework (v1.07)) or foreign national criteria have been used.

The GAC comprise (in order of priority):

- LQM/CIEH Suitable for Use Levels (S4UL) (LQM / CIEH, 2015),
- Department of Environment Food and Rural Affairs (DEFRA) Category 4 Screening Levels (C4SL) (DEFRA, 2012),
- Arcadis derived generic assessment criteria based on CLEA v1.07,
- United States Environmental Protection Agency (U.S. EPA) Regional Screening Levels (RSLs) (USEPA, 2018)

Soil organic matter recorded in 32No. soil samples obtained from the site ranged from 0.2 to 4.2 % SOM. As such, the S4UL selected as GAC are those for a commercial end use assuming 1% SOM.

It is noted that the USEPA RSLs do not consider the risk to human health via the inhalation of vapour pathway. As such, should concentrations of volatile or semi-volatile CoC be measured above MDL for which only a USEPA RSL GAC is available, further consideration may need to be given to the risk to human health from inhalation of vapours.

The selected human health GAC for soil are presented in Appendix E:

4.2.2 Soil Quality Screening

Contaminant concentrations in soil samples have been compared with the soil GAC in Appendix E. Contaminants which were measured in excess of the GAC are summarised below. Contaminants that have not been identified in excess of their respective GAC are not considered to represent a significant risk to identified human health receptors and as such do not require further assessment in relation to the redevelopment of the site unless the above assumptions are not valid.

The following samples were analysed:

- 27 No. samples of slag-dominated Made Ground
- 5 No. samples of granular Made Ground

None of concentrations of CoC measured in the 32 soils samples were in excess of the soil GAC for the contaminants for which screening criteria are available, therefore there is not considered to be a significant risk to human health from these CoC in shallow soils. The maximum recorded concentrations in soil for all contaminants are listed in Appendix E.

Contaminants for which no screening criteria were available have been reviewed. Most contaminants, including polychlorinated biphenyls (PCBs) and VOCs were recorded below the method detection limit (MDL) in all soil samples.

Contaminants measured in soil at concentrations above MDL, for which no screening criteria were available were aluminium, iron, magnesium, manganese, silicon, total cyanide, sulphate, and carbazole. Potential human health risks from these are qualitatively assessed in Section 4.2.4.

4.2.3 Asbestos in Soil

A total of 32No. soils samples were screened by polarised light microscopy in accordance with HSG248 for the presence of asbestos (HSE, 2005). In 3No. sample asbestos was detected as bundles of fibres (chrysotile). The detections were recorded in MPA_AUK_TP101, MPA_AUK_TP102A, and MPA_AUK_TP130 at depths of 3.5, 1.0 and 0.6 metres below ground level (m bgl) respectively. The samples from MPA_AUK_TP101 and MPA_AUK_TP130 are noted to be within deposits containing demolition material, whilst the sample from MPA_AUK_TP102A is very slag rich. In pit MPA_AUK_TP130 similar material is encountered to the surface and therefore dust generation is considered a valid pathway.

Quantification of the asbestos is underway and will be reported in an updated cover.

4.2.4 Qualitative Risk Assessment for Substances in Soil without GACs

As shown in Appendix E, several contaminants including some PCBs, VOCs and SVOCs do not have a GAC available, but were recorded at less than the MDL in all soil samples. Based on a review of the MDLs, these are not considered to pose a significant risk to human health and are likely to indicate an absence of that contaminant group on the site, especially given the relatively low MDLs obtained.

The following were recorded at concentrations in excess of their MDL and with no readily available GAC identified for comparison: aluminium, iron, magnesium, manganese, silicon, total cyanide, sulphate, dibenzofuran and carbazole. With the exception of total cyanide, and carbazole, these are all elements present naturally in soil and some are biologically required nutrients. They may be elevated above natural levels where slag and other steelmaking wastes are incorporated into soil due to the site's former use, particularly manganese and iron. However, regardless of these elevations, their typically low toxicity is likely to mean these occurrences present a low risk of adverse harm to the development.

Total cyanide is known to be less toxic than free cyanide. When compared to the Arcadis site specific assessment criteria for free cyanide derived for the Prairie site (10035117-AUK-XX-XX-RP-ZZ-0088-01-Prairie_Risk Assessment), the concentrations of total cyanide are not in excess. As such, concentrations of total cyanide are not considered to represent a significant risk to human health receptors.

The SVOCs, dibenzofuran, and carbazole were detected at the MDL. These are indicative of incomplete combustion products and therefore consistent with the presence of steelmaking wastes. Both compounds were at the MDL and when compared to the GAC, dibenzofuran concentrations were not in excess. Given that the single concentration of carbozole measured at the MDL, the risk to human health from concentrations of carbozole is also considered to be low.

Other effects, such as phytotoxicity, are not assessed as the Made Ground encountered at the site is likely to be unsuitable as a growing medium and some form of capping with "clean" soil is likely to be incorporated into any future development.

4.2.5 Discussion

None of the potential contaminants of concern analysed in the soil samples were in excess of available GAC protective of human health via potential pollutant linkages A and C in Section 4.2.2 above. On this basis, these linkages are not considered active for shallow soils and are unlikely to pose a significant risk to human health. As the full depth of unsaturated Made Ground was not proven at the site the potential that contamination that could potentially pose a significant risk via pollutant linkage A exists at greater depth cannot be excluded at this point.

Groundwater was not encountered within the trial pits therefore the significance of pollutant linkage B cannot be assessed at this time and will require investigation during subsequent assessment works.

Asbestos fibres were identified in two samples, however only one of these contained obvious demolition materials, the other being primarily composed of slag deposit. Asbestos is potentially hazardous when inhaled and therefore pollutant linkage D (inhalation of dust) is considered potentially active as surface soils may become airborne during construction or if incorporated into soft landscaping without any cover. The highest risk is considered to be associated with the granular Made Ground, accepting however that the data does not suggest asbestos is prevalent at the site.

Acute risks to construction workers arising from short-term contact with contaminated soils during demolition and redevelopment of the site are not assessed by the chronic risk assessment methods in this report. During

construction works, site workers should remain vigilant to the possible risk of encountering isolated areas of contaminated material. Should potentially contaminated material be encountered, further testing may be required to assess the risk to health and safety of the site workers and the environment. All persons engaged in site construction works should be made aware of the findings of the intrusive investigation and the hazards associated with handling potentially contaminated materials. It is recommended that all works are conducted in accordance with the Health and Safety Executive publication entitled "Protection of Workers and the General Public during the Development of Contaminated Land" (HSE, 1991).

4.3 Risks to Controlled Waters

4.3.1 Selection of GAC

Potentially active pollutant linkages in relation to Controlled Waters have been identified in the initial CSM as:

1) Leaching of CoC from Made Ground to groundwater in Tidal Flat Deposits
2) Vertical Migration of CoC to the Mercia Mudstone
3) Horizontal Migration of contaminated groundwater to the Cleveland Channel watercourse
4) Migration of CoC in groundwater onto site from off-site sources
5) Migration of CoC in groundwater off site.

An assessment of the potential for soluble contaminants in the Made Ground and slag on the site to impact the Controlled Waters receptors identified in the CSM (on-site surface water and underlying Secondary Aquifers (Tidal Flat Deposits and Mercia Mudstone)) has been undertaken.

At this point only a partial assessment of pollutant linkage 1 has been undertaken as the shallow soils investigation was not intended to assess groundwater or surface water quality at the site. The proposed deep soil and groundwater investigation will assess pollutant linkages 2 to 5.

Concentrations of leachable contaminants from soil leaching tests and groundwater samples have been compared to appropriate Water Quality Standards (WQS).

The WQS chosen are UK Drinking Water Standards (DWS) protective of aquifer water resources, and Environmental Quality Standards (EQS) considered protective of surface waterbody quality. The EQS are for saline waters protective of the Tees Estuary receptor. The WQS are listed in Appendix F.

4.3.2 Soil Leachate

The results of 10No. soil leachate tests were compared to the WQS as shown in Appendix F. Contaminant concentrations that exceeded the WQS are shown in the table below. One of the samples was granular Made Ground and 9No. samples were slag-dominated Made Ground. Samples tested were taken across the site from depths ranging from 0.6 m to 1.2m bgl.

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Sample	Concentration
Arsenic	µg/l	1/10	DWS	10	MPA_AUK_TP124_SO_0080	23
Copper	µg/l	8/10	EQS	3.76	MPA_AUK_TP103_SO_0080	12
					MPA_AUK_TP108_SO_0100	9
					MPA_AUK_TP115_SO_0060	4.1
					MPA_AUK_TP111_SO_0120	13
					MPA_AUK_TP117_SO_0060	7.4

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Sample	Concentration
					MPA_AUK_TP119_SO_0100	9.9
					MPA_AUK_TP121_SO_0080	9.7
					MPA_AUK_TP123_SO_0100	6.6
Lead	µg/l	5/10	EQS	1.3	MPA_AUK_TP103_SO_0080	2.2
					MPA_AUK_TP111_SO_0120	11
					MPA_AUK_TP121_SO_0080	61
					MPA_AUK_TP123_SO_0100	2.2
					MPA_AUK_TP124_SO_0080	2.6
	µg/l	2/10	DWS	10	MPA_AUK_TP111_SO_0120	11
					MPA_AUK_TP121_SO_0080	61
Mercury	µg/l	1/10	EQS	0.07	MPA_AUK_TP117_SO_0060	0.07
Molybdenum	µg/l	1/10	DWS	70	MPA_AUK_TP121_SO_0080	95
pH	pH units	8/10	EQS	6 – 8.5	MPA_AUK_TP103_SO_0080	11.3
					MPA_AUK_TP108_SO_0100	11.8
					MPA_AUK_TP106_SO_0100	9.6
					MPA_AUK_TP111_SO_0120	12.3
					MPA_AUK_TP115_SO_0060	11.9
					MPA_AUK_TP117_SO_0060	11.4
					MPA_AUK_TP121_SO_0080	12.2
					MPA_AUK_TP123_SO_0100	11.3
Naphthalene	µg/l	1/10	EQS DWS	2	MPA_AUK_TP123_SO_0100	85
Anthracene	µg/l	2/10	EQS	0.1	MPA_AUK_TP106_SO_0100	0.46
					MPA_AUK_TP123_SO_0100	0.46
Fluoranthene	µg/l	9/10	EQS	0.0063	MPA_AUK_TP103_SO_0080	0.01
					MPA_AUK_TP106_SO_0100	2.5
					MPA_AUK_TP111_SO_0120	0.01
					MPA_AUK_TP115_SO_0060	0.09
					MPA_AUK_TP117_SO_0060	0.02
					MPA_AUK_TP119_SO_0100	0.54
					MPA_AUK_TP121_SO_0080	0.01
					MPA_AUK_TP123_SO_0100	0.07
					MPA_AUK_TP124_SO_0080	0.04

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Sample	Concentration
Benzo(b)fluoranthene	µg/l	5/10	EQS DWS	0.017 0.025	MPA_AUK_TP106_SO_0100 MPA_AUK_TP115_SO_0060 MPA_AUK_TP119_SO_0100 MPA_AUK_TP123_SO_0100 MPA_AUK_TP124_SO_0080	3.3 0.05 0.02 0.03 0.01
Benzo(a)pyrene	µg/l	5/10	EQS DWS	0.017 0.01	MPA_AUK_TP106_SO_0100 MPA_AUK_TP115_SO_0060 MPA_AUK_TP119_SO_0100 MPA_AUK_TP123_SO_0100 MPA_AUK_TP124_SO_0080	1.0 0.74 0.24 0.03 0.01
Indeno(1,2,3-c,d)pyrene	µg/l	3/10	DWS	0.025	MPA_AUK_TP106_SO_0100 MPA_AUK_TP115_SO_0060 MPA_AUK_TP119_SO_0100	2.1 0.03 0.4
Benzo(g,h,i)perylene	µg/l	6/10	EQS DWS	0.00082 0.025	MPA_AUK_TP106_SO_0100 MPA_AUK_TP115_SO_0060 MPA_AUK_TP117_SO_0060 MPA_AUK_TP119_SO_0100 MPA_AUK_TP123_SO_0100 MPA_AUK_TP124_SO_0080	2.2 0.04 0.02 0.5 0.01 0.02

An exceedance of the EQS for five metals were recorded. Five PAH were measured in excess of DWS with seven measured in excess of EQS.

As the WQS are protective of water quality within the receptor (the water body for EQS or the customer's tap for DWS); direct comparison with soil leachate results is a conservative assessment as it does not take into account dilution and attenuation along the pathway.

The EQS for copper is based on the bioavailable fraction which is likely to be less than the total dissolved concentrations recorded in the results. As not all the copper is likely to be bioavailable the EQS can therefore be regarded as conservative.

Concentrations of CoC measured above MDL for which no GAC was readily available are qualitatively assessed in Section 4.3.3. Discussion of the concentrations of CoC measured in leachate which are in excess of WQS is included in Section 4.3.4.

4.3.3 Qualitative Risk Assessment for Substances in Leachate without WQS

As shown in Appendix F, for several contaminants including some metals (beryllium and magnesium) and inorganics (chloride, and sulphate) WQS are not readily available for comparison. Concentrations of beryllium, were not measured above the laboratory MDL in any of the leachate samples tested. As such, these compounds are not considered to pose a significant risk to identified water resource receptors.

The following compounds did not have readily available GAC and were recorded at concentrations in excess of their MDL: magnesium, sulphate and chloride, these elements and compounds are present naturally in

groundwater. Considering the site setting (close to saline coastal environment) these compounds are not considered to pose a significant risk to water resources.

Given a number of PAHs do not have readily available WQS, assessment of the risk to water resources will be made using PAHs in groundwater that have available WQS. This is considered to be sufficiently protective of water resources.

None of the contaminants without WQS are expected to pose a significant risk to Controlled Waters under a commercial redevelopment scenario and therefore further assessment of the contaminants in shallow soils is not warranted.

4.3.4 Discussion

PAH

Concentrations of PAH have been measured in excess of WQS in the majority of leachate samples. Of the measured concentrations of PAH in excess in leachate, the majority are considered to be marginally in excess of the WQS. Given this, and that PAH are generally of low mobility in the natural environment, the risk to water resources receptors from these contaminants is considered to be low however investigation of the underlying groundwater will need to be completed to confirm this.

Heavy Metals

Of the heavy metals, arsenic, copper, lead, mercury, and molybdenum were measured in excess of the WQS in leachate. Of the measured concentrations of metals in excess in leachate, the majority are considered to be marginally in excess of the WQS within the same order of magnitude. Therefore, the risk to water resources receptors from these contaminants is likely to be low however investigation of the underlying groundwater will need to be completed to confirm this.

4.4 Built Receptors

Significant contamination can pose a risk to subsurface structures and services, where these are in direct contact with soil and/or groundwater. Substances such as dissolved metals, sulphate, cations, phenols and hydrocarbons in high concentrations can adversely affect in-ground materials such as concrete, metal and plastics.

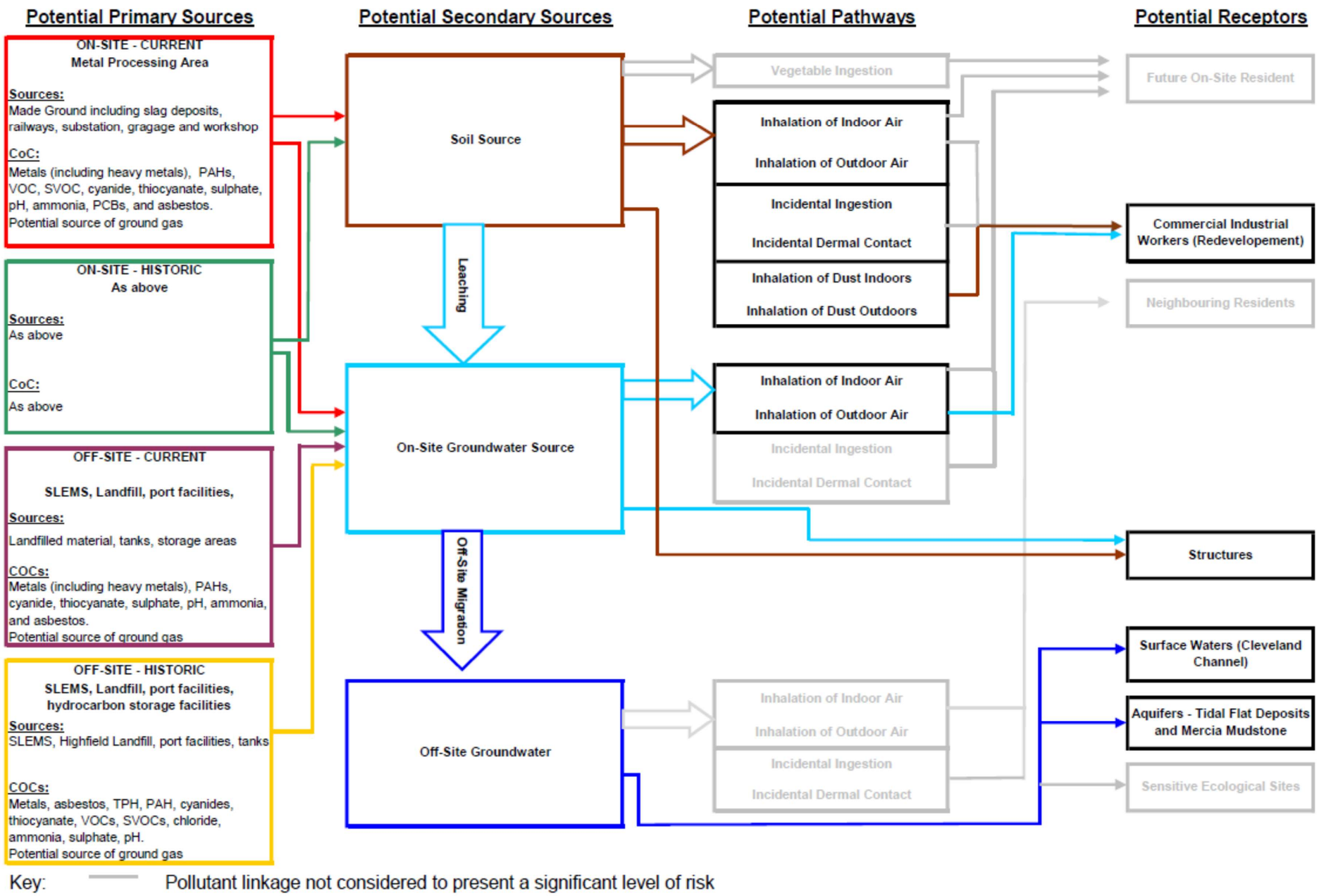
The most sensitive built receptor is generally plastic water supply pipes, which can be affected by permeation of hydrocarbons and organic solvents into the pipe. The available chemical data for soil samples has been reviewed against the UK Water Industry Research (UKWIR) criteria to provide an indication of the potential acceptability of polyethylene (PE) pipes in brownfield land (Water UK, 2014), although an exact comparison is not possible due to differences in the determinand suites tested. Concentrations of the chemicals measured in the soil samples collected from the site have not been identified in excess of the UKWIR criteria however it is noted the Made Ground at the site can be alkaline (up to a pH of 12). Additional analysis of soil along any proposed route of water supply pipes is likely to be required to validate the acceptability of PE water supply pipes, alternatively barrier pipe or similar could be used.

Potential pollutant linkage E (attack on subsurface structures) cannot be discounted at this stage and appropriate mitigation measures may be required, these will be dependent on the redevelopment scenario and may require further assessment to define.

5 Updated Conceptual Site Model

An updated CSM has been developed, using the findings of the above assessments, and is presented below as Figure 5. Pollutant linkages that have been shown to be inactive or not a significant risk have been removed.

Figure 5
Outline Conceptual Site Model - Commercial Industrial End Use



6 Conclusions

This report has used information obtained from the recent ground investigation [AEG, in press] to assess the potential contamination risks to human health, Controlled Waters, ecological receptors and built property. The assessment has been undertaken based on a future generic commercial end use. Based upon this assessment of data, the CSM has been updated to identify the potential pollutant linkages considered to be complete (previous page).

Heavy metals have been recorded in soil and dissolved in soil leachate samples across the site. These are likely associated with the slag within the Made Ground. The probable source is historical placement of material from the steelmaking process.

6.1 Human Health Risk

Potential risks to human health via intake of a range of contaminants from shallow soils (Made Ground including slag materials) were assessed using GAC. None of the contaminants for which GAC are available exceeded the criteria and therefore no unacceptable risks have been identified from contact with or ingestion of soils on the site. Soil pH was noted to be strongly basic / alkaline. Contaminants without GACs have been qualitatively reviewed and no potentially significant risks have been identified. However, risks to human health from vapour intrusion of contaminants in groundwater has not been assessed as groundwater quality has not been investigated at this point.

Asbestos was recorded in 3 out of 32 samples of Made Ground across the site. This was associated with obvious demolition material within Made Ground at the site in only one case. Asbestos fibres in shallow soils in areas without buildings or hardstanding has the potential to become airborne and available for inhalation, particularly during construction, posing chronic risks to human health.

Additional assessment may be required dependent on the redevelopment scenario to further delineate the presence of asbestos on the site and determine necessary mitigation measures. It is likely that a clean cover system in areas of soft landscaping can be utilised to mitigate the risk to site occupiers and neighbouring land users. During redevelopment, good construction practice such as minimising handling of asbestos-contaminated soils, damping down and appropriate Personal Protective Equipment (PPE) may be sufficient to mitigate the risk to construction workers, but the works should be carried out with due consideration to the Control of Asbestos Regulations (2012).

Soil containing more than 0.1% m/m asbestos, if disposed of off-site, may be classified as hazardous waste and attract significantly higher disposal costs. Additional testing would be required to confirm the quantity of asbestos and delineate any areas above the threshold.

6.2 Controlled Waters

Several exceedances of Water Quality Standards (WQS) were recorded in soil leachate samples from Made Ground. As assessment of groundwater and surface water quality has not been conducted at this stage the significance of the potential pollutant linkages identified for Controlled Waters cannot be assessed.

6.3 Flood Risk

The Wood “Flood Risk Assessment and Drainage Strategy Flood Risk Assessment and Drainage Strategy” (Ref. 41825-WOOD-XX-XX-RP-OW-0001_A_P01) concluded that the potential import of up to 500mm mudstone onto the site did not increase the surface water flood risk.

The proposed planning application “*Demolition of existing buildings/ structures and engineering operations associated with ground remediation and preparation of land for development”* is assumed to comprise the excavation and crushing of hardstanding and other impermeable obstructions within the Made Ground and their backfill within the excavation. As such, Arcadis considers that following removal of hardstanding this approach will not decrease surface water infiltration rates and therefore the risk or surface water flooding both on and off-site will likely be no higher than that identified by Wood.. The proposed works are also unlikely to significantly alter the surface run off and infiltration from the site into the adjoining surface water features.

6.4 Recommendations

1. The proposed planning permission is for "*Demolition of existing buildings/ structures and engineering operations associated with ground remediation and preparation of land for development*". It is recommended that a watching brief is in place for environmental; contamination.
2. Assessment of deep soils, ground and surface water should be undertaken prior to redevelopment to further assess the risks to Controlled Waters at the site, and the risks to human health from the vapour intrusion pathway.
3. Following the collection of additional data, further assessment of the risk to identified surface receptors from concentrations of CoC identified in groundwater should be undertaken.
4. Prior to redevelopment a remediation options appraisal should be carried out for the loose asbestos fibres identified in the Made Ground on the site. Additional data collection may be needed to support the associated risk assessment/remediation design.
5. Depending on the redevelopment scenario further ground investigation including ground gas monitoring of shallow soils should carried out prior to redevelopment to quantify the ground gas risk on the site in the context of the proposed layout and design.

APPENDIX A

Figures

Legend

Site Boundary

Metals Processing Area

Notes:

CONTACT ARCADIS IN CASE OF ANY QUERIES.

N

Title: MPA - Site Location Plan

Site:
Redcar Steelworks - MPA

Client:
South Tees Developement Corporation

Project: 10035117	**Figure 1**

Date: 07/08/2020
Drawn By: JALM
DRG No: 10035117-AUK-XX-XX-DR-ZZ-0127-01-MPA_SLP

ARCADIS Design & Consultancy for natural and built assets

Legend

Redline

Metals Recovery Area

Hatching Shows Artificial Ground

Notes:

CONTACT ARCADIS IN CASE OF ANY QUERIES.

N

Title: MPA - Anticipated Geology

Site:
Redcar Steelworks - MPA

Client:
South Tees Developement Corporation

Project: 10035117	**Figure 2**

Date: 01/04/2020
Drawn By: JALM
DRG No: 10035117-AUK-XX-XX-DR-ZZ-0126-01-MPA_Geology

ARCADIS Design & Consultancy for natural and built assets

Legend

STDC Shapefile Data

- Rail Track
- Tanks

Redline

- Metals Recovery Area

Notes:

CONTACT ARCADIS IN CASE OF ANY QUERIES.

Not shown PAOC - Made Ground

N

Title: MPA - Potential Areas of Concern (PAOC)

Site:
Redcar Steelworks - MPA

Client:
South Tees Developement Corporation

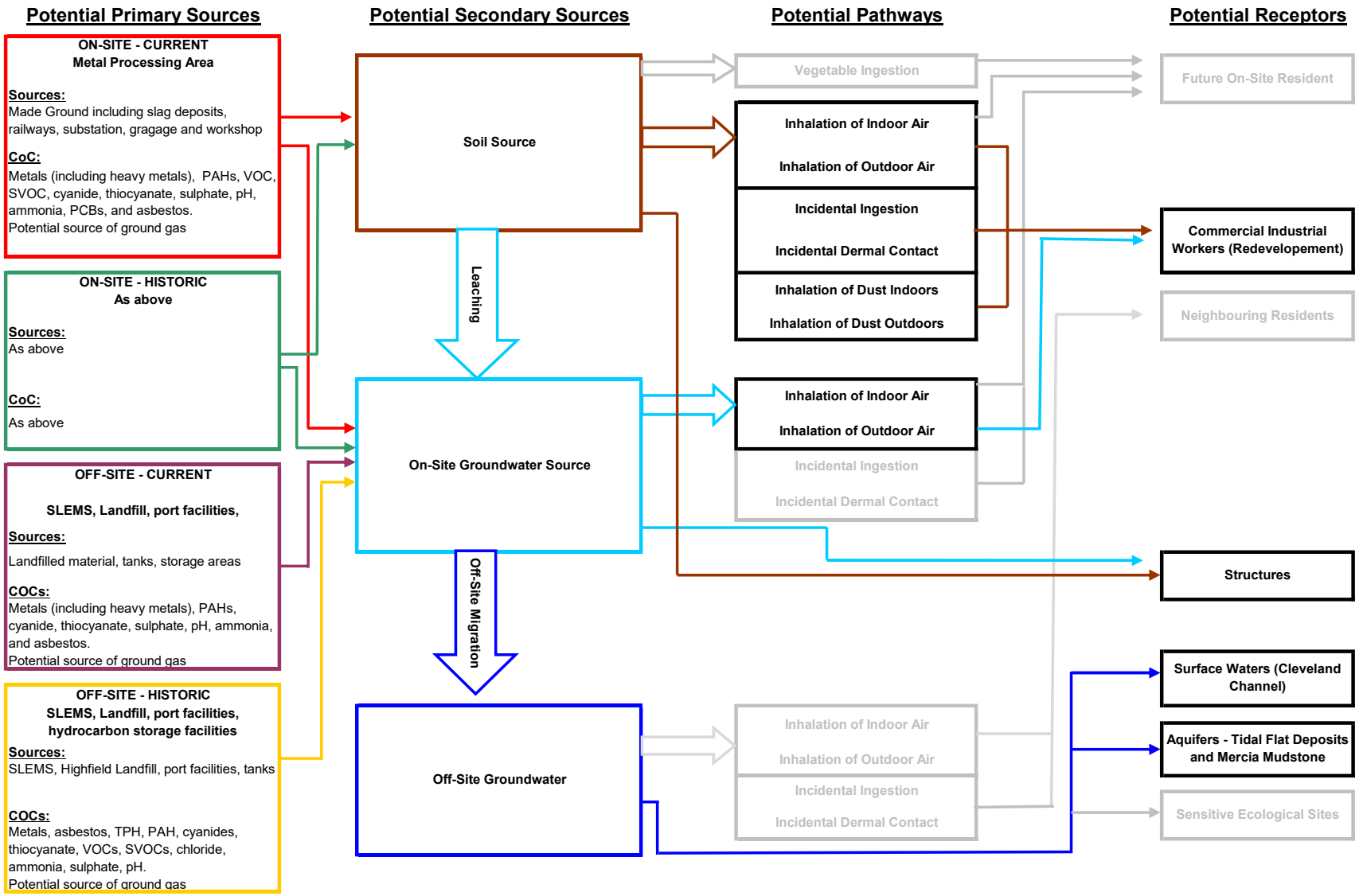
Project:
37774100

Figure 3

Date: 3/08/2020
Drawn By: JALM
DRG No: 10035117-AUK-XX-XX-DR-ZZ-0125-01-MPA_PAOC

ARCADIS Design & Consultancy for natural and built assets

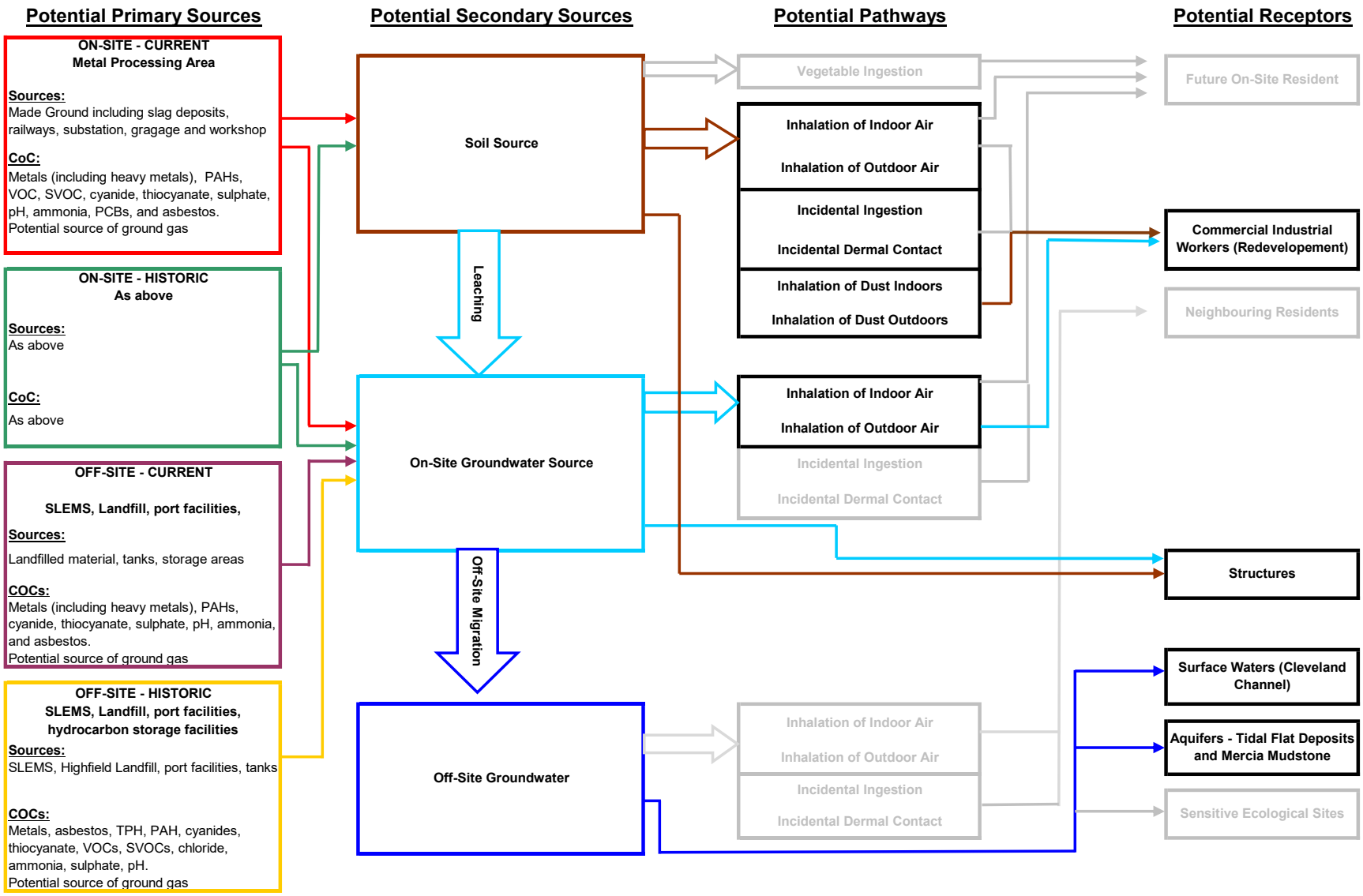
Figure 4
Outline Conceptual Site Model - Commercial Industrial End Use



Key: Pollutant linkage not considered to present a significant level of risk

ARCADIS Design & Consultancy for natural and built assets

Figure 5
Outline Conceptual Site Model - Commercial Industrial End Use



Key: Pollutant linkage not considered to present a significant level of risk

APPENDIX B

Study Limitations

IMPORTANT: This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Arcadis UK Ltd (Arcadis), with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with **STDC** (the 'Client'). Arcadis does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis have no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.

8. This report refers, within the limitations stated, to the condition of the Site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the Site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on Site.

12. Unless otherwise stated the report provides no comment on the nature of building materials,

operational integrity of the facility or on any regulatory compliance issue

APPENDIX C

AEG Data

Certificate of Analysis

Certificate Number 20-12202-1

28-Jul-20

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 20-12202-1

Client Reference 4291

Order No (not supplied)

Contract Title Former Redcar Steelworks - Metal Processing Area

Description 5 Soil samples, 2 Leachate samples.

Date Received 08-Jul-20

Date Started 08-Jul-20

Date Completed 28-Jul-20

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 20-12202, amendments.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
MPA_AUK_TP119_SO_0100	3	1	1694833	16/07/2020	Dark brown gravelly SAND
MPA_AUK_TP114_SO_0080	2A	0.8	1694834	16/07/2020	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
MPA_AUK_TP109_SO_0090	3	0.9	1694835	16/07/2020	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
MPA_AUK_TP116_SO_0080	3	0.8	1694836	16/07/2020	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
MPA_AUK_TP115_SO_0060	3	0.6	1694837	16/07/2020	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694833	1694834	1694835
				MPA_AUK_TP119	MPA_AUK_TP114	MPA_AUK_TP109
			Sample ID	_SO_0100	_SO_0080	_SO_0090
			Depth	1.00	0.80	0.90
			Other ID	3	2A	3
			Sample Type	ES	ES	ES
			Sampling Date	06/07/2020	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	19000	13000	29000
Antimony	DETSC 2301*	1	mg/kg	5.6	11	2.5
Arsenic	DETSC 2301#	0.2	mg/kg	21	2.3	64
Barium	DETSC 2301#	1.5	mg/kg	450	91	190
Beryllium	DETSC 2301#	0.2	mg/kg	2.1	0.2	3.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4	2.5	3.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.3	1.6
Chromium	DETSC 2301#	0.15	mg/kg	290	550	48
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	36	41	35
Iron	DETSC 2301	25	mg/kg	91000	240000	22000
Lead	DETSC 2301#	0.3	mg/kg	41	8.9	550
Magnesium	DETSC 2301*	1	mg/kg	18000	28000	17000
Manganese	DETSC 2301#	20	mg/kg	9200	17000	1600
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.0	3.0	0.8
Nickel	DETSC 2301#	1	mg/kg	21	21	11
Silicon	DETSC 2301*	10	mg/kg	63000	53000	63000
Vanadium	DETSC 2301#	0.8	mg/kg	700	390	82
Zinc	DETSC 2301#	1	mg/kg	170	47	230
Inorganics						
pH	DETSC 2008#		pH	11.3	12.7	10.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	4.2	0.2	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	180	< 10	1000
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	2.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694833	1694834	1694835
			Sample ID	MPA_AUK_TP119 _SO_0100	MPA_AUK_TP114 _SO_0080	MPA_AUK_TP109 _SO_0090
			Depth	1.00	0.80	0.90
			Other ID	3	2A	3
			Sample Type	ES	ES	ES
			Sampling Date	06/07/2020	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.35	0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.29	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.15	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.19	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.22	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.8	< 0.10	< 0.10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694833	1694834	1694835
			Sample ID	MPA_AUK_TP119 _SO_0100	MPA_AUK_TP114 _SO_0080	MPA_AUK_TP109 _SO_0090
			Depth	1.00	0.80	0.90
			Other ID	3	2A	3
			Sample Type	ES	ES	ES
			Sampling Date	06/07/2020	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
PCBs						
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694836	1694837
				MPA_AUK_TP116	MPA_AUK_TP115
			Sample ID	_SO_0080	_SO_0060
			Depth	0.80	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Aluminium	DETSC 2301*	1	mg/kg	8000	10000
Antimony	DETSC 2301*	1	mg/kg	7.1	12
Arsenic	DETSC 2301#	0.2	mg/kg	7.2	17
Barium	DETSC 2301#	1.5	mg/kg	120	130
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.7	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4
Chromium	DETSC 2301#	0.15	mg/kg	340	520
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	52	28
Iron	DETSC 2301	25	mg/kg	160000	250000
Lead	DETSC 2301#	0.3	mg/kg	31	22
Magnesium	DETSC 2301*	1	mg/kg	21000	30000
Manganese	DETSC 2301#	20	mg/kg	17000	14000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	5.7	2.6
Nickel	DETSC 2301#	1	mg/kg	39	8.8
Silicon	DETSC 2301*	10	mg/kg	13000	13000
Vanadium	DETSC 2301#	0.8	mg/kg	1100	470
Zinc	DETSC 2301#	1	mg/kg	94	45
Inorganics					
pH	DETSC 2008#		pH	11.9	12.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.7
Organic matter	DETSC 2002#	0.1	%	0.8	0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	34	86
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.2	< 0.75

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Summary of Chemical Analysis
Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694836	1694837
			Sample ID	MPA_AUK_TP116 _SO_0080	MPA_AUK_TP115 _SO_0060
			Depth	0.80	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.7	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	14	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	110	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	3.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	21	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	25	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	150	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.0	0.78
Anthracene	DETSC 3303	0.03	mg/kg	0.05	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	0.18
Pyrene	DETSC 3303#	0.03	mg/kg	0.78	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.23	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.35	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.34	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.4	1.2

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Summary of Chemical Analysis

Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694836	1694837
			Sample ID	MPA_AUK_TP116_SO_0080	MPA_AUK_TP115_SO_0060
			Depth	0.80	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	1694833	1694837
Sample ID	MPA_AUK_TP119 _SO_0100	MPA_AUK_TP115 _SO_0060
Depth	1.00	0.60
Other ID	3	3
Sample Type	ES	ES
Sampling Date	06/07/2020	06/07/2020
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694833	1694837
			Sample ID	MPA_AUK_TP119 _SO_0100	MPA_AUK_TP115 _SO_0060
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1694833	1694837
				MPA_AUK_TP119	MPA_AUK_TP115
			Sample ID	_SO_0100	_SO_0060
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	06/07/2020	06/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695469	1695470
			Sample ID	MPA_AUK_TP119 _SO_0100	MPA_AUK_TP115 _SO_0060
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y
Metals					
Antimony, Dissolved	DETSC 2306	0.17	ug/l	< 0.17	0.68
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.25	1.8
Barium, Dissolved	DETSC 2306	0.26	ug/l	45	11
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	22	28
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.35
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	9.9	4.1
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5	120
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.25	0.83
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.04	0.40
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.47	1.7
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	19	< 1.1
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	3.0	1.5
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	3.2
Inorganics					
pH	DETSC 2008		pH	8.2	11.9
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.41	0.025
Chloride	DETSC 2055	0.1	mg/l	2.8	2.0
Sulphate as SO4	DETSC 2055	0.1	mg/l	8.0	21

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695469	1695470
				MPA_AUK_TP119	MPA_AUK_TP115
			Sample ID	_SO_0100	_SO_0060
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.11	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.03	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.04	0.26
Fluorene	DETSC 3304	0.01	ug/l	0.03	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.32	0.46
Anthracene	DETSC 3304	0.01	ug/l	0.07	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.54	0.09
Pyrene	DETSC 3304	0.01	ug/l	0.45	0.05
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.30	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.45	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.74	0.05
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.24	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.56	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.40	0.03
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.11	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.50	0.04
PAH Total	DETSC 3304	0.2	ug/l	4.9	1.2
Phenols					
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-12202-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1694833	MPA_AUK_TP119_SO_0100 3 1.00	SOIL	NAD	none	Jordan Eadington
1694834	MPA_AUK_TP114_SO_0080 2A 0.80	SOIL	NAD	none	Jordan Eadington
1694835	MPA_AUK_TP109_SO_0090 3 0.90	SOIL	NAD	none	Jordan Eadington
1694836	MPA_AUK_TP116_SO_0080 3 0.80	SOIL	NAD	none	Jordan Eadington
1694837	MPA_AUK_TP115_SO_0060 3 0.60	SOIL	NAD	none	Jordan Eadington

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-12202-1
Client Ref 4291
Contract Former Redcar Steelworks - Metal Processing Area

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1694833	MPA_AUK_TP119_SO_0100 1.00 SOIL	06/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1694834	MPA_AUK_TP114_SO_0080 0.80 SOIL	06/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1694835	MPA_AUK_TP109_SO_0090 0.90 SOIL	06/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1694836	MPA_AUK_TP116_SO_0080 0.80 SOIL	06/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1694837	MPA_AUK_TP115_SO_0060 0.60 SOIL	06/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695469	MPA_AUK_TP119_SO_0100 1.00 LEACHATE	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695470	MPA_AUK_TP115_SO_0060 0.60 LEACHATE	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 20-12303-1

28-Jul-20

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 20-12303-1

Client Reference 4291

Order No (not supplied)

Contract Title Former Redcar Steelworks - Metal Processing Area

Description 6 Soil samples, 3 Leachate samples.

Date Received 09-Jul-20

Date Started 09-Jul-20

Date Completed 28-Jul-20

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 20-12303, amendments.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

MCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
MPA_AUK_TP123_SO_0100	3	1	1695460	16/07/2020	Dark brown gravelly SAND
MPA_AUK_TP120_SO_0080	3	0.8	1695461	16/07/2020	Dark brown gravelly SAND
MPA_AUK_TP121_SO_0080	3	0.8	1695462	16/07/2020	Dark brown gravelly SAND
MPA_AUK_TP122_SO_0070	3	0.7	1695463	16/07/2020	Dark brown sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)
MPA_AUK_TP124_SO_0080	3	0.8	1695464	16/07/2020	Dark brown gravelly SAND
MPA_AUK_TP125_SO_0080	3	0.8	1695465	16/07/2020	Dark brown gravelly SAND

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695461	1695462
				MPA_AUK_TP123	MPA_AUK_TP120	MPA_AUK_TP121
			Sample ID	_SO_0100	_SO_0080	_SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	20000	40000	10000
Antimony	DETSC 2301*	1	mg/kg	5.0	4.9	13
Arsenic	DETSC 2301#	0.2	mg/kg	14	6.7	9.6
Barium	DETSC 2301#	1.5	mg/kg	250	390	280
Beryllium	DETSC 2301#	0.2	mg/kg	1.8	3.9	0.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	2.0	2.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.1	1.3
Chromium	DETSC 2301#	0.15	mg/kg	150	240	680
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	63	25	89
Iron	DETSC 2301	25	mg/kg	150000	92000	240000
Lead	DETSC 2301#	0.3	mg/kg	57	17	180
Magnesium	DETSC 2301*	1	mg/kg	31000	36000	35000
Manganese	DETSC 2301#	20	mg/kg	9200	8300	23000
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	5.9	2.3	10
Nickel	DETSC 2301#	1	mg/kg	41	12	39
Silicon	DETSC 2301*	10	mg/kg	15000	54000	21000
Vanadium	DETSC 2301#	0.8	mg/kg	320	270	2500
Zinc	DETSC 2301#	1	mg/kg	170	87	650
Inorganics						
pH	DETSC 2008#		pH	11.5	12.0	12.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.1	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.5	0.4	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	110	13
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	28	< 0.75

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695461	1695462
			Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP120 _SO_0080	MPA_AUK_TP121 _SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	5.5
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	33
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	86
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	130
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	130
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.15
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.04	0.12
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.03	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.04
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.47	< 0.10	0.42

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695461	1695462
			Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP120 _SO_0080	MPA_AUK_TP121 _SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
PCBs						
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01		
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695463	1695464	1695465
			Sample ID	MPA_AUK_TP122 _SO_0070	MPA_AUK_TP124 _SO_0080	MPA_AUK_TP125 _SO_0080
			Depth	0.70	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	44000	35000	2800
Antimony	DETSC 2301*	1	mg/kg	4.6	8.8	5.0
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	230	20
Barium	DETSC 2301#	1.5	mg/kg	500	240	570
Beryllium	DETSC 2301#	0.2	mg/kg	4.4	3.8	3.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.6	3.0	3.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	1.0	1.4
Chromium	DETSC 2301#	0.15	mg/kg	240	400	270
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30	110	37
Iron	DETSC 2301	25	mg/kg	85000	120000	5900
Lead	DETSC 2301#	0.3	mg/kg	59	140	200
Magnesium	DETSC 2301*	1	mg/kg	33000	21000	2200
Manganese	DETSC 2301#	20	mg/kg	10000	7200	1500
Mercury	DETSC 2325#	0.05	mg/kg	0.07	0.08	0.24
Molybdenum	DETSC 2301#	0.4	mg/kg	3.8	62	2.4
Nickel	DETSC 2301#	1	mg/kg	14	150	16
Silicon	DETSC 2301*	10	mg/kg	38000	55000	49000
Vanadium	DETSC 2301#	0.8	mg/kg	300	670	75
Zinc	DETSC 2301#	1	mg/kg	190	240	470
Inorganics						
pH	DETSC 2008#		pH	11.7	9.8	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	3.2	7.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.4	0.5	0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	260	1500	190
Sulphur (free)	DETSC 3049#	0.75	mg/kg	8.0	10	3.3

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Summary of Chemical Analysis
Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695463	1695464	1695465
				MPA_AUK_TP122	MPA_AUK_TP124	MPA_AUK_TP125
			Sample ID	_SO_0070	_SO_0080	_SO_0080
			Depth	0.70	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	2.0	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	33	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	37	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	2.5	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	39	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.08	0.20	0.16
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	0.43	0.39
Pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.37	0.32
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.22	0.13
Chrysene	DETSC 3303	0.03	mg/kg	0.06	0.19	0.14
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.26	0.20
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.11	0.08
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.16	0.11
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.08	0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.10	0.07
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.68	2.1	1.8

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Summary of Chemical Analysis

Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695463	1695464	1695465
			Sample ID	MPA_AUK_TP122 _SO_0070	MPA_AUK_TP124 _SO_0080	MPA_AUK_TP125 _SO_0080
			Depth	0.70	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
PCBs						
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01	
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695462	1695464
			Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP121 _SO_0080	MPA_AUK_TP124 _SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695462	1695464
			Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP121 _SO_0080	MPA_AUK_TP124 _SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1695460	1695462	1695464
			Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP121 _SO_0080	MPA_AUK_TP124 _SO_0080
			Depth	1.00	0.80	0.80
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	07/07/2020	07/07/2020	07/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

	Lab No	1695466	1695467	1695468
	Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP121 _SO_0080	MPA_AUK_TP124 _SO_0080
	Depth	1.00	0.80	0.80
	Other ID	3	3	3
	Sample Type	ES	ES	ES
	Sampling Date	07/07/2020	07/07/2020	07/07/2020
	Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
Preparation				
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y
Metals				
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.35	0.21	0.24
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.99	0.44	23
Barium, Dissolved	DETSC 2306	0.26	ug/l	40	380	53
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	63	37	76
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.04	0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	5.7	8.3	1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	6.6	9.7	3.2
Iron, Dissolved	DETSC 2306	5.5	ug/l	13	< 5.5	5.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	2.2	61	2.6
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.11	0.02	4.4
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.74	0.27	19
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	0.07	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	10	95	11
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	0.5
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	51	7.3	5.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	4.5	5.7
Inorganics				
pH	DETSC 2008		pH	11.3	12.2	8.5
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	2.9	9.3	3.5
Sulphate as SO4	DETSC 2055	0.1	mg/l	13	9.5	240

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

	Lab No	1695466	1695467	1695468
	Sample ID	MPA_AUK_TP123 _SO_0100	MPA_AUK_TP121 _SO_0080	MPA_AUK_TP124 _SO_0080
	Depth	1.00	0.80	0.80
	Other ID	3	3	3
	Sample Type	ES	ES	ES
	Sampling Date	07/07/2020	07/07/2020	07/07/2020
	Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	85	0.09	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.19	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	2.4	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	0.66	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.46	0.07	0.03
Anthracene	DETSC 3304	0.01	ug/l	0.38	0.02	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.07	0.01	0.04
Pyrene	DETSC 3304	0.01	ug/l	0.06	< 0.01	0.03
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.04	< 0.01	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.03
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.02
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.02
PAH Total	DETSC 3304	0.2	ug/l	90	0.23	0.30
Phenols				
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-12303-1
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1695460	MPA_AUK_TP123_SO_0100 3 1.00	SOIL	NAD	none	Colin Patrick
1695461	MPA_AUK_TP120_SO_0080 3 0.80	SOIL	NAD	none	Colin Patrick
1695462	MPA_AUK_TP121_SO_0080 3 0.80	SOIL	NAD	none	Colin Patrick
1695463	MPA_AUK_TP122_SO_0070 3 0.70	SOIL	NAD	none	Colin Patrick
1695464	MPA_AUK_TP124_SO_0080 3 0.80	SOIL	NAD	none	Colin Patrick
1695465	MPA_AUK_TP125_SO_0080 3 0.80	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-12303-1
Client Ref 4291
Contract Former Redcar Steelworks - Metal Processing Area

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1695460	MPA_AUK_TP123_SO_0100 1.00 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695461	MPA_AUK_TP120_SO_0080 0.80 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695462	MPA_AUK_TP121_SO_0080 0.80 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695463	MPA_AUK_TP122_SO_0070 0.70 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695464	MPA_AUK_TP124_SO_0080 0.80 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695465	MPA_AUK_TP125_SO_0080 0.80 SOIL	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695466	MPA_AUK_TP123_SO_0100 1.00 LEACHATE	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695467	MPA_AUK_TP121_SO_0080 0.80 LEACHATE	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1695468	MPA_AUK_TP124_SO_0080 0.80 LEACHATE	07/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number 20-12415

20-Jul-20

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 20-12415

Client Reference 4291

Order No (not supplied)

Contract Title Former Redcar Steelworks - Metal Processing Area

Description 6 Soil samples, 2 Leachate samples.

Date Received 10-Jul-20

Date Started 10-Jul-20

Date Completed 20-Jul-20

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
MP_AUK_TP106_SO_0100	3	1	1696136	20/07/2020	Dark grey very gravelly SAND
MP_AUK_TP107_SO_0090	3	0.9	1696137	20/07/2020	Dark grey very gravelly SAND
MP_AUK_TP112_SO_0090	3	0.9	1696138	20/07/2020	Dark grey very gravelly SAND
MP_AUK_TP113_SO_0090	3	0.9	1696139	20/07/2020	Dark grey very gravelly SAND
MP_AUK_TP117_SO_0060	3	0.6	1696140	20/07/2020	Dark grey very gravelly SAND
MP_AUK_TP118_SO_0080	3	0.8	1696141	20/07/2020	Dark grey very gravelly SAND

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696136	1696137	1696138	1696139	1696140	1696141
				MP_AUK	MP_AUK	MP_AUK	MP_AUK	MP_AUK	MP_AUK
				_TP106_S	_TP107_S	_TP112_S	_TP113_S	_TP117_S	_TP118_S
			Sample ID	O_0100	O_0090	O_0090	O_0090	O_0060	O_0080
			Depth	1.00	0.90	0.90	0.90	0.60	0.80
			Other ID	3	3	3	3	3	3
			Sample Type	ES	ES	ES	ES	ES	ES
			Sampling Date	08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Aluminium	DETSC 2301*	1	mg/kg	50000	14000	15000	11000	11000	25000
Antimony	DETSC 2301*	1	mg/kg	2.6	7.8	9.6	11	10	9.3
Arsenic	DETSC 2301#	0.2	mg/kg	33	3.1	5.7	5.5	1.1	6.4
Barium	DETSC 2301#	1.5	mg/kg	350	530	170	96	120	460
Beryllium	DETSC 2301#	0.2	mg/kg	4.6	1.0	0.3	0.2	0.2	1.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	7.8	7.7	3.1	3.5	2.4	4.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4	0.5	0.8	0.2	0.7
Chromium	DETSC 2301#	0.15	mg/kg	140	380	580	360	710	580
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	80	40	1500	27	44
Iron	DETSC 2301	25	mg/kg	59000	230000	200000	440000	140000	150000
Lead	DETSC 2301#	0.3	mg/kg	29	23	15	35	8.0	49
Magnesium	DETSC 2301*	1	mg/kg	29000	21000	40000	19000	30000	33000
Manganese	DETSC 2301#	20	mg/kg	29000	18000	21000	12000	15000	20000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.1	13	6.9	23	4.3	5.2
Nickel	DETSC 2301#	1	mg/kg	38	40	19	66	13	16
Silicon	DETSC 2301*	10	mg/kg	33000	26000	34000	35000	43000	39000
Vanadium	DETSC 2301#	0.8	mg/kg	410	490	760	190	770	510
Zinc	DETSC 2301#	1	mg/kg	140	72	110	460	60	180
Inorganics									
pH	DETSC 2008#		pH	11.1	11.9	12.1	12.0	12.3	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.3	0.2	0.4	< 0.1	0.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	0.7	0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.7	1.4	1.7	1.8	0.9	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	490	27	< 10	11	< 10	47
Sulphur (free)	DETSC 3049#	0.75	mg/kg	30	23	< 0.75	< 0.75	< 0.75	24
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	1.7	2.9	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	4.4	15	< 1.2	7.9	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	11	27	< 1.5	34	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	120	160	< 3.4	890	32	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	130	200	< 10	940	33	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696136	1696137	1696138	1696139	1696140	1696141
				MP_AUK_TP106_S	MP_AUK_TP107_S	MP_AUK_TP112_S	MP_AUK_TP113_S	MP_AUK_TP117_S	MP_AUK_TP118_S
			Sample ID	O_0100	O_0090	O_0090	O_0090	O_0060	O_0080
			Depth	1.00	0.90	0.90	0.90	0.60	0.80
			Other ID	3	3	3	3	3	3
			Sample Type	ES	ES	ES	ES	ES	ES
			Sampling Date	08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	1.3	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	100	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	110	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	130	200	< 10	1000	33	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.07	0.05	0.09	0.13	< 0.03	0.14
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.09	0.12	0.19	< 0.03	0.21
Pyrene	DETSC 3303#	0.03	mg/kg	0.09	0.08	0.09	0.14	< 0.03	0.16
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	0.04	< 0.03	0.07
Chrysene	DETSC 3303	0.03	mg/kg	0.06	0.06	0.06	0.09	< 0.03	0.10
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	0.05	0.05	0.08	< 0.03	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	< 0.03	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.05
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.41	0.33	0.40	0.70	< 0.10	0.98
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01				
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696136	1696140
				MP_AUK_TP106_SO_0100	MP_AUK_TP117_SO_0060
			Sample ID		
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696136	1696140
				MP_AUK_TP106_SO_0100	MP_AUK_TP117_SO_0060
			Sample ID		
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696136	1696140
				MP_AUK_TP106_SO_0100	MP_AUK_TP117_SO_0060
			Sample ID		
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

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Summary of Chemical Analysis

Leachate Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696142	1696143
				MP_AUK_TP106_S	MP_AUK_TP117_S
			Sample ID	O_0100	O_0060
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y
Metals					
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.52	0.28
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3	0.17
Barium, Dissolved	DETSC 2306	0.26	ug/l	22	18
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	190	130
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.1	4.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.8	7.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.49	0.07
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.92	0.26
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	1.4	3.2
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	39	10
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3
Inorganics					
pH	DETSC 2008		pH	9.6	11.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.067	0.024
Chloride	DETSC 2055	0.1	mg/l	3.7	4.0
Sulphate as SO4	DETSC 2055	0.1	mg/l	22	6.7
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1

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Summary of Chemical Analysis

Leachate Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1696142	1696143
				MP_AUK_TP106_SO_0100	MP_AUK_TP117_SO_0060
			Sample ID		
			Depth	1.00	0.60
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	08/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.33	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.30	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.11	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	0.11	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	1.5	0.02
Anthracene	DETSC 3304	0.01	ug/l	0.46	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	2.5	0.02
Pyrene	DETSC 3304	0.01	ug/l	1.9	0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	1.8	0.01
Chrysene	DETSC 3304	0.01	ug/l	2.2	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	3.3	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	1.0	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	2.3	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	2.1	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.45	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	2.2	0.02
PAH Total	DETSC 3304	0.2	ug/l	23	< 0.20
Phenols					
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-12415
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1696136	MP_AUK_TP106_SO_0100 3 1.00	SOIL	NAD	none	Joanne Luscombe
1696137	MP_AUK_TP107_SO_0090 3 0.90	SOIL	NAD	none	Joanne Luscombe
1696138	MP_AUK_TP112_SO_0090 3 0.90	SOIL	NAD	none	Joanne Luscombe
1696139	MP_AUK_TP113_SO_0090 3 0.90	SOIL	NAD	none	Joanne Luscombe
1696140	MP_AUK_TP117_SO_0060 3 0.60	SOIL	NAD	none	Joanne Luscombe
1696141	MP_AUK_TP118_SO_0080 3 0.80	SOIL	NAD	none	Joanne Luscombe

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-12415
Client Ref 4291
Contract Former Redcar Steelworks - Metal Processing Area

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests	Headspace in container for tests	
1696136	MP_AUK_TP106_SO_0100 1.00 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696137	MP_AUK_TP107_SO_0090 0.90 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696138	MP_AUK_TP112_SO_0090 0.90 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696139	MP_AUK_TP113_SO_0090 0.90 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696140	MP_AUK_TP117_SO_0060 0.60 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696141	MP_AUK_TP118_SO_0080 0.80 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2				
1696142	MP_AUK_TP106_SO_0100 1.00 LEACHATE	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2	pH/Cond/TDS (1 days)			
1696143	MP_AUK_TP117_SO_0060 0.60 LEACHATE	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2	pH/Cond/TDS (1 days)			

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number	20-12854
	24-Jul-20
Client	Allied Exploration & Geotechnics Limited Unit 25 Stella Gill Industrial Estate Pelton Fell DH2 2RG
Our Reference	20-12854
Client Reference	4291
Order No	(not supplied)
Contract Title	Former Redcar Steelworks - Metal Processing Area
Description	8 Soil samples, 1 Leachate sample.
Date Received	17-Jul-20
Date Started	17-Jul-20
Date Completed	24-Jul-20
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
MPA_AUK_TP126_SO_0080	3	0.8	1699073	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP127_SO_0090	3	0.9	1699074	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP128_SO_0090	3	0.9	1699075	24/07/2020	Dark brown gravelly SAND
MPA_AUYK_TP129_SO_0110	3	1.1	1699076	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP130_SO_0060	3	0.6	1699077	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP102A	3	1	1699078	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP110	3	1	1699079	24/07/2020	Dark brown gravelly SAND
MPA_AUK_TP111_SO_0120	3	1.2	1699080	24/07/2020	Dark brown gravelly SAND

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699073	1699074	1699075
			Sample ID	MPA_AUK_TP126 _SO_0080	MPA_AUK_TP127 _SO_0090	MPA_AUK_TP128 _SO_0090
			Depth	0.80	0.90	0.90
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	13/07/2020	10/07/2020	10/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	26000	17000	5000
Antimony	DETSC 2301*	1	mg/kg	7.2	10	9.8
Arsenic	DETSC 2301#	0.2	mg/kg	9.6	7.1	6.6
Barium	DETSC 2301#	1.5	mg/kg	800	280	49
Beryllium	DETSC 2301#	0.2	mg/kg	1.9	0.6	< 0.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	11	10	18
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.4
Chromium	DETSC 2301#	0.15	mg/kg	420	710	320
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	42	35	160
Iron	DETSC 2301	25	mg/kg	140000	140000	510000
Lead	DETSC 2301#	0.3	mg/kg	20	13	17
Magnesium	DETSC 2301*	1	mg/kg	33000	27000	30000
Manganese	DETSC 2301#	20	mg/kg	62000	32000	9800
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.9	3.3	68
Nickel	DETSC 2301#	1	mg/kg	27	20	100
Silicon	DETSC 2301*	10	mg/kg	46000	50000	29000
Vanadium	DETSC 2301#	0.8	mg/kg	490	800	120
Zinc	DETSC 2301#	1	mg/kg	60	53	63
Inorganics						
pH	DETSC 2008#		pH	12.0	12.5	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.3	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.2	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.2	1.9	2.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	11	13	24
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699073	1699074	1699075
			Sample ID	MPA_AUK_TP126 _SO_0080	MPA_AUK_TP127 _SO_0090	MPA_AUK_TP128 _SO_0090
			Depth	0.80	0.90	0.90
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	13/07/2020	10/07/2020	10/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	2.1
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	4.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	12
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	180
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	200
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	7.7
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	26
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	190
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	220
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	420
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.12	0.09	0.04
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.06
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.17	0.08	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.06	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.08	0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.04	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.79	0.31	0.13
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699076	1699077	1699078
			Sample ID	MPA_AUYK_TP129_SO_0110	MPA_AUK_TP130_SO_0060	MPA_AUK_TP102A
			Depth	1.10	0.60	1.00
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	13/07/2020	10/07/2020	13/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	19000	21000	23000
Antimony	DETSC 2301*	1	mg/kg	9.5	6.1	8.4
Arsenic	DETSC 2301#	0.2	mg/kg	5.3	20	32
Barium	DETSC 2301#	1.5	mg/kg	380	110	270
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	0.5	2.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.4	5.9	18
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.2	0.5
Chromium	DETSC 2301#	0.15	mg/kg	520	350	500
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	41	29	47
Iron	DETSC 2301	25	mg/kg	250000	140000	120000
Lead	DETSC 2301#	0.3	mg/kg	24	13	33
Magnesium	DETSC 2301*	1	mg/kg	31000	67000	31000
Manganese	DETSC 2301#	20	mg/kg	18000	18000	65000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	6.1	4.5	5.8
Nickel	DETSC 2301#	1	mg/kg	18	100	23
Silicon	DETSC 2301*	10	mg/kg	41000	40000	45000
Vanadium	DETSC 2301#	0.8	mg/kg	970	230	740
Zinc	DETSC 2301#	1	mg/kg	100	57	100
Inorganics						
pH	DETSC 2008#		pH	12.3	12.4	12.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	1.8
Organic matter	DETSC 2002#	0.1	%	1.9	1.1	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	44
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699076	1699077	1699078
			Sample ID	MPA_AUYK_TP129_SO_0110	MPA_AUK_TP130_SO_0060	MPA_AUK_TP102A
			Depth	1.10	0.60	1.00
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	13/07/2020	10/07/2020	13/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	2.0
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	5.8
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	28
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	37
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	4.1	< 0.5	2.8
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	15	< 0.6	16
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	35	< 1.4	60
Aromatic C5-C35	DETSC 3072*	10	mg/kg	54	< 10	79
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	54	< 10	120
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.27	< 0.03	0.09
Anthracene	DETSC 3303	0.03	mg/kg	0.04	0.05	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.41	< 0.03	0.23
Pyrene	DETSC 3303#	0.03	mg/kg	0.31	< 0.03	0.21
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	0.11
Chrysene	DETSC 3303	0.03	mg/kg	0.15	< 0.03	0.13
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03	0.15
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.9	< 0.10	1.1
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

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Summary of Chemical Analysis

Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699079	1699080
			Sample ID	MPA_AUK_TP110	MPA_AUK_TP111_SO_0120
			Depth	1.00	1.20
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	13/07/2020	10/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Aluminium	DETSC 2301*	1	mg/kg	17000	15000
Antimony	DETSC 2301*	1	mg/kg	6.7	9.4
Arsenic	DETSC 2301#	0.2	mg/kg	3.5	2.5
Barium	DETSC 2301#	1.5	mg/kg	140	240
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	0.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	3.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	360	620
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	28	28
Iron	DETSC 2301	25	mg/kg	120000	160000
Lead	DETSC 2301#	0.3	mg/kg	21	28
Magnesium	DETSC 2301*	1	mg/kg	34000	37000
Manganese	DETSC 2301#	20	mg/kg	16000	20000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	3.6	3.6
Nickel	DETSC 2301#	1	mg/kg	24	11
Silicon	DETSC 2301*	10	mg/kg	32000	33000
Vanadium	DETSC 2301#	0.8	mg/kg	340	840
Zinc	DETSC 2301#	1	mg/kg	160	73
Inorganics					
pH	DETSC 2008#		pH	12.3	12.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.8
Organic matter	DETSC 2002#	0.1	%	1.4	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75

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Summary of Chemical Analysis
Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Test	Method	LOD	Units	Lab No 1699079	Lab No 1699080
				Sample ID MPA_AUK_TP110	Sample ID MPA_AUK_TP111_SO_0120
				Depth 1.00	Depth 1.20
				Other ID 3	Other ID 3
				Sample Type ES	Sample Type ES
				Sampling Date 13/07/2020	Sampling Date 10/07/2020
				Sampling Time n/s	Sampling Time n/s
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	4.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	15	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	39	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	60	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	60	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.28	0.06
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.34	0.07
Pyrene	DETSC 3303#	0.03	mg/kg	0.27	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.15	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	0.05
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.19	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.7	0.28
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	1699080
Sample ID	MPA_AUK_TP111_SO_0120
Depth	1.20
Other ID	3
Sample Type	ES
Sampling Date	10/07/2020
Sampling Time	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	1699080
Sample ID	MPA_AUK_TP111_SO_0120
Depth	1.20
Other ID	3
Sample Type	ES
Sampling Date	10/07/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	1699080
Sample ID	MPA_AUK_TP111_SO_0120
Depth	1.20
Other ID	3
Sample Type	ES
Sampling Date	10/07/2020
Sampling Time	n/s

Test	Method	LOD	Units	
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	1699081
Sample ID	MPA_AUK_TP111 _SO_0120
Depth	1.20
Other ID	3
Sample Type	ES
Sampling Date	10/07/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y
Metals				
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.31
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.33
Barium, Dissolved	DETSC 2306	0.26	ug/l	560
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	7.8
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	13
Iron, Dissolved	DETSC 2306	5.5	ug/l	5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	11
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.05
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.40
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.04
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	25
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3
Inorganics				
pH	DETSC 2008		pH	12.3
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Chloride	DETSC 2055	0.1	mg/l	4.6
Sulphate as SO4	DETSC 2055	0.1	mg/l	3.3
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1699081
				MPA_AUK_TP111
			Sample ID	_SO_0120
			Depth	1.20
			Other ID	3
			Sample Type	ES
			Sampling Date	10/07/2020
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.06
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
Phenols				
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-12854
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1699073	MPA_AUK_TP126_SO_0080 3 0.80	SOIL	NAD	none	Jordan Eadington
1699074	MPA_AUK_TP127_SO_0090 3 0.90	SOIL	NAD	none	Jordan Eadington
1699075	MPA_AUK_TP128_SO_0090 3 0.90	SOIL	NAD	none	Jordan Eadington
1699076	MPA_AUYK_TP129_SO_0110 3 1.10	SOIL	NAD	none	Jordan Eadington
1699077	MPA_AUK_TP130_SO_0060 3 0.60	SOIL	Chrysotile	Small Bundles of Chrysotile Present	Jordan Eadington
1699078	MPA_AUK_TP102A 3 1.00	SOIL	Chrysotile	Large bundle of Chrysotile present	Jordan Eadington
1699079	MPA_AUK_TP110 3 1.00	SOIL	NAD	none	Jordan Eadington
1699080	MPA_AUK_TP111_SO_0120 3 1.20	SOIL	NAD	none	Jordan Eadington

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-12854
Client Ref 4291
Contract Former Redcar Steelworks - Metal Processing Area

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1699073	MPA_AUK_TP126_SO_0080 0.80 SOIL	13/07/20	GJ 250ml x2, GJ 60ml x2, PT 500ml x2		
1699074	MPA_AUK_TP127_SO_0090 0.90 SOIL	10/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1699075	MPA_AUK_TP128_SO_0090 0.90 SOIL	10/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1699076	MPA_AUYK_TP129_SO_011 0 1.10 SOIL	13/07/20	GJ 250ml x2, GJ 60ml x2, PT 500ml x2		
1699077	MPA_AUK_TP130_SO_0060 0.60 SOIL	10/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1699078	MPA_AUK_TP102A 1.00 SOIL	13/07/20	GJ 250ml x2, GJ 60ml x2, PT 500ml x2		
1699079	MPA_AUK_TP110 1.00 SOIL	13/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1699080	MPA_AUK_TP111_SO_0120 1.20 SOIL	10/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1699081	MPA_AUK_TP111_SO_0120 1.20 LEACHATE	10/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number	20-13862
	06-Aug-20
Client	Allied Exploration & Geotechnics Limited Unit 25 Stella Gill Industrial Estate Pelton Fell DH2 2RG
Our Reference	20-13862
Client Reference	4291
Order No	(not supplied)
Contract Title	Former Redcar Steelworks - Metal Processing Area
Description	7 Soil samples, 2 Leachate samples.
Date Received	29-Jul-20
Date Started	30-Jul-20
Date Completed	06-Aug-20
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
MPA_AUK_TP101_SO_0090	3	0.9	1705062	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP101_SO_0350	9	3.5	1705063	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP102_SO_0060	3	0.6	1705064	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP103_SO_0080	3	0.8	1705065	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP104_SO_0100	3	1	1705066	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP105_SO_0100	3	1	1705067	06/08/2020	Dark brown gravelly SAND
MPA_AUK_TP108_SO_0100	3	1	1705068	06/08/2020	Dark brown gravelly SAND

Summary of Chemical Analysis
Soil Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705062	1705063	1705064	1705065
				MPA_AUK_TP101_SO_00	MPA_AUK_TP101_SO_03	MPA_AUK_TP102_SO_00	MPA_AUK_TP103_SO_00
			Sample ID	90	50	60	80
			Depth	0.90	3.50	0.60	0.80
			Other ID	3	9	3	3
			Sample Type	ES	ES	ES	ES
			Sampling Date	09/07/2020	09/07/2020	09/07/2020	09/07/2020
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	9700	19000	20000	20000
Antimony	DETSC 2301*	1	mg/kg	2.4	13	8.5	8.1
Arsenic	DETSC 2301#	0.2	mg/kg	64	220	31	13
Barium	DETSC 2301#	1.5	mg/kg	120	890	220	360
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	2.0	0.7	0.7
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	19	7.5	5.1	4.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	7.6	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	130	320	570	500
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	170	250	110	55
Iron	DETSC 2301	25	mg/kg	39000	190000	230000	200000
Lead	DETSC 2301#	0.3	mg/kg	68	480	43	39
Magnesium	DETSC 2301*	1	mg/kg	7600	17000	40000	35000
Manganese	DETSC 2301#	20	mg/kg	14000	30000	28000	26000
Mercury	DETSC 2325#	0.05	mg/kg	0.20	1.9	0.12	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.5	7.8	5.1	4.6
Nickel	DETSC 2301#	1	mg/kg	12	56	19	19
Silicon	DETSC 2301*	10	mg/kg	130000	52000	29000	22000
Vanadium	DETSC 2301#	0.8	mg/kg	90	780	510	730
Zinc	DETSC 2301#	1	mg/kg	160	1600	150	140
Inorganics							
pH	DETSC 2008#		pH	11.2	11.3	12.7	12.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.0	20	0.4	1.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	< 0.6	0.9	< 0.6
Organic matter	DETSC 2002#	0.1	%	4.0	3.8	1.4	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	900	630	< 10	11
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.8	35	< 0.75	2.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

				Lab No	1705062	1705063	1705064	1705065
					MPA_AUK_TP101_SO_00	MPA_AUK_TP101_SO_03	MPA_AUK_TP102_SO_00	MPA_AUK_TP103_SO_00
				Sample ID	90	50	60	80
				Depth	0.90	3.50	0.60	0.80
				Other ID	3	9	3	3
				Sample Type	ES	ES	ES	ES
				Sampling Date	09/07/2020	09/07/2020	09/07/2020	09/07/2020
				Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	1.6
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	2.4
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	17	< 1.5	6.8
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	350	< 3.4	37
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	370	< 10	48
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	4.8	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	24	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	8.1	160	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	190	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	560	< 10	48
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.42	< 0.03	0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.39	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.66	< 0.03	0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.25	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8	< 0.03	0.81
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.87	< 0.03	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	7.6	0.09	0.83
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	4.8	0.06	0.55
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	2.5	< 0.03	0.17
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	2.7	< 0.03	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	4.6	< 0.03	0.26
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5	< 0.03	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	4.2	< 0.03	0.14
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.5	< 0.03	0.10
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.55	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	3.5	< 0.03	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	39	0.16	3.6
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processin

			Lab No	1705066	1705067	1705068
				MPA_AUK_TP104_SO_01	MPA_AUK_TP105_SO_01	MPA_AUK_TP108_SO_01
			Sample ID	00	00	00
			Depth	1.00	1.00	1.00
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	09/07/2020	09/07/2020	08/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	22000	14000	12000
Antimony	DETSC 2301*	1	mg/kg	3.5	10	10
Arsenic	DETSC 2301#	0.2	mg/kg	60	6.7	0.8
Barium	DETSC 2301#	1.5	mg/kg	230	500	130
Beryllium	DETSC 2301#	0.2	mg/kg	3.3	1.0	0.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	28	12	2.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg	120	500	740
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	46	39	22
Iron	DETSC 2301	25	mg/kg	80000	200000	170000
Lead	DETSC 2301#	0.3	mg/kg	17	20	12
Magnesium	DETSC 2301*	1	mg/kg	23000	31000	29000
Manganese	DETSC 2301#	20	mg/kg	62000	27000	19000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	9.1	7.8	4.4
Nickel	DETSC 2301#	1	mg/kg	39	17	5.8
Silicon	DETSC 2301*	10	mg/kg	39000	36000	30000
Vanadium	DETSC 2301#	0.8	mg/kg	170	400	830
Zinc	DETSC 2301#	1	mg/kg	82	84	59
Inorganics						
pH	DETSC 2008#		pH	11.6	12.4	12.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6	0.5	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.9	1.2	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	95	34	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.3	< 0.75	< 0.75

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processin

			Lab No	1705066	1705067	1705068
				MPA_AUK_TP104_SO_01	MPA_AUK_TP105_SO_01	MPA_AUK_TP108_SO_01
			Sample ID	00	00	00
			Depth	1.00	1.00	1.00
			Other ID	3	3	3
			Sample Type	ES	ES	ES
			Sampling Date	09/07/2020	09/07/2020	08/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.15	< 0.03	0.09
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.41	0.05	0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.29	< 0.03	0.05
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.15	< 0.03	0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.2	< 0.10	0.37
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705065	1705068
			Sample ID	MPA_AUK_TP103 _SO_0080	MPA_AUK_TP108 _SO_0100
			Depth	0.80	1.00
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	09/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705065	1705068
			Sample ID	MPA_AUK_TP103 _SO_0080	MPA_AUK_TP108 _SO_0100
			Depth	0.80	1.00
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	09/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705065	1705068
			Sample ID	MPA_AUK_TP103 _SO_0080	MPA_AUK_TP108 _SO_0100
			Depth	0.80	1.00
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	09/07/2020	08/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705069	1705070
			Sample ID	MPA_AUK_TP103 _SO_0080	MPA_AUK_TP108 _SO_0100
			Depth	0.80	1.00
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	09/07/2020	09/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y
Metals					
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.29	< 0.17
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.37	0.35
Barium, Dissolved	DETSC 2306	0.26	ug/l	250	290
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12	80
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	3.6	6.6
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	12	9.0
Iron, Dissolved	DETSC 2306	5.5	ug/l	350	34
Lead, Dissolved	DETSC 2306	0.09	ug/l	2.2	0.37
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.23	0.23
Manganese, Dissolved	DETSC 2306	0.22	ug/l	0.62	0.50
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	1.8	1.8
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.4	3.4
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3
Inorganics					
pH	DETSC 2008		pH	11.3	11.8
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015
Chloride	DETSC 2055	0.1	mg/l	2.8	11
Sulphate as SO4	DETSC 2055	0.1	mg/l	5.1	7.7

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

			Lab No	1705069	1705070
			Sample ID	MPA_AUK_TP103 _SO_0080	MPA_AUK_TP108 _SO_0100
			Depth	0.80	1.00
			Other ID	3	3
			Sample Type	ES	ES
			Sampling Date	09/07/2020	09/07/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	0.19
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	0.02
Acenaphthene	DETSC 3304	0.01	ug/l	0.13	0.02
Fluorene	DETSC 3304	0.01	ug/l	0.03	0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.08	0.04
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	0.04
Fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.32	0.34
Phenols					
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-13862
Client Ref 4291
Contract Title Former Redcar Steelworks - Metal Processing Area

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1705062	MPA_AUK_TP101_SO_0090 3 0.90	SOIL	NAD	none	Joanne Luscombe
1705063	MPA_AUK_TP101_SO_0350 9 3.50	SOIL	Chrysotile	small bundles of Chrysotile present	Joanne Luscombe
1705064	MPA_AUK_TP102_SO_0060 3 0.60	SOIL	NAD	none	Joanne Luscombe
1705065	MPA_AUK_TP103_SO_0080 3 0.80	SOIL	NAD	none	Joanne Luscombe
1705066	MPA_AUK_TP104_SO_0100 3 1.00	SOIL	NAD	none	Joanne Luscombe
1705067	MPA_AUK_TP105_SO_0100 3 1.00	SOIL	NAD	none	Joanne Luscombe
1705068	MPA_AUK_TP108_SO_0100 3 1.00	SOIL	NAD	none	Joanne Luscombe

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-13862
Client Ref 4291
Contract Former Redcar Steelworks - Metal Processing Area

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1705062	MPA_AUK_TP101_SO_0090 0.90 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705063	MPA_AUK_TP101_SO_0350 3.50 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705064	MPA_AUK_TP102_SO_0060 0.60 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705065	MPA_AUK_TP103_SO_0080 0.80 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705066	MPA_AUK_TP104_SO_0100 1.00 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705067	MPA_AUK_TP105_SO_0100 1.00 SOIL	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705068	MPA_AUK_TP108_SO_0100 1.00 SOIL	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705069	MPA_AUK_TP103_SO_0080 0.80 LEACHATE	09/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1705070	MPA_AUK_TP108_SO_0100 1.00 LEACHATE	08/07/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

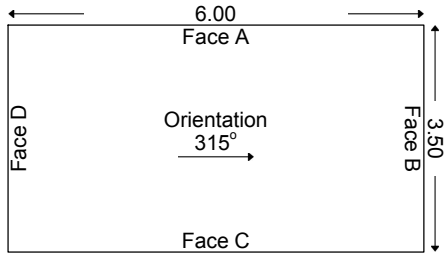
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP101
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454685.392 N:522293.388		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.969	**Start Date:** 09/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(1.00)	MADE GROUND (Brown/black grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and ash. Slag content is 75-100%. Slag is vesicular).
0.60	B2						
0.90	ES3					1.00	
1.70	J4					(1.50)	MADE GROUND (Grey green yellow blue and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
1.90	B5						
2.40	LB6					2.50	
2.80	J7					(2.00)	MADE GROUND (Brown very sandy gravel with clow to medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes concrete, slag and yellow brick. Slag content is 25-50%. Slag is grey, green and white vesicular. Cobbles are angular and include concrete, slag and yellow brick. Slag content is 25-50%. Slag is grey vesicular).
3.20	B8						
3.50	ES9						
3.80	J10						
4.20	B11					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:30:33

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP101
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454685.392 N:522293.388		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.969	**Start Date:** 09/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP101.1
MPA_AUK_TP101

Figure MPA_AUK_TP101.2
MPA_AUK_TP101

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454685.392 N:522293.388		**MPA_AUK_TP101**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.969	**Start Date:** 09/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP101.3
MPA_AUK_TP101

Figure MPA_AUK_TP101.4
MPA_AUK_TP101 Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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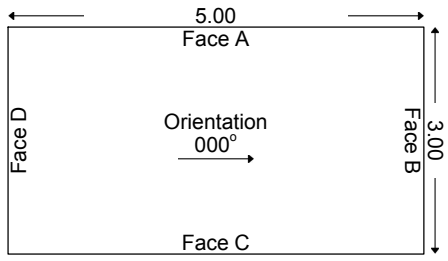
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP102
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454663.223 N:522364.102		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.667	**Start Date:** 09/07/2020	**Sheet:** 1 of 2

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.20	MADE GROUND (Brown clayey slightly gravelly sand with many rootlets and wood fragments. Sand is fine to coarse. Gravel is fine to medium subangular and includes concrete and brick).
0.30	J1					(0.60)	
0.50	B2						MADE GROUND (Brown grey/blue sandy gravel. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular).
0.60	ES3					0.80	*Terminated at 0.80m BGL - due to encountering concrete slab. Unable to extend pit due to near by services.*

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:30:59

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP102
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454663.223 N:522364.102		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.667	**Start Date:** 09/07/2020	**Sheet:** 2 of 2

Figure MPA_AUK_TP102.1
MPA_AUK_TP102

Figure MPA_AUK_TP102.2
MPA_AUK_TP102 Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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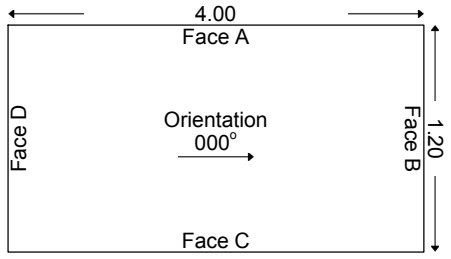
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454663.000 N:522394.000		**MPA_AUK_TP102A**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.700	**Start Date:** 13/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown black grey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 75-100%. Slag is vesicular). between c.0.00-4.50m BGL ... slag is assessed as loose throughout excavation.
0.50	J1						
0.80	B2						MADE GROUND (Grey green gravel with high cobble and boulder content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular. Boulders are angular and include slag. Slag content is 100%. Slag is vesicular).
1.00	ES3						
1.60	J4						
1.80	B5						
2.10	LB6					(4.10)	
2.60	J7						
2.80	B8						
3.60	J9						between c.3.50-4.50m BGL ... slag becomes very sandy with occasional yellow and red bricks.
3.80	B10						
4.30	J11					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base unstable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
(1) Coordinates and level are approximate.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:31:07

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454663.000 N:522394.000		**MPA_AUK_TP102A**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.700	**Start Date:** 13/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP102A.1
MPA_AUK_TP102A

Figure MPA_AUK_TP102A.2
MPA_AUK_TP102A

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454663.000 N:522394.000		**MPA_AUK_TP102A**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.700	**Start Date:** 13/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP102A.3
MPA_AUK_TP102A Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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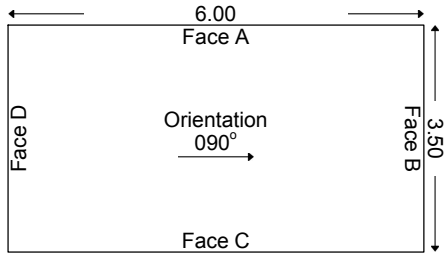
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454579.895 N:522486.316		**MPA_AUK_TP103**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.210	**Start Date:** 09/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.80)	MADE GROUND (Brown/black grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and ash. Slag content is 75-100%. Slag is vesicular).
0.60	J1					0.80	
0.70	B2					0.90	
0.80	ES3						MADE GROUND (White yellow gravel. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular).
							MADE GROUND (Grey green yellow blue and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
1.50	J4						between c.0.90-4.50m BGL ... slag is assessed as loose.
1.80	B5						at c.1.40m BGL ... 25mm black cable running 270 degrees in centre of pit (redundant/broken).
2.30	LB6						
2.60	J7					(3.60)	
2.80	B8						
3.60	J9						
3.80	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base moderatley stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:31:20

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP103
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454579.895 N:522486.316		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.210	**Start Date:** 09/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP103.1
MPA_AUK_TP103

Figure MPA_AUK_TP103.2
MPA_AUK_TP103

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP103
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454579.895 N:522486.316		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.210	**Start Date:** 09/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP103.3
MPA_AUK_TP103

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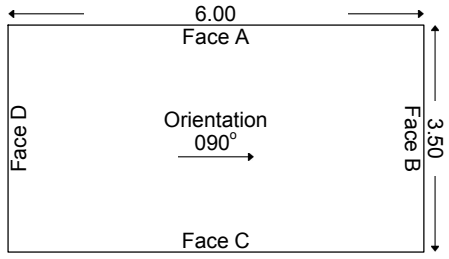
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454628.462 N:522443.719		**MPA_AUK_TP104**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.600	**Start Date:** 09/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown/black grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and ash. Slag content is 75-100%. Slag is vesicular).
0.50	J1						MADE GROUND (Grey green yellow blue and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
0.80	B2						between c.0.40-4.50m BGL ... slag is assessed as loose and iron rich.
1.00	ES3						
1.60	J4						
1.80	B5						
2.40	LB6					(4.10)	
2.70	J7						
2.90	B8						
3.70	J9						
3.90	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base unstable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP104
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454628.462 N:522443.719		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.600	**Start Date:** 09/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP104.1
MPA_AUK_TP104

Figure MPA_AUK_TP104.2
MPA_AUK_TP104

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454628.462 N:522443.719		**MPA_AUK_TP104**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.600	**Start Date:** 09/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP104.3
MPA_AUK_TP104 Spoil

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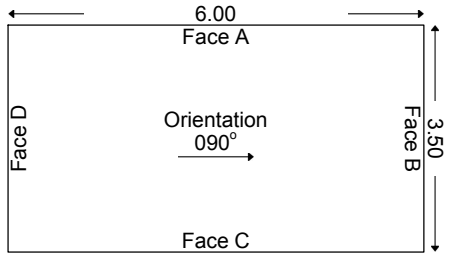
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454523.260 N:522578.126		**MPA_AUK_TP105**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.360	**Start Date:** 09/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(2.20)	MADE GROUND (Brown/black grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular slag, concrete and ash. Slag content 75-100%. Slag is vesicular).
0.70	B2						
1.00	ES3						between c.0.90-4.50m BGL ... slag is assessed as loose.
1.40	J4						at c.1.40m BGL ... 25mm black cable running 270 degrees in centre of pit (redundant/broken).
1.70	B5					2.20	
2.60	J6					(2.30)	MADE GROUND (Grey green yellow blue and white gravel with with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content 100%. Slag is vesicular).
2.70	B7						
2.80	LB8						
3.60	J9						
3.70	B10					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base moderately stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP105
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454523.260 N:522578.126		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.360	**Start Date:** 09/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP105.1
MPA_AUK_TP105

Figure MPA_AUK_TP105.2
MPA_AUK_TP105

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454523.260 N:522578.126		**MPA_AUK_TP105**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.360	**Start Date:** 09/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP105.3
MPA_AUK_TP105 Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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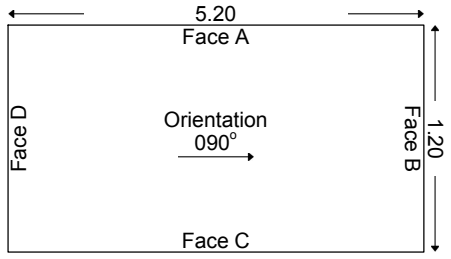
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454634.271 N:522536.013		**MPA_AUK_TP106**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly include ash. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.50	J1						
0.80	B2					(1.10)	MADE GROUND (Grey green yellow sandy gravel with high cobble content. Sand is fine to coarse and includes ash. Gravel is fine to coarse subangular and includes slag and yellow brick, concrete and ash. Slag content is 50-75%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
1.00	ES3					1.50	
1.60	J4						MADE GROUND (Grey green white sandy gravel with high cobble content. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, ash, clinker and yellow crystalline textured brick. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and include yellow brick and slag. Slag content is 75-100%. Slag is vesicular).
1.80	B5						
2.20	LB6						
2.60	J7						between c.1.50-4.50m BGL ... lenses of orange brown slightly clayey sandy gravel. Sand is fine to coarse and includes ash. Gravel is fine to coarse subangular and include clinker, ash and burnt mudstone.
2.80	B8					(3.00)	
3.60	J9						
3.80	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. Between c.3.00-4.50m BGL - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP106
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454634.271 N:522536.013		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP106.1
MPA_AUK_TP106

Figure MPA_AUK_TP106.2
MPA_AUK_TP106

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454634.271 N:522536.013		**MPA_AUK_TP106**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP106.3
MPA_AUK_TP106

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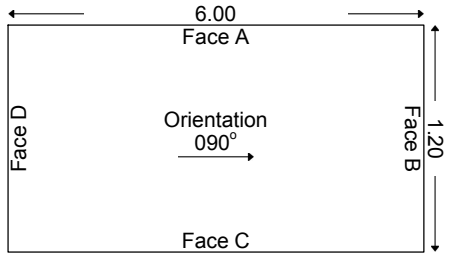
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454713.495 N:522550.212		**MPA_AUK_TP107**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.450	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.50	J1					(1.40)	MADE GROUND (Brown grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.70	B2						
0.90	ES3					1.40	
1.70	J4					(3.10)	MADE GROUND (Grey green yellow gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.1.50-2.50m BGL ... occasional cobbles. Cobbles are angular and include yellow brick.
1.90	B5						
2.20	LB6						
2.70	J7						
2.90	B8						
3.70	J9						
3.90	B10					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.Between c.3.70-4.50m BGL - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP107
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454713.495 N:522550.212		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.450	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP107.1
MPA_AUK_TP107

Figure MPA_AUK_TP107.2
MPA_AUK_TP107

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454713.495 N:522550.212		**MPA_AUK_TP107**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.450	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP107.3
MPA_AUK_TP107

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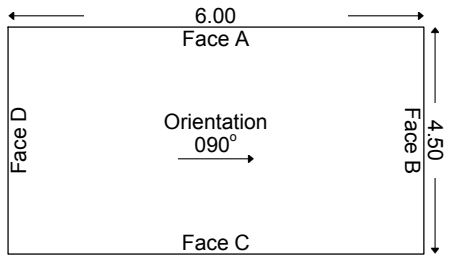
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP108
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454686.549 N:522511.326		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.400	**Start Date:** 09/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.50) 0.50	MADE GROUND (Brown grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular slag and concrete. Slag content 75-100%. Slag is vesicular).
0.60	J1						MADE GROUND (Grey green yellow blue and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag and yellow brick. Slag content 75-100%. Slag is vesicular. Cobbles are angular and include slag. Slag content 100%. Slag is vesicular).
0.80	B2						
1.00	ES3						
1.60	J4						
1.80	B5						
2.30	LB6					(4.00)	
2.60	J7						
2.80	B8						
3.60	J9						
3.80	B10						
						4.50	*Complete at 4.50m BGL.*

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454686.549 N:522511.326		**MPA_AUK_TP108**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.400	**Start Date:** 09/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP108.1
MPA_AUK_TP108

Figure MPA_AUK_TP108.2
MPA_AUK_TP108

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP108
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454686.549 N:522511.326		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.400	**Start Date:** 09/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP108.3
MPA_AUK_TP108

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

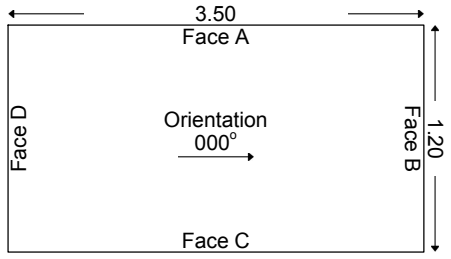
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.688 N:522714.469		**MPA_AUK_TP109**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.643	**Start Date:** 06/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.20	MADE GROUND (Grey brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, concrete and slag. Slag content is 50-75%. Slag is vesicular).
0.40	J1						
0.80	B2						MADE GROUND (Grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
0.90	ES3						between c.0.20-4.50m BGL ... pocket of red brown gravel. Gravel is fine subangular and include iron/clinker.
1.60	J4						
1.80	B5						
2.00	LB6						between c.2.00-4.50m BGL ... some recovered slag has white precipitate deposits on surface.
						(4.30)	
2.60	J7						
3.00	B8						
3.60	J9						
4.00	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:33:05

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.688 N:522714.469		**MPA_AUK_TP109**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.643	**Start Date:** 06/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP109.1
MPA_AUK_TP109

Figure MPA_AUK_TP109.2
MPA_AUK_TP109

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP109
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.688 N:522714.469		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.643	**Start Date:** 06/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP109.3
MPA_AUK_TP109

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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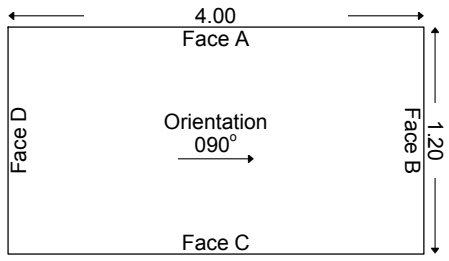
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454518.889 N:522657.800		**MPA_AUK_TP110**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.589	**Start Date:** 13/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.50) 0.50	MADE GROUND (Brown black grey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 75-100%. Slag is vesicular).
0.60	J1						MADE GROUND (Grey gravel with high cobble content with metal and wood fragments. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 25-50%. Slag is vesicular. Cobbles are angular and include slag and concrete. Slag content is 75-100%. Slag is vesicular).
0.80	B2						
1.00	ES3						
						(1.90)	
1.60	J4						
1.80	B5						
2.20	LB6					2.40	
						(0.60)	MADE GROUND (Grey blue compacted sandy gravel with medium cobble content. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes yellow brick, slag and concrete. Slag content is 50-75%. Slag is vesicular. Cobbles are angular and include yellow brick and slag. Slag content is 25-50%. Slag is vesicular).
2.70	J7						
2.90	B8					3.00	
3.40	J9						MADE GROUND (Grey green and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.3.00-4.50m BGL ... slag is assessed as loose throughout excavation.
3.60	B10					(1.50)	
4.40	J11					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base unstable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454518.889 N:522657.800		**MPA_AUK_TP110**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.589	**Start Date:** 13/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP110.1
MPA_AUK_TP110

Figure MPA_AUK_TP110.2
MPA_AUK_TP110

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454518.889 N:522657.800		**MPA_AUK_TP110**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.589	**Start Date:** 13/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP110.3
MPA_AUK_TP110

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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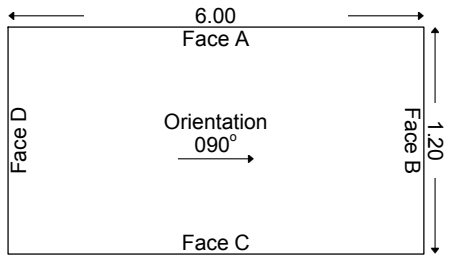
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454573.911 N:522689.264		**MPA_AUK_TP111**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 5.420	**Start Date:** 10/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.50	J1					(1.30)	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular slag, concrete and yellow and red brick. Slag content 75-100%. Slag is vesicular).
0.80	B2						
1.20	ES3					1.30	at c.1.10-1.40m BGL ... iron girder running 225 degrees.
1.60	J4						MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content 100%. Slag is vesicular). between c.1.40-1.70m BGL ... concrete beneath iron girder.
1.80	B5						
2.20	LB6						
2.60	J7						
2.80	B8					(3.20)	
3.60	J9						
3.80	B10		▼1				
4.20	J11					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
At c.3.30m BGL - slag is Damp. Water strike at 3.90m BGL (Moderate Inflow).

STABILITY
Pit sides and base moderately stable between 0.00-1.30m BGL good below.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454573.911 N:522689.264		**MPA_AUK_TP111**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 5.420	**Start Date:** 10/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP111.1
MPA_AUK_TP111

Figure MPA_AUK_TP111.2
MPA_AUK_TP111

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP111
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454573.911 N:522689.264		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 5.420	**Start Date:** 10/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP111.3
MPA_AUK_TP111

Figure MPA_AUK_TP111.4
MPA_AUK_TP111

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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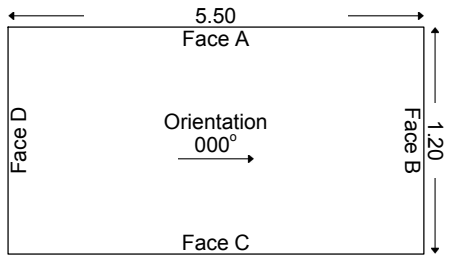
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454678.306 N:522609.878		**MPA_AUK_TP112**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.496	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.60 0.70 0.90	J1 B2 ES3					(1.40) 1.40	MADE GROUND (Brown grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
1.60 1.80 2.10 2.60 2.80 3.70 3.90 4.30	J4 B5 LB6 J7 B8 J9 B10 J11					(3.10) 4.50	MADE GROUND (Grey green yellow blue and white sandy gravel with high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag, yellow brick, concrete and ash. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.2.00-4.50m BGL ... slag is more iron rich.
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. At c.3.70-4.50m BGL - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:33:35

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454678.306 N:522609.878		**MPA_AUK_TP112**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.496	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP112.1
MPA_AUK_TP112

Figure MPA_AUK_TP112.2
MPA_AUK_TP112

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP112
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454678.306 N:522609.878		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.496	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP112.3
MPA_AUK_TP112

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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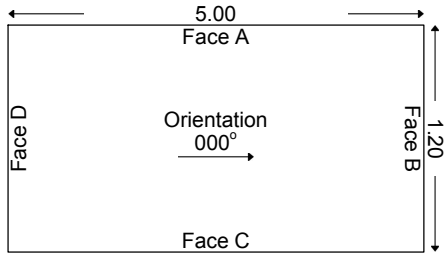
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454705.251 N:522610.362		**MPA_AUK_TP113**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.446	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown grey sandy gravel with wood and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.60	J1						MADE GROUND (Grey green yellow blue and white gravel with high cobble content. Gravel is fine to coarse subangular and includes slag and yellow brick. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
0.80	B2						
0.90	ES3						at c.1.20m BGL ... fine to medium sand (relic bedding for a cable).
1.60	J4						
1.80	B5						
2.30	LB6					(4.10)	between c.2.40-4.50m BGL ... lenses of red brown slightly clayey sandy gravel. Sand is fine to coarse and includes ash and clinker. Gravel is fine to coarse subangular and includes ash, clinker and burnt mudstone.
2.60	J7						
2.80	B8						
3.60	J9						
3.80	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. At c.3.50-4.50m BGL - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454705.251 N:522610.362		**MPA_AUK_TP113**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.446	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP113.1
MPA_AUK_TP113

Figure MPA_AUK_TP113.2
MPA_AUK_TP113

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP113
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454705.251 N:522610.362		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.446	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP113.3
MPA_AUK_TP113

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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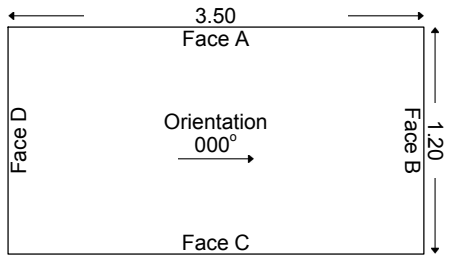
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454345.840 N:522786.212		**MPA_AUK_TP114**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.035	**Start Date:** 06/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown grey gravel. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular).
0.60 0.70 0.80	J1 B2 ES2A					(1.20) 1.60	MADE GROUND (Brown grey green beige gravel. Gravel is medium to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular).
1.70 1.80 2.30 2.50 3.30 3.80 4.30	J3 B4 J5 LB6 J7 B8 J9					(2.90) 4.50	MADE GROUND (Compacted grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). at c.2.60m BGL ... slag is fused.
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:33:48

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP114
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454345.840 N:522786.212		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.035	**Start Date:** 06/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP114.1
MPA_AUK_TP114

Figure MPA_AUK_TP114.2
MPA_AUK_TP114

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454345.840 N:522786.212		**MPA_AUK_TP114**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 10.035	**Start Date:** 06/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP114.3
MPA_AUK_TP114

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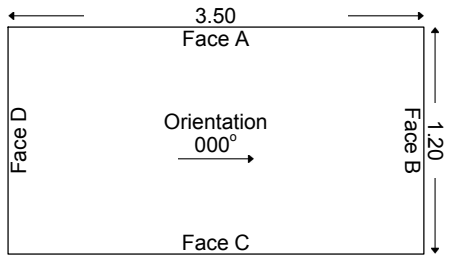
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454484.884 N:522797.577		**MPA_AUK_TP115**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.046	**Start Date:** 06/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Grey brown sandy gravel with low cobble content. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes yellow brick, concrete and slag. Slag content is 50-75%. Slag is vesicular).
0.40	J1						
0.50	B2						
0.60	ES3					(1.00)	MADE GROUND (Grey/blue sandy gravel. Sand is fine to coarse and includes blue grey ash like substance. Gravel is fine to coarse subangular and includes slag. Slag content is 50-75%. Slag is vesicular).
						1.30	
1.40	J4						MADE GROUND (Grey green blue beige gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
1.50	B5						
2.00	LB6						
2.60	J7						
2.80	B8					(3.20)	
3.80	J9						
4.00	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. At c.3.80m BGL - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP115
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454484.884 N:522797.577		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.046	**Start Date:** 06/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP115.1
MPA_AUK_TP115

Figure MPA_AUK_TP115.2
MPA_AUK_TP115

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP115
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454484.884 N:522797.577		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.046	**Start Date:** 06/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP115.3
MPA_AUK_TP115

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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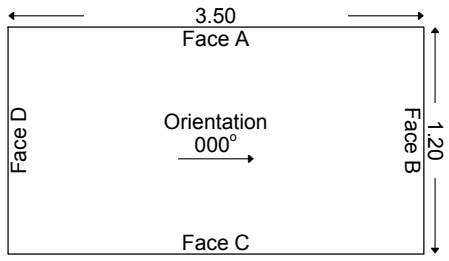
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454567.524 N:522775.268		**MPA_AUK_TP116**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.355	**Start Date:** 06/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Grey brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes yellow brick, concrete and slag. Slag content is 50-75%. Slag is vesicular).
0.40	J1						
0.60	B2						
0.80	ES3						MADE GROUND (Grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.0.30-3.20m BGL ... pocket of red brown gravel. Gravel is fine subangular and include iron/clinker.
1.40	J4						
1.60	B5					(2.90)	
2.00	LB6						between c.1.80-3.20m BGL ... some recovered slag has white precipitate deposits on surface.
2.40	J7						
2.80	B8						
						3.20	
							Terminated at 3.20m BGL - obstruction.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454567.524 N:522775.268		**MPA_AUK_TP116**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.355	**Start Date:** 06/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP116.1
MPA_AUK_TP116

Figure MPA_AUK_TP116.2
MPA_AUK_TP116

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454567.524 N:522775.268		**MPA_AUK_TP116**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.355	**Start Date:** 06/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP116.3
MPA_AUK_TP116

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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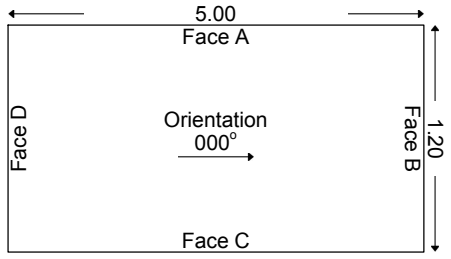
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454708.734 N:522766.034		**MPA_AUK_TP117**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.965	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.20	MADE GROUND (Brown grey gravel with wod and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.30	J1						
0.50	B2						MADE GROUND (Grey green yellow gravel with high cobble content. Gravel is fine to coarse subangular and includes slag and yellow brick. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). at c.1.00m BGL ... previously backfilled/tipped. 2No. 50mm diameter redundant pipe sections running 270 degrees (in middle of pit) with fibrous cement lagging.
0.60	ES3						
1.30	J4						
1.50	B5						
2.00	LB6						
2.30	J7					(4.30)	
2.50	B8						between c.2.80-4.50m BGL ... lenses of red brown sandy gravel. Sand is fine to coarse and mainly includes ash. Gravel is fine to medium subangular and includes ash, clinker and burnt mudstone.
3.30	J9						
3.50	B10						
4.30	J11					4.50	
4.50	B12						*Complete at 4.50m BGL.*

PLAN



GROUNDWATER
No groundwater inflow observed. At c.3.50-4.00m BGL - Slag is damp.

STABILITY
Pit sides and base unstable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP117
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454708.734 N:522766.034		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.965	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP117.1
MPA_AUK_TP117

Figure MPA_AUK_TP117.2
MPA_AUK_TP117

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP117
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454708.734 N:522766.034		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.965	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP117.3
MPA_AUK_TP117

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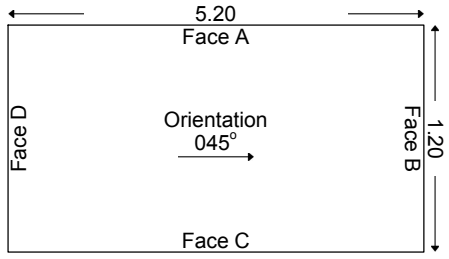
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454739.993 N:522662.828		**MPA_AUK_TP118**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.317	**Start Date:** 08/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.50	J1						MADE GROUND (Grey green yellow gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
0.60	B2						
0.80	ES3						
						(2.90)	
1.80	J4						between c.1.80-3.20m BGL ... slag is fused.
1.90	B5						
2.00	LB6						at c.2.50m BGL ... large fused section of slag.
2.80	J7						
2.90	B8					3.20	
							Terminated at 3.20m BGL - due to snapped ripper tooth on excavator.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454739.993 N:522662.828		**MPA_AUK_TP118**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.317	**Start Date:** 08/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP118.1
MPA_AUK_TP118

Figure MPA_AUK_TP118.2
MPA_AUK_TP118

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454739.993 N:522662.828		**MPA_AUK_TP118**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.317	**Start Date:** 08/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP118.3
MPA_AUK_TP118 Spoil

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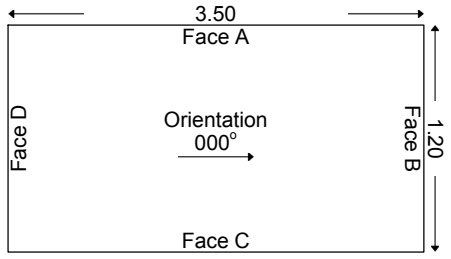
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454305.588 N:522861.286		**MPA_AUK_TP119**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.069	**Start Date:** 06/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.30	J1					(1.20)	MADE GROUND (Brown sandy gravel with wood and metal fragments. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, concrete and slag. Slag content is 25-50%. Slag is grey vesicular).
0.80	B2						
1.00	ES3					1.20	
1.40	J4					1.50	MADE GROUND (Grey black compacted ash. Recovered as gravel. Gravel is fine to coarse angular).
1.70	J5						MADE GROUND (Grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
2.00	B6						
2.70	J7						at c.2.60m BGL ... slag is mainly blue grey.
3.00	LB8					(3.00)	
3.70	J9						at c.3.60m BGL ... a pocket of yellow bricks noted.
4.00	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP119
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454305.588 N:522861.286		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.069	**Start Date:** 06/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP119.1
MPA_AUK_TP119

Figure MPA_AUK_TP119.2
MPA_AUK_TP119

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454305.588 N:522861.286		**MPA_AUK_TP119**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 9.069	**Start Date:** 06/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP119.3
MPA_AUK_TP119

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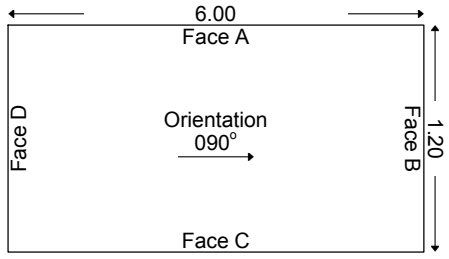
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454403.192 N:522886.748		**MPA_AUK_TP120**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 6.977	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 75-100%. Slag is vesicular).
0.40	J1					0.50	
0.60	B2						MADE GROUND (Compacted grey green blue gravel. Gravel is fine to coarse subangular slag and ash. Slag content is 75-100%. Slag is vesicular).
0.80	ES3						MADE GROUND (Grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and includes slag. Slag content is 100%. Slag is vesicular).
1.60	J4						
1.80	B5						
2.00	LB6					(4.00)	
2.60	J7						
2.80	B8						between c.2.90-4.50m BGL ... slag is fused with whites deposits on surface.
3.60	J9						
3.80	B10					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP120
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454403.192 N:522886.748		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 6.977	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP120.1
MPA_AUK_TP120

Figure MPA_AUK_TP120.2
MPA_AUK_TP120

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP120
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454403.192 N:522886.748		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 6.977	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP120.3
MPA_AUK_TP120

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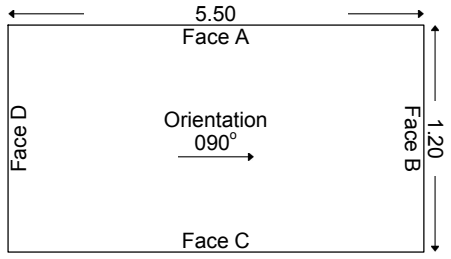
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454522.384 N:522877.338		**MPA_AUK_TP121**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.400	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.50	J1						MADE GROUND (Grey green yellow sandy gravel with high cobble content and metal fragments. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag, yellow brick and concrete. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and includes slag. Slag content is 100%. Slag is vesicular).
0.60	B2						
0.80	ES3					(1.60)	
						1.90	
2.00	J4						MADE GROUND (Grey green blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and includes slag. Slag content is 100%. Slag is vesicular).
2.20	B5					(1.00)	
2.50	LB6						
						2.90	
3.00	J7						MADE GROUND (Grey green yellow blue sandy gravel with high cobble content. Sand is fine to coarse and predominantly includes ash. Gravel is fine to coarse subangular and includes slag and yellow brick. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and includes slag. Slag content is 100%. Slag is vesicular). between c.2.90-4.50m BGL ... lenses of orange brown clayey GRAVEL. Gravel is fine to coarse angular and includes burnt mudstone.
3.20	B8					(1.60)	
4.00	J9						
4.20	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454522.384 N:522877.338		**MPA_AUK_TP121**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.400	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP121.1
MPA_AUK_TP121

Figure MPA_AUK_TP121.2
MPA_AUK_TP121

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454522.384 N:522877.338		**MPA_AUK_TP121**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 8.400	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP121.3
MPA_AUK_TP121

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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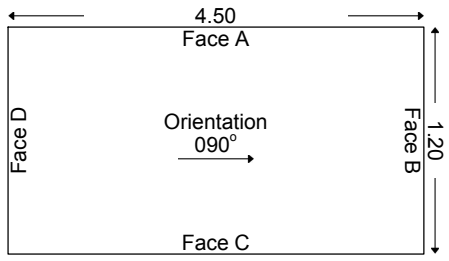
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454598.678 N:522875.032		**MPA_AUK_TP122**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.922	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.40	J1						MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
0.50	B2						
0.70	ES3						
1.40	J4						
1.70	B5						
						(4.20)	
2.50	J6						
2.80	LB7						between c.2.80-4.50m BGL ... slag is fused.
3.50	J8						
3.80	B9						
						4.50	
4.50	J10						*Complete at 4.50m BGL.*

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP122
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454598.678 N:522875.032		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.922	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP122.1
MPA_AUK_TP122

Figure MPA_AUK_TP122.2
MPA_AUK_TP122

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454598.678 N:522875.032		**MPA_AUK_TP122**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.922	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP122.3
MPA_AUK_TP122

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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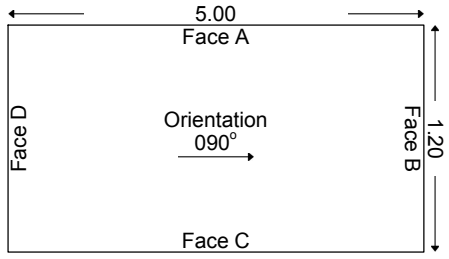
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454389.723 N:522952.986		**MPA_AUK_TP123**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.198	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						(0.40) 0.40	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and purple brick. Slag content is 75-100%. Slag is vesicular).
						0.60	
						0.70	MADE GROUND (Compacted grey green blue gravel. Gravel is fine to coarse subangular slag and ash. Slag content is 75-100%. Slag is vesicular).
0.80	J1						
0.90	B2						
1.00	ES3						MADE GROUND (Yellow brown sandy gravel. Sand is fine to coarse. Gravel is fine to coarse subangular and includes limestone and sandstone).
							MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and includes slag. Slag content is 100%. Slag is vesicular).
1.80	J4						
1.90	B5						
2.30	LB6						
						(3.80)	
2.80	J7						
2.90	B8						
3.80	J9						
3.90	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP123
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454389.723 N:522952.986		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.198	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP123.1
MPA_AUK_TP123

Figure MPA_AUK_TP123.2
MPA_AUK_TP123

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP123
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454389.723 N:522952.986		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.198	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP123.3
MPA_AUK_TP123

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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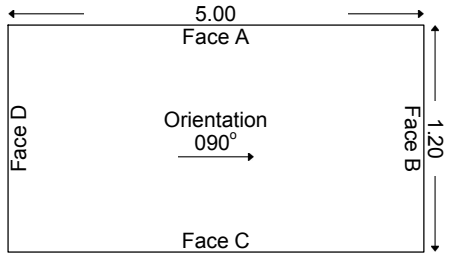
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.744 N:522994.039		**MPA_AUK_TP124**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.230	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
						0.30	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.30	J1						MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.1.00-4.50m BGL ... random lenses and bands of orange burnt clayey shale (recovered as fine to coarse angular gravel).
0.60	B2						
0.80	ES3						
1.50	J4						
1.60	B5						
2.00	LB6					(4.20)	
2.70	J7						between c.2.80-4.50m BGL ... slag is fused with white deposits on surface.
3.00	B8						
3.70	J9						
4.00	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP124
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.744 N:522994.039		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.230	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP124.1
MPA_AUK_TP124

Figure MPA_AUK_TP124.2
MPA_AUK_TP124

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP124
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454459.744 N:522994.039		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.230	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP124.3
MPA_AUK_TP124

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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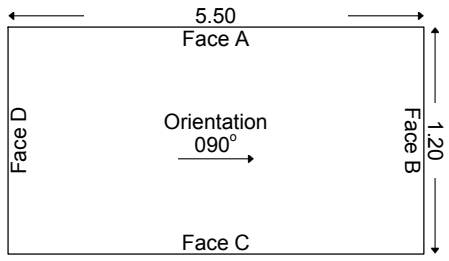
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454513.712 N:522965.533		**MPA_AUK_TP125**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.708	**Start Date:** 07/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(1.80)	MADE GROUND (Brown grey gravel with wood and metal fragments. Gravel is fine to coarse subangular and includes slag, concrete and yellow and red brick. Slag content is 75-100%. Slag is vesicular).
0.60	B2						
0.80	ES3						
						1.80	
1.90	J4					(2.70)	MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag and yellow brick. Slag content is 75-100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
2.20	B5						
2.40	LB6						
2.90	J7						between c.3.10-4.50m BGL ... slag is fused.
3.20	B8						
3.90	J9						
4.20	B10					4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454513.712 N:522965.533		**MPA_AUK_TP125**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.708	**Start Date:** 07/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP125.1
MPA_AUK_TP125

Figure MPA_AUK_TP125.2
MPA_AUK_TP125

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP125
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454513.712 N:522965.533		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.708	**Start Date:** 07/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP125.3
MPA_AUK_TP125

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
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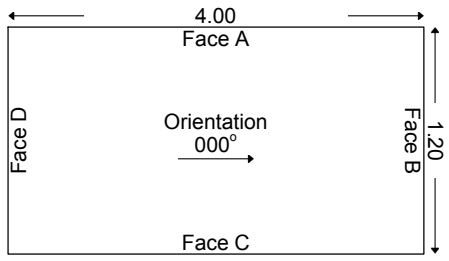
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP126
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454677.394 N:522465.464		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.523	**Start Date:** 13/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(1.10)	MADE GROUND (Brown black grey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular).
0.60	B2						
0.80	ES3					1.10	
1.60	J4					(2.90)	MADE GROUND (Grey green gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular).
1.80	B5						
2.30	LB6						
2.60	J7						
2.80	B8						
3.60	J9						
3.80	B10					4.00	
							Terminated at 4.00m BGL - obstruction possibly metallic.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP126
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454677.394 N:522465.464		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.523	**Start Date:** 13/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP126.1
MPA_AUK_TP126

Figure MPA_AUK_TP126.2
MPA_AUK_TP126

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP126
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454677.394 N:522465.464		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.523	**Start Date:** 13/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP126.3
MPA_AUK_TP126

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

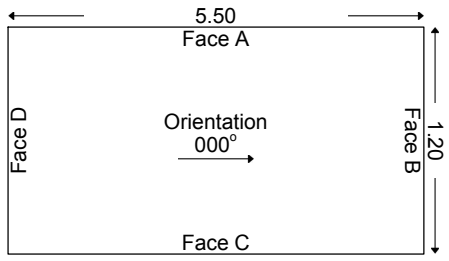
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454693.944 N:522537.382		**MPA_AUK_TP127**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 10/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(1.00)	MADE GROUND (Brown black grey very sandy gravel with wood and metal fragments. Sand is fine to medium and predominantly includes ash. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 25-50%. Slag is vesicular).
0.60	B2						
0.90	ES3					1.00	
1.60	J4					(3.00)	MADE GROUND (Grey green yellow white gravel with high cobble and boulder content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular. Boulders are angular and include slag. Slag content is 100%. Slag is vesicular). at c.1.60m BGL ... 75mm diameter electric cable running 270 degrees in centre of pit (redundant).
1.80	B5						
2.30	LB6						
2.60	J7						
2.80	B8						
3.60	J9						
3.80	B10					4.00	
							Terminated at 4.00m BGL - metallic obstruction.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:35:40

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP127
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454693.944 N:522537.382		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 10/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP127.1
MPA_AUK_TP127

Figure MPA_AUK_TP127.2
MPA_AUK_TP127

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TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP127
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454693.944 N:522537.382		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.405	**Start Date:** 10/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP127.3
MPA_AUK_TP127 Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

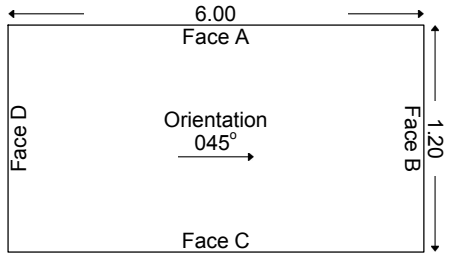
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454711.391 N:522576.301		**MPA_AUK_TP128**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.902	**Start Date:** 10/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1					(1.00)	MADE GROUND (Brown grey very sandy gravel with wood fragments. Sand is fine to medium and predominantly includes ash. Gravel is fine to coarse subangular and includes slag and concrete. Slight hydrocarbon odour noted. Slag content is 25-50%. Slag is vesicular).
0.60	B2						
0.90	ES3					1.00	
1.30	J4						MADE GROUND (Grey green yellow white gravel with cobbles. Gravel is fine to coarse subangular and includes slag. Slag content is 50-75% becoming 75-100% with depth. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). at c.1.60m BGL ... 75mm electric cable running 270 degrees in centre of pit (redundant).
1.50	B5						
2.60	J6					(3.50)	between c.2.50-4.50m BGL ... lenses of orange brown clayey sandy gravel. Sand is fine to medium. Gravel is fine to medium subangular and includes burnt mudstone, clinker and ash.
2.80	B7						
3.00	LB8						
3.60	J9						
3.80	B10						
						4.50	
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. At c.4.20-4.50m - slag is damp.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

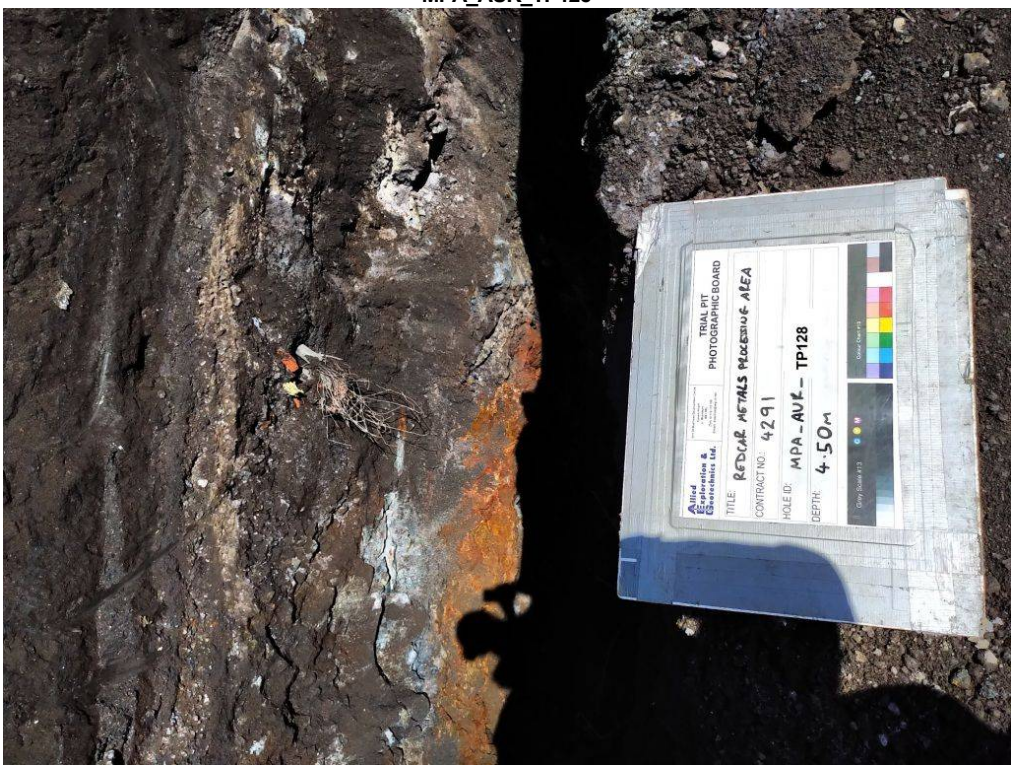
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454711.391 N:522576.301		**MPA_AUK_TP128**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.902	**Start Date:** 10/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP128.1
MPA_AUK_TP128

Figure MPA_AUK_TP128.2
MPA_AUK_TP128



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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454711.391 N:522576.301		**MPA_AUK_TP128**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.902	**Start Date:** 10/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP128.3
MPA_AUK_TP128

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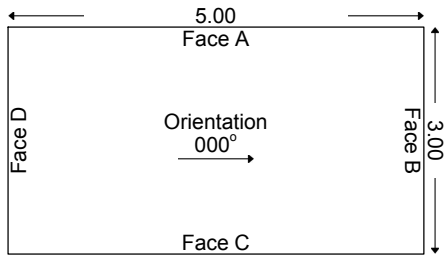
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454766.172 N:522560.929		**MPA_AUK_TP129**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.280	**Start Date:** 13/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.50	J1					(1.30)	MADE GROUND (Brown black grey sandy gravel with wood fragments. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag and concrete. Slag content is 75-100%. Slag is vesicular). at c.0.10m BGL ... grey concrete angular boulder (2.50x2.50x1.20m). between c.0.40-1.30m BGL ... concrete wall at southern face of pit.
0.80	B2						
1.10	ES3					1.30	
							Terminated at 1.30m BGL - concrete slab.

PLAN



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:36:00

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

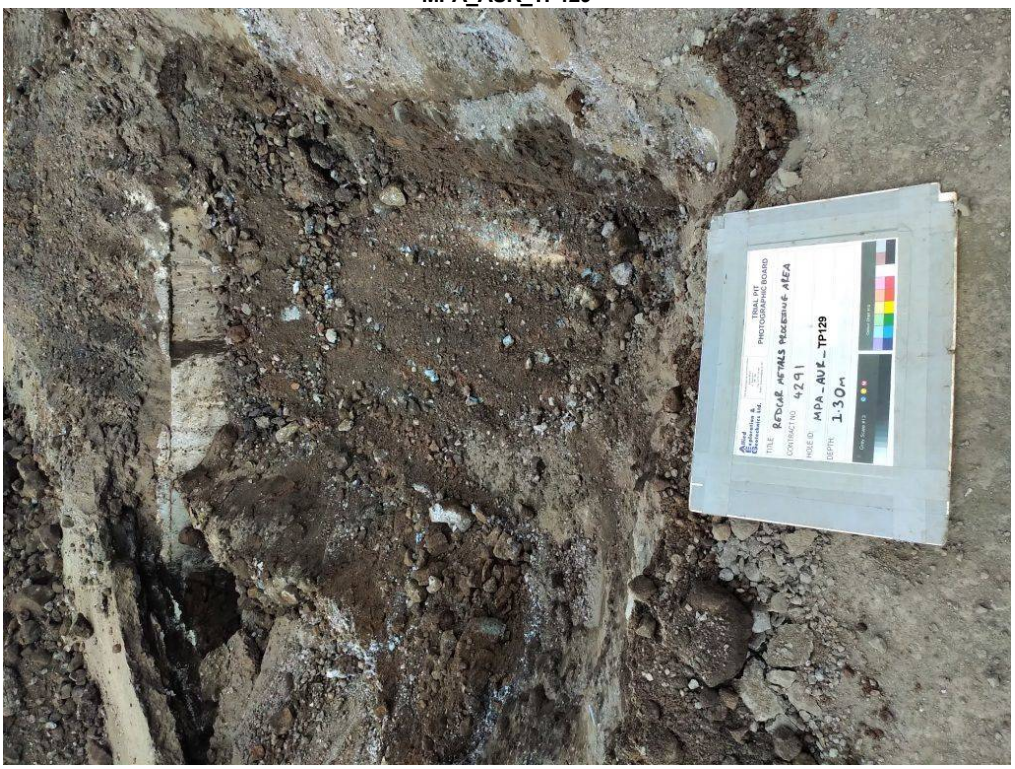
TRIAL PIT RECORD

Status:- PRELIM2

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.** MPA_AUK_TP129
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454766.172 N:522560.929		
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.280	**Start Date:** 13/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP129.1
MPA_AUK_TP129

Figure MPA_AUK_TP129.2
MPA_AUK_TP129



ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454766.172 N:522560.929		**MPA_AUK_TP129**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.280	**Start Date:** 13/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP129.3
MPA_AUK_TP129 Spoil

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

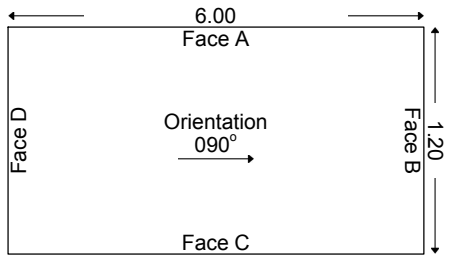
TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454486.409 N:522919.938		**MPA_AUK_TP130**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.682	**Start Date:** 10/07/2020	**Sheet:** 1 of 3

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.20 0.30 0.60	J1 B2 ES3					(1.00) 1.00	MADE GROUND (Brown grey gravel with wood, metal cable and sheet metal (2.00x 2.00m). Gravel is fine to coarse subangular slag, concrete and yellow and red brick. Slag content is 50-75%. Slag is vesicular).
1.20 1.30 2.30 2.50 3.30 3.50 4.30 4.40	J4 B5 J6 LB7 J8 B9 J10 B11					(3.50) 4.50	MADE GROUND (Grey green yellow blue gravel with high cobble content. Gravel is fine to coarse subangular and includes slag. Slag content is 100%. Slag is vesicular. Cobbles are angular and include slag. Slag content is 100%. Slag is vesicular). between c.2.00-4.50m BGL ... lenses of orange brown clayey sandy gravel. Sand is fine to medium. Gravel is fine to medium subangular and includes burnt mudstone, clinker and ash.
							Complete at 4.50m BGL.

PLAN



GROUNDWATER
No groundwater inflow observed. At c.3.50m BGL - slag is damp.

STABILITY
Pit sides and base unstable between 0.00-2.00m BGL.

ADDITIONAL INFORMATION

Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by:	Logged by: D. Portsmouth	Contract No. **4291**

Print Date and Time: 03/08/2020 06:36:09

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Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL **Tel:** 01772 735 300 **Fax:** 01772 735 999

TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454486.409 N:522919.938		**MPA_AUK_TP130**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.682	**Start Date:** 10/07/2020	**Sheet:** 2 of 3

Figure MPA_AUK_TP130.1
MPA_AUK_TP130

Figure MPA_AUK_TP130.2
MPA_AUK_TP130

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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TRIAL PIT RECORD

Status:- **PRELIM2**

Project: Former Redcar Steelworks - Metal Processing Area			**Exploratory Hole No.**
Client: South Tees Development Corporation	**Location:** Former Redcar Steelworks, Redcar E:454486.409 N:522919.938		**MPA_AUK_TP130**
Method (Equipment): Machine Excavated (JCB 3CX)	**Ground Level (m):** 7.682	**Start Date:** 10/07/2020	**Sheet:** 3 of 3

Figure MPA_AUK_TP130.3
MPA_AUK_TP130 Spoil

Allied Exporation and Geotechnics Limited
Unit 25 Stella Gill Industrial Estate
Pelton Fell
Chester - Le - Street
Co Durham
DH2 2RG
(Tel): 0191 387 4700
(Fax): 0191 387 4710
(Email): enquiries@aeg.uk.net

KEY:

TRIAL PIT

N
W E
S

Base Plan Supplied by Consulting Engineer

Drawing Title:
ENC 01 : Exploratory Hole Location Plan

Drawing No.:
AEG/4291/01

Contract Title:
Former Redcar Steelworks - Metal Processing Area

Client:
South Tees Development Corporation

Consultant:
Arcadis
1 Whitehall Riverside
Leeds, LS1 4BN

Contract No.:
4291

Scale:
NOT TO SCALE

Date:
01/08/2020

APPENDIX D

Slag Analysis Report – Not Currently Available

APPENDIX E

GQRA – Summary of Soil Screen

Table E1: Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Maximum Concentration Measured	Maximum Concentration Measured (Made Ground - Slag)	Maximum Concentration Measured (Granular Made Ground)
Test	**LOD**	**Units**					
Metals							
Aluminium	1	mg/kg			50,000	50,000	19,000
Antimony	1	mg/kg	470	USEPA	13	13	13
Arsenic	0.2	mg/kg	640	S4UL	230	230	220
Barium	2	mg/kg	19,000	Arcadis	890	800	890
Beryllium	0.2	mg/kg	12	S4UL	5	5	2
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	28	28	18
Cadmium	0.1	mg/kg	190	S4UL	8	2	8
Chromium	0.15	mg/kg	8,600	S4UL	740	740	710
Chromium, Hexavalent	1	mg/kg	33	S4UL	0	0	0
Copper	0.2	mg/kg	68,000	S4UL	1,500	1,500	250
Iron	25	mg/kg			510,000	440,000	510,000
Lead	0.3	mg/kg	2,300	C4SL	550	550	480
Magnesium	1	mg/kg			67,000	67,000	34,000
Manganese	20	mg/kg			65,000	65,000	32,000
Mercury	0.05	mg/kg	*58**	S4UL	1.9	0.2	1.9
Molybdenum	0.4	mg/kg	5,540	Arcadis	68	62	68
Nickel	1	mg/kg	980	S4UL	150	150	100
Silicon	10	mg/kg			130,000	130,000	63,000
Vanadium	0.8	mg/kg	9,000	S4UL	2,500	2,500	800
Zinc	1	mg/kg	730,000	S4UL	1,600	650	1,600
Inorganics							
Loss on Ignition at 440oC	0.01	%		-			
pH		pH		-	12.9	12.9	12.5
Calorific Value	1	MJ/kg		-			
Cyanide, Total	0.1	mg/kg		-	20.0	7.4	20.0
Cyanide, Free	0.1	mg/kg	66	DQRA	0.0	0.0	0.0
Thiocyanate	0.6	mg/kg	230	USEPA	1.8	1.8	0.0
Organic matter	0.1	%		-	4.2	4.0	4.2
Sulphate Aqueous Extract as SO4	10	mg/l		-	1,500	1,500	630
Sulphur (free)	0.75	mg/kg		-	35	30	35
Petroleum Hydrocarbons							
Aliphatic C5-C6	0.01	mg/kg	*3200***	S4UL	0.0	0.0	0.0
Aliphatic C6-C8	0.01	mg/kg	*7800***	S4UL	0.0	0.0	0.0
Aliphatic C8-C10	0.01	mg/kg	*2000***	S4UL	0.0	0.0	0.0
Aliphatic C10-C12	1.5	mg/kg	*9700***	S4UL	2.9	2.9	2.1
Aliphatic C12-C16	1.2	mg/kg	*59000***	S4UL	15.0	15.0	4.6
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	34	34	17
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	890	890	350
Aliphatic C5-C35	10	mg/kg		na	940	940	370
Aromatic C5-C7	0.01	mg/kg	*26000***	S4UL	0.0	0.0	0.0
Aromatic C7-C8	0.01	mg/kg	*56000***	S4UL	0.0	0.0	0.0
Aromatic C8-C10	0.01	mg/kg	*3500***	S4UL	0.0	0.0	0.0
Aromatic C10-C12	0.9	mg/kg	*16000***	S4UL	0.0	0.0	0.0
Aromatic C12-C16	0.5	mg/kg	*36000***	S4UL	7.7	4.1	7.7
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	26	16	26
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	190	100	190
Aromatic C5-C35	10	mg/kg		na	220	110	220
TPH Ali/Aro Total	10	mg/kg		na	1,000	1,000	560
EPH (C10-C40)	10	mg/kg		na			
PAHs							
Naphthalene	0.03	mg/kg	*1,900*	Wood	0.42	0.04	0.42
Acenaphthylene	0.03	mg/kg	*83000***	S4UL	0.39	0.00	0.39
Acenaphthene	0.03	mg/kg	*84000***	S4UL	0.66	0.13	0.66
Fluorene	0.03	mg/kg	*63000***	S4UL	0.25	0.00	0.25
Phenanthrene	0.03	mg/kg	22,000	S4UL	1.80	1.00	1.80
Anthracene	0.03	mg/kg	520,000	S4UL	0.87	0.17	0.87
Fluoranthene	0.03	mg/kg	23,000	S4UL	7.60	1.20	7.60
Pyrene	0.03	mg/kg	54,000	S4UL	4.80	0.78	4.80
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	2.50	0.23	2.50
Chrysene	0.03	mg/kg	350	S4UL	2.70	0.35	2.70
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	4.60	0.34	4.60
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	1.50	0.13	1.50
Benzo(a)pyrene	0.03	mg/kg	77	Wood	4.20	0.16	4.20
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	2.50	0.10	2.50
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	0.55	0.00	0.55
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	3.50	0.10	3.50
PAH - USEPA 16, Total	0.1	mg/kg		na	39	4.40	39.00
PCBs							
PCB 28 + PCB 31	0.01	mg/kg		-	0.00	0.00	0.00
PCB 52	0.01	mg/kg		-	0.00	0.00	0.00
PCB 101	0.01	mg/kg		-	0.00	0.00	0.00
PCB 118	0.01	mg/kg		-	0.00	0.00	0.00
PCB 153	0.01	mg/kg		-	0.00	0.00	0.00
PCB 138	0.01	mg/kg		-	0.00	0.00	0.00
PCB 180	0.01	mg/kg		-	0.00	0.00	0.00
PCB 7 Total	0.01	mg/kg		na	0.00	0.00	0.00
Phenols							
Phenol - Monohydric	0.3	mg/kg	760	S4UL	0	0.00	0.00

The following GACs have been used in order of availablity:

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C4SL: (Commerical End Use)	Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document, December 2014
Arcadis	Where published criteria above are not available, Arcadis has derived GAC based on EA guidance and assumptions in line with current industry standards and standard CLEA inputs for a commerical land use.
USEPA	GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL). Available at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Wood derived GAC based on CLEA v1.07 were presented in the Wood 2019 report for benzo(a)pyrene and naphthalene. It is understood that these values were acceptable to the regulator for this site and as such they have been retained here.

Notes

GAC	Generic Assessment Criteria
na	Comprises multiple contaminant, no applicable GAC
*123**	S4UL exceeds the vapour saturation limit
*123***	S4UL exceeds the solubility saturation limit
-	No applicable GAC readily available
	Elements present naturally in soil with typically low toxicity
<0.1	Concentration less then the method detection limit
-	Not analysed
	Contaminant of Concern in excess of Human Health GAC

Table E2: Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Maximum Concentration Measured
VOCs					
Vinyl Chloride	0.01	mg/kg	0.059	S4UL	0.0
1,1 Dichloroethylene	0.01	mg/kg	1,000	USEPA	0.0
Trans-1,2-dichloroethylene	0.01	mg/kg	23,000	USEPA	0.0
1,1-dichloroethane	0.01	mg/kg	16	USEPA	0.0
Cis-1,2-dichloroethylene	0.01	mg/kg	2,300	USEPA	0.0
2,2-dichloropropane	0.01	mg/kg	-		0.0
Bromochloromethane	0.01	mg/kg	630	USEPA	0.0
Chloroform	0.01	mg/kg	99	S4UL	0.0
1,1,1-trichloroethane	0.01	mg/kg	660	S4UL	0.0
1,1-dichloropropene	0.01	mg/kg	-		0.0
Carbon tetrachloride	0.01	mg/kg	2.9	S4UL	0.0
Benzene	0.01	mg/kg	27	S4UL	0.0
1,2-dichloroethane	0.01	mg/kg	0.67	S4UL	0.0
Trichloroethylene	0.01	mg/kg	1.2	S4UL	0.0
1,2-dichloropropane	0.01	mg/kg	11.0	USEPA	0.0
Dibromomethane	0.01	mg/kg	99.0	USEPA	0.0
Bromodichloromethane	0.01	mg/kg	1.3	USEPA	0.0
cis-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA	0.0
Toluene	0.01	mg/kg	56,000	S4UL	0.0
trans-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA	0.0
1,1,2-trichloroethane	0.01	mg/kg	5	USEPA	0.0
Tetrachloroethylene	0.01	mg/kg	19	S4UL	0.0
1,3-dichloropropane	0.01	mg/kg	23,000	USEPA	0.0
Dibromochloromethane	0.01	mg/kg	39	USEPA	0.0
1,2-dibromoethane	0.01	mg/kg	0.16	USEPA	0.0
Chlorobenzene	0.01	mg/kg	56	S4UL	0.0
1,1,1,2-tetrachloroethane	0.01	mg/kg	110	S4UL	0.0
Ethylbenzene	0.01	mg/kg	5,700	S4UL	0.0
m+p-Xylene	0.01	mg/kg	5,900	S4UL	0.0
o-Xylene	0.01	mg/kg	6,600	S4UL	0.0
Styrene	0.01	mg/kg	35,000	USEPA	0.0
Bromoform	0.01	mg/kg	86	USEPA	0.0
Isopropylbenzene	0.01	mg/kg	-		0.0
Bromobenzene	0.01	mg/kg	1,800	USEPA	0.0
1,2,3-trichloropropane	0.01	mg/kg	0.11	USEPA	0.0
n-propylbenzene	0.01	mg/kg	-		0.0
2-chlorotoluene	0.01	mg/kg	23,000	USEPA	0.0
1,3,5-trimethylbenzene	0.01	mg/kg	1,500	USEPA	0.0
4-chlorotoluene	0.01	mg/kg	23,000	USEPA	0.0
Tert-butylbenzene	0.01	mg/kg	120,000	USEPA	0.0
1,2,4-trimethylbenzene	0.01	mg/kg	1,800	USEPA	0.0
sec-butylbenzene	0.01	mg/kg	120,000	USEPA	0.0
p-isopropyltoluene	0.01	mg/kg	-		0.0
1,3-dichlorobenzene	0.01	mg/kg	30	S4UL	0.0
1,4-dichlorobenzene	0.01	mg/kg	4,400	S4UL	0.0
n-butylbenzene	0.01	mg/kg	58,000	USEPA	0.0
1,2-dichlorobenzene	0.01	mg/kg	2,000	S4UL	0.0
1,2-dibromo-3-chloropropane	0.01	mg/kg	0.06	USEPA	0.0
1,2,4-trichlorobenzene	0.01	mg/kg	220	S4UL	0.0
Hexachlorobutadiene	0.01	mg/kg	31	S4UL	0.0
1,2,3-trichlorobenzene	0.01	mg/kg	102	S4UL	0.0
MTBE	0.01	mg/kg	210	USEPA	0.0

The following GACs have been used in order of availablity:

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C4SL: (Commerical End Use)	Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document, December 2014
Arcadis	Where published criteria above are not available, Arcadis has derived GAC based on EA guidance and assumptions in line with current industry standards and standard CLEA inputs for a commerical land use.
USEPA	GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL). Available at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Notes

GAC	Generic Assessment Criteria
na	Comprises multiple contaminant, no applicable GAC
*123**	S4UL exceeds the vapour saturation limit
*123***	S4UL exceeds the solubility saturation limit
-	No applicable GAC readily available
	Elements present naturally in soil with typically low toxicity
<0.1	Concentration less then the method detection limit
-	Not analysed
	Contaminant of Concern in excess of Human Health GAC

APPENDIX F

GQRA – Summary of Soil Leachate Screen

Table F1: Leachate GAC Protective of Human Health and Water Resources

Contaminant of Concern	MDL	Units	Human Health Inhalation GAC (On-site Commerical Worker)	EQS (Estuaries and Coastal Waters)	DWS	Maximum Concentration Measured
Metals						
Antimony, Dissolved	0.17	ug/l	NVP	-	5	0.68
Arsenic, Dissolved	0.16	ug/l	NVP	25	10	**23**
Barium, Dissolved	0.26	ug/l	NVP	-	700	560
Beryllium, Dissolved	0.1	ug/l	NVP	-	-	0.0
Boron, Dissolved	12	ug/l	NVP	7000	1000	190
Cadmium, Dissolved	0.03	ug/l	NVP	0.2	5	0.04
Chromium, Dissolved	0.25	ug/l	NVP	-	50	8.3
Chromium, Hexavalent	7	ug/l	-	0.6		0.0
Copper, Dissolved	0.4	ug/l	NVP	3.76	2000	13
Iron, Dissolved	5.5	ug/l	NVP	1000	200	350
Lead, Dissolved	0.09	ug/l	NVP	1.3	10	61
Magnesium, Dissolved	0.02	mg/l	NVP	-	-	4.4
Manganese, Dissolved	0.22	ug/l	NVP	-	50	19
Mercury, Dissolved	0.01	ug/l	NVP	0.07	1	0.07
Molybdenum, Dissolved	1.1	ug/l	-	-	70	**95**
Nickel, Dissolved	0.5	ug/l	NVP	8.6	20	0.5
Vanadium, Dissolved	0.6	ug/l	NVP	100	-	51
Zinc, Dissolved	1.3	ug/l	NVP	7.9	3000	5.7
Inorganics						
pH	-	pH	-	6 - 8.5	-	12.3
Cyanide, Total	40	ug/l	-	1	50	0.0
Ammoniacal Nitrogen as N	0.015	mg/l	-	-	0.5	0.41
Chloride	0.1	mg/l	-	-	-	11
Sulphate as SO4	0.1	mg/l	-	-	-	240
Petroleum Hydrocarbons						
Aliphatic C5-C6	0.1	ug/l	>SOL	#	#	0.0
Aliphatic C6-C8	0.1	ug/l	>SOL	#	#	0.0
Aliphatic C8-C10	0.1	ug/l	>SOL	#	#	0.0
Aliphatic C10-C12	1	ug/l	>SOL	#	#	0.0
Aliphatic C12-C16	1	ug/l	>SOL	#	#	0.0
Aliphatic C16-C21	1	ug/l	NR	#	#	0.0
Aliphatic C21-C35	1	ug/l	NR			0.0
Aromatic C5-C7	0.1	ug/l	57000	8	1	0.0
Aromatic C7-C8	0.1	ug/l	>SOL	74	700	0.0
Aromatic C8-C10	0.1	ug/l	>SOL	#	#	0.0
Aromatic C10-C12	1	ug/l	>SOL	#	#	0.0
Aromatic C12-C16	1	ug/l	>SOL	#	#	0.0
Aromatic C16-C21	1	ug/l	NR	#	#	0.0
Aromatic C21-C35	1	ug/l	NR	#	#	0.0
TPH Ali/Aro Total	10	ug/l	na	50*	10**	0.0
PAHs						
Naphthalene	0.05	ug/l	>SOL	2	2	85
Acenaphthylene	0.01	ug/l	>SOL	-	-	0.3
Acenaphthene	0.01	ug/l	>SOL	-	-	2.4
Fluorene	0.01	ug/l	>SOL	-	-	0.66
Phenanthrene	0.01	ug/l	>SOL	-	-	1.5
Anthracene	0.01	ug/l	>SOL	0.1	-	0.46
Fluoranthene	0.01	ug/l	>SOL	0.0063	-	2.5
Pyrene	0.01	ug/l	>SOL	-	-	1.9
Benzo(a)anthracene	0.01	ug/l	>SOL	-	-	1.8
Chrysene	0.01	ug/l	>SOL	-	-	2.2
Benzo(b)fluoranthene	0.01	ug/l	>SOL	0.017	0.025	3.3
Benzo(k)fluoranthene	0.01	ug/l	>SOL	0.017	0.025	1
Benzo(a)pyrene	0.01	ug/l	>SOL	0.027	0.01	2.3
Indeno(1,2,3-c,d)pyrene	0.01	ug/l	>SOL	-	0.025	2.1
Dibenzo(a,h)anthracene	0.01	ug/l	>SOL	-	-	0.45
Benzo(g,h,i)perylene	0.01	ug/l	>SOL	0.00082	0.025	2.2
PAH Total	0.2	ug/l	>SOL	na		90
Phenols						
Phenol - Monohydric	100	ug/l	>SOL	7.7	7.7	0

The following GACs have been used:

Arcadis

Where published criteria above are not available, Arcadis has derived GAC based on EA guidance and assumptions in line with current industry standards and standard CLEA inputs for a commerical land use.

Notes

GAC	Generic Assessment Criteria
DWS	Drinking Water Standard
EQS	Environmental Quality Standard (Estuaries and Coastal Waters)
NVP	Contaminant has low vapour phase in groundwater
>SOL	Target acceptable risk not exceeded at the theoretical solubility concentration
NR	No appropriate inhalation reference dose identified during review of toxicological data
na	Comprises multiple contaminant, no applicable GAC
-	No water quality standard identified as suitable for deriving generic assessment criteria
#	No GAC for individua TPH fractions given that the compliacne criteria is for sum TPH
<0.1	Concentration less then the method detection limit
	Contaminant of Concern in excess of Human Health GAC
1.23	Contaminant of Concern in excess of DWS
1.23	Contaminant of Concern in excess of EQS
1.23	Contaminant of Concern in excess of DWS and EQS
*	EC Surface Water Directive, 1975
**	Water Supply (Water Quality) Regulation, 1989

Table F3: Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Maximum Concentration Measured
3&4-Methylphenol	0.1	mg/kg	82,000	USEPA	0.0
2,4-Dimethylphenol	0.1	mg/kg	16,000	USEPA	0.0
Bis-(dichloroethoxy)methane	0.1	mg/kg	-		0.0
2,4-Dichlorophenol	0.1	mg/kg	2,500	USEPA	0.0
1,2,4-Trichlorobenzene	0.1	mg/kg	110	USEPA	0.0
4-Chloro-3-methylphenol	0.1	mg/kg	82,000	USEPA	0.0
2-Methylnaphthalene	0.1	mg/kg	3,000	USEPA	0.1
Hexachlorocyclopentadiene	0.1	mg/kg	8	USEPA	0.0
2,4,6-Trichlorophenol	0.1	mg/kg	210	USEPA	0.0
2,4,5-Trichlorophenol	0.1	mg/kg	82,000	USEPA	0.0
2-Chloronaphthalene	0.1	mg/kg	60,000	USEPA	0.0
2-Nitroaniline	0.1	mg/kg	8,000	USEPA	0.0
2,4-Dinitrotoluene	0.1	mg/kg	7.4	USEPA	0.0
3-Nitroaniline	0.1	mg/kg	-		0.0
4-Nitrophenol	0.1	mg/kg	-		0.0
Dibenzofuran	0.1	mg/kg	1,000	USEPA	0.1
2,6-Dinitrotoluene	0.1	mg/kg	1.50	USEPA	0.0
2,3,4,6-Tetrachlorophenol	0.1	mg/kg	25,000	USEPA	0.0
Diethylphthalate	0.1	mg/kg	660,000	USEPA	0.0
4-Chlorophenylphenylether	0.1	mg/kg	-		0.0
4-Nitroaniline	0.1	mg/kg	110	USEPA	0.0
2-Methyl-4,6-Dinitrophenol	0.1	mg/kg	-		0.0
Diphenylamine	0.1	mg/kg	82,000	USEPA	0.0
4-Bromophenylphenylether	0.1	mg/kg	-		0.0
Hexachlorobenzene	0.1	mg/kg	110	S4UL	0.0
Pentachlorophenol	0.1	mg/kg	400	S4UL	0.0
Di-n-butylphthalate	0.1	mg/kg	-		0.0
Butylbenzylphthalate	0.1	mg/kg	1,200	USEPA	0.0
Bis(2-ethylhexyl)phthalate	0.1	mg/kg	160	USEPA	0.0
Di-n-octylphthalate	0.1	mg/kg	8,200	USEPA	0.0
1,4-Dinitrobenzene	0.1	mg/kg	82	USEPA	0.0
Dimethylphthalate	0.1	mg/kg	-		0.0
1,3-Dinitrobenzene	0.1	mg/kg	82	USEPA	0.0
1,2-Dinitrobenzene	0.1	mg/kg	82	USEPA	0.0
2,3,5,6-Tetrachlorophenol	0.1	mg/kg	-		0.0
Azobenzene	0.1	mg/kg	26	USEPA	0.0
Carbazole	0.1	mg/kg	-		0.0

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C4SL: (Commerical End Use)	Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of
Arcadis	Where published criteria above are not available, Arcadis has derived GAC based on EA
USEPA	GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels

Notes

GAC	Generic Assessment Criteria
na	Comprises multiple contaminant, no applicable GAC
*123**	S4UL exceeds the vapour saturation limit
*123***	S4UL exceeds the solubility saturation limit
-	No applicable GAC readily available
	Elements present naturally in soil with typically low toxicity
<0.1	Concentration less then the method detection limit
-	Not analysed
	Contaminant of Concern in excess of Human Health GAC

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